1.0 Objectives

Our goal for this IPRO is to update the Chicago Embroidery Co. market position in order to generate growth for the business. We expect the company to grow to a 5 million dollar business in three years. By the end of the IPRO, we plan on having an updated website, new products for new markets, and important research data that shows which new markets will take best to patches.

2.0 Results to Date

MARKET

eBay

We assessed the feasibility of selling patches on eBay and what companies, if any, sell their patches on eBay. We found that patches are sold on eBay, and that there are a few major stores, but none that sell patches exclusively and none that are actually patch companies, just resellers. We then created eBay business account for "c-emblem", created an email account chicagoembroidery@gmail.com and used it to set up a Paypal account. We acquired patches to sell and design selling format for eBay. CEC gave us just over 100 patches and currently Tim is designing a template for the listings. We also researched other eBay seller's stated terms and came up with a standard set of terms for c-emblem. This includes terms for payment, shipping, returns, etc.

Schools

We conducted market research to gain insight on the feasibility of developing business opportunities through Chicago local schools. The various options of embroidered patches for students include stitched picture of school mascot for developing school spirit, name of school clubs, sport teams, “class of 2008” phrases, fundraising purposes, reward incentives, customized picture or words, etc. These patches may have different types of adhesive backing to suit personal preferences for attaching on backpacks, clothing, notebooks, and more.

So far, 22 emails have been sent out to various high schools in Chicago. They include: Lane Tech High school, De LaSalle Girls Division, De LaSalle Boys Division, Lake View High School, Lincoln Park High School, and William Howard Taft. Within those schools, Jacintha has followed up with phone calls, in which three schools were uninterested and two were opened to the idea. The two schools that showed interest were the De LaSalle Boys Division, and the bookstore of the De LaSalle Girls Division. Jacintha then conducted an interview with Michelle, the marketing director, of De LaSalle Boys Division. Results from

the interview showed there is a negative connotation of embroidered patches today, since they are something associated in the 80s. High school students today shift their interest to trendier items and devote more time on technology. Although she was not sure about the acceptance level of embroidered patches in De LaSalle students, she was optimistic with direct embroidery of logos or images sewn on polo shirts or sport uniforms. She mentioned that De LaSalle is currently undergoing a new branding campaign, and may be interested in purchasing patches in the future once the marketing campaign is set. Since the De LaSalle Boys Division currently does not have the budget to purchase embroidered patches, my team suggested to change our strategy to offer fundraising events using patches instead. The bookstore of the De LaSalle girls' school was somewhat interested in carrying a few embroidered patches. However, Ms. Ucho's lack of confidence is due to her uncertainty of whether the students would purchase them or not.

Among high schools, the targeted departments were towards sport directors, auto course teachers, business departments, school bookstores, marketing directors, and school club organizers. Jacintha called the general hotline of the Chicago Public School Board, and was transferred to Linda Dantry, who commented that each school has a different culture and therefore have different preferences on what images students associate positively with. She also commented that most schools are interested in having ways to distinguish one school from another. Therefore, school mascot embroidered patches seem accepting among high schools.

Other than local high schools, organizations within IIT have also been considered as possible business opportunities. Emails have been sent to IIT's Union Board president, IIT student activities coordinator, and IPRO 332 - Our Energy Future: Multi-Media Education Modules for the High School Classroom. Among those three targets, we received one response from the team leader of IPRO 332, stating that he had looked at the possibility of buying patches for IPRO day, but are unable to make buying decisions at the moment.

The current results show that high schools are more optimal channels compared to elementary schools. This is due to the fact that high school students fall within the age group that is the most self-expressive. They are old enough to make their own decisions on how they would like to embellish their personal belongings, versus parents who would make those decisions for their children whom are in elementary schools. According to two female high school students, they can relate to items that show identity of a certain group they belong to, such as being a cheerleader, member of Key Club, varsity sports, etc.

From results to date, the main challenge my team now faces are whether to continue pursuing business opportunities of high schools or not. The high schools that showed interest in patches already have current manufacturers that cater a bundling of items. Currently, the Chicago Embroidery Company only has manufacturing plants for patches, and therefore the opportunity of manufacturing other items that schools may consider

valuable are not within the company's feasibility range. At this point, we face the question of whether to target directly to high schools or target to the general high school students.

Pets

We have conducted market research in the pets market to understand if there is a market for patches. We have completed 50 surveys to gauge interest in pet-related patches, what types of patches have the most interest, and what price range people would consider purchasing the patches in. We have also talked
with several pet store managers (both physical and online) to see what they think would sell the best, what price range they would consider selling them at, and what their best-sellers are. Using this market research, we will determine if the pet market is a good one to break into and if so, develop a line of patches to produce. The next step is to analyze the market research.

Scrapbooking

Another one of our focuses on the market side is the scrapbooking industry. We have conducted primary and secondary research. The primary research has included visiting stores such as JoAnn Fabrics, Michaels, Archivers, Target, and Wal-Mart. We have observed that Michaels and Joann's have the most scrapbooking aisles and that it was the busiest section when we visited the stores Sunday between 2:00-3:00 PM. The patches that these two stores did carry were for decorating clothing or other fabrics. The prices ranged from $0.79-$6.00. The other stores that we visited did not carry many patches. The embellishments for scrapbooking, which most closely relate to patches, range in prices from $0.97-$10.00.

We have also conducted primary research in the form of surveys. The surveys have asked the categories that scrapbookers buy the most often, the price range, and where they buy their embellishments, as well as various other questions related to understanding what customers want.

The secondary research that we have conducted revealed that it is a $2.551 billion industry as of 2004. That was a 27.8% increase since 2001. Also, we found that 1 in 4 households in the US scrapbook. The people that scrapbook the most often are females between the age of 30-50. There are different types of scrapbookers: novice, intermediate, and dedicated. They are categorized based on the amount of time they spend scrapbooking, the amount of money they spend on supplies, and what motivated them to begin scrapbooking. Scrapbooking is also the third most popular craft in the nation.

Website

Another area that we have focused much of our research is the company website. After looking at competitor websites and other forms of research we have come up with the following results: the links at the top of the page should be in different order, the contact info should be much clearer and visible at the bottom of the home page, the font definitely needs to be changed, but may be difficult in flash image at the top of the screen. We would like to make the following changes as well, but are not sure if it is possible. The flash image font should be changed and possibly change the layout.

We have also put a lot of our time into researching the effectiveness of the order form. We have concluded that the order form should follow the following format:

Order Form
Customer information
Patch Specifications
- Embroidery Coverage
  - Visual representation
- Size
  - General sizes and shapes
    - Rectangle, Oval, Circle
  - Cut-Out/Custom size and shape
- Backing
  - Type of backing
- Thread Colors/Types
- Mesh Colors/Types

Image Uploading
- Instant visual/sample of artwork as patch
  - Image must be uploaded as a certain file
- Otherwise
  - They send artwork
  - We send digitized sample back to them
  - They can approve it then place order

PRODUCT

RFID

We have conducted research to gain an understanding of the use of RFIDs with patches. RFID systems can be used just about anywhere, from clothing tags to missiles to pet tags to food -- anywhere that a unique identification system is needed. The tag can carry

information as simple as a pet owners name and address or the cleaning instructions on a sweater to as complex as instructions on how to assemble a car. Some auto manufacturers use RFID systems to move cars through an assembly line. At each successive stage of production, the RFID tag tells the computers what the next step of automated assembly is. One of the key differences between RFIDs and bar code technology is RFIDs eliminates the need for line-of-sight reading that bar coding depends on. Also, RFID scanning can be done at greater distances than bar code scanning. High frequency RFID systems (850 MHz to 950 MHz and 2.4 GHz to 2.5 GHz) offer transmission ranges of more than 90 feet, although wavelengths in the 2.4.

One issue we encountered was how to package the RFIDs in the patch to be sure that they would not be destroyed. Our research has found that ultrasonically sealing the RFIDs will prevent this from happening. This method entails taking a tube of flexible material having a top and a bottom end, ultrasonically sealing a bottom band seal across the tube, inserting the contents into the tube, and ultrasonically sealing an upper band seal across the tube at a location spaced away from the bottom end of the tube, with the contents contained between the upper and bottom band seals.

Fluorescent Threads

Another area that we are exploring on the product side is using fluorescent threads in patches. They were originally used for dry hooks in fishing. It is made with multi layered Rayon (about 10 yards). There are currently three different colors.

RFID Dog Tag

We have also conducted research on an RFID dog collar. This RFID Dog Collar Tag works just like one of our long range RFID tags, to actively indicate presence at the R500HA Reader Network. Because of the active nature of this RFID Dog Collar Tag, the RFID reader network can detect the presence or absence of the Dog or other pet. Ultrasonically sealed, this tag is water-resistant, not waterproof.
It is affixed to pet with an industry standard plastic clasp and will have a D Ring suitable for a leash or Pet ID Tag. This product uses HomeSeer software and optional hardware to open Pet Doors, start irrigation to keep pets out of certain areas, or provide audible or text alerts if the pet enters or leaves the range of the reader. The integral battery provides up to five years of continuous use.

RFID Dog Collar - Blue - Fits Most Small to Large Pets $68.95 //EXPENSIVE

The possibilities that we have determined so far are to develop custom embroidery patches (i.e. custom pet picture, name, and symbol) which can easily detach from pets' collar. Attach small RFID reader to patch embedded a patch to dog collar. We have realized that it may be too expensive to pursue this product, however.

RFID Security Patch Tag Design

We have also been researching RFID security patches. We have successfully communicated with one company GAO RFID. We have requested sample requesting form. The sales department has promised to send us a sample of RFID tag, reader, and software for our demo. We have also researched the actual order price and were told that the price is flexible. We have emailed Rob, CEC owner, to ask how feasible to is to attach the RFID to the patch without destroying the RFID.

The possible sample product is shown below with the specs.

UHF 902 MHz. Gen 2 Alien Mini-Squiggle RFID tag Passive
Model: 116008

Type
Contactless Read/Write
Operating Frequency
US (902-928Mhz)
Capacity
96 bit EPC ID
Data Coding Type
EPC Class 1 GEN2
Common Usage
Ideal for item level tagging applications. Near-field and far-field communication modes
Standard Deployment
Retail and supply chain
Multi-Detection
Yes
Max. read quantity
400 tags/sec
Antenna Size
27 mm X 10 mm (1.06 in X .39 in)
Tag Size
54.6 mm X 27 mm X 1 mm (2.15 in X 1.0625 in x .02 in)
Substrate Material
White polypropylene 0.010" both sides, 4 holes .125 in dia
Color
White
Compliance
Aln mini-squiggle Inlay
Regulatory Specifications
ISO18000-6C
Additional Features
Alien Mini-Squiggle 96 bit Gen 2 inlay. Available with offset printing and silk screen with logo, and/or numbering, bar code
Operating Specifications
Waterproof and dustproof
Resistance to immersion in salt water, alcohol, oil, 10%HCL
Ammonia
Shock- Dependant on packaging
Vibration – Dependant on packaging
Humidity – 5 ~ 85 % Relative

Temperature:storage at Storge at -40°C to +85°C, Operating at -25°C to 70°C

UHF GenTop™ Standalone RFID Reader/Writer
Model: 236004

GenTop™ Standalone RFID Reader/Writer

Overview:
The GenTop™ Standalone RFID Reader/Writer designed for the desktop. It communicates through and is powered by a USB connection from your PC or laptop. It supports both EPC Class1 GEN 1 and GEN 2 Protocols operating in the UHF 860-960 MHz band, supporting both North America and the EU. The GenTop™ Standalone RFID Reader/Writer makes it easy for a small to medium size business to handle anything from meeting government mandates to investigating the potential of RFID labeling for the supply chain. Developers will find the GenTop™ Standalone RFID Reader/Writer an excellent tool to aid in testing and validating applications designed for use in RFID enabled environments.

Handling Software

LocateWare™ RFID Locating & Tracking Software
LocateWare™ works with any RFID reader that is either serial connected or on an IP network.

LocateWare™ is ideally suited for:

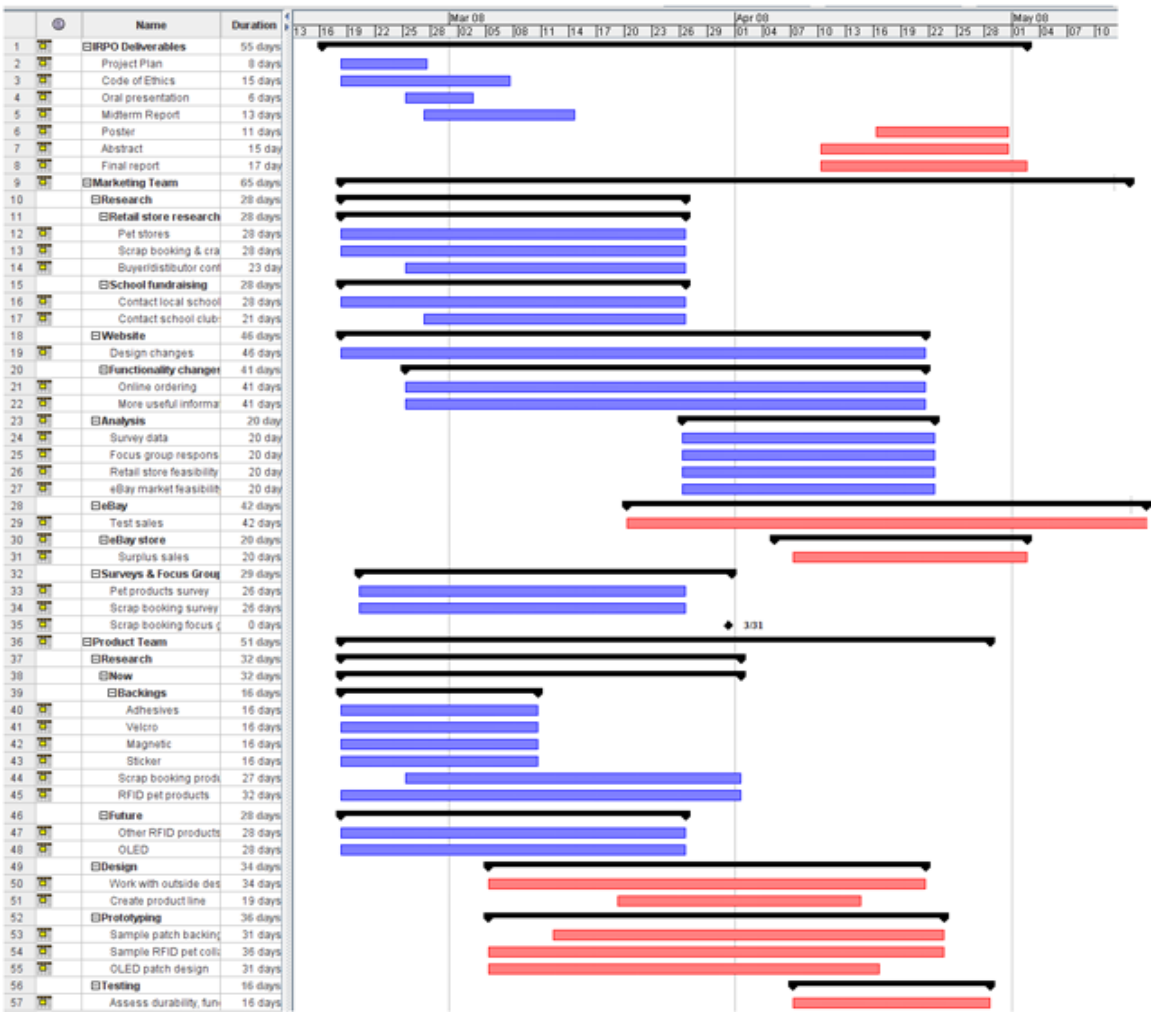
Tracking and Locating People
- Healthcare facilities
- Student tracking in schools and on buses
- Employee and visitor secure access
- Conferences, concerts and events

Tracking and Locating Animals
- Livestock health and identification

3.0 Revised Task / Event Schedule

Setting up and testing eBay sales has been delayed slightly due to delays in getting products inventoried and setting up a bank account. We plan on starting immediately. Similarly, progress towards creating an eBay store has been slowed down a bit. The team has decided not to hold a focus group for pet products, and instead rely on extensive surveying. Research on patch backings went more quickly than was anticipated.

Overall, there has been very little change to our timeline, and work has been keeping on schedule.



4.0 Changes in task assignments

There have not yet been any changes in task assignments. We will not have all of the primary market research completed, compiled, and computed until the week after spring break. Once we have those results, we will use those to decide if we will make any changes and if we do, what those changes may be.

5.0 Barriers and Obstacles

We have encountered some barriers and obstacles. The first was getting in contact with people. From the product side, we had trouble finding people to contact to get samples. We also had trouble from the market side in different ways. It was hard to contact the right people at schools, because we were not positive on whom we should be talking to. Also, we often ended up calling numbers that had recordings and did not lead us to the people we really needed to talk to. To solve this obstacle, we emailed people and discussed the people that we really needed to contact. After these discussions we were able to get in contact with the people that could help us the most. We also had trouble contacting people without it being considered soliciting. To solve this barrier we have researched other methods to survey people and have also asked for permission on websites, instead of going to stores.

The next problem we encountered was in terms of licensing when selling on eBay. When we first decided to sell patches on eBay, the question of licensing came up. We were not sure if we would be allowed to sell any patches that required licenses on eBay. After talking with Rob, the owner of CEC, we were informed that as long as he had the licenses in the past we were able to sell the excess patches that Rob has.

Another obstacle we have experienced has to do with the website. We are trying to figure out a way to digitize from a direct image upload. No one within our company has the experience needed to complete this task and we are not sure if it is possible. We have contacted an outside party and explained what we want to be able to do. We believe that this outside party will be able to solve this problem. We also have struggled with creating a layout for the web order form. To solve this problem we have begun to create a process tree that we are hoping an outside party will be able to put this into reality for us.

We also had trouble structuring our team in the beginning. Only three members have taken an IPRO before, so in the beginning we struggled. We solved this problem by structuring our team in a manner that would best suit the problem at hand. This means we had one team leader with two sub group leaders.

We also anticipate that we will encounter obstacles during the analysis of our market data. We need to understand exactly what potential customers want and we are not sure if we will be able to fully understand this based on the research we have. Also, we are not sure if the market research we conducted will give us a clear picture of the product line that we are hoping to create. To solve these problems, the team hopes to conduct focus groups after the product lines have been produced to get the feedback we need to know if we understand the potential customers' wants and needs.

In terms of the product side of our team, we anticipate having problems obtaining the

necessary technology to create the prototypes we want to produce. To solve this problem the team has decided to have a backup plan of creating a computer generated prototype if the materials can not be obtained.

6.0 Presentation Slides

Reinventing Chicago Embroidery Company: A Living Business Case

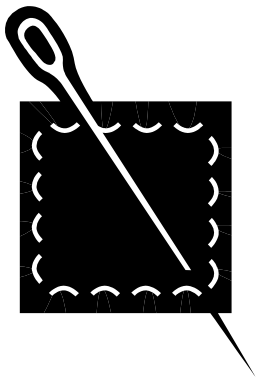
Paul March
Vito Natale
Kara Wilke

Statement of Problem

- A once booming patch business is losing its competitive edge
- Overall market for patches is flat
- Needs to increase sales
- Find new market

Organization of the Team

- Marketing Group
  - Ebay
    - Jessie Correa
  - Schools
    - Jacintha Wong
  - Collectibles
    - Jackie Puschkar
  - Website
    - Kara Wilke
  - Politics and Fashion Accessories
    - John-Paul Roman



Organization of the Team

- Product Research Group
  - Adhesives
    - Tim Nystrand
  - Smart Threads
    - Jung-Jae Kim
  - Alternate/Future Options
    - Vito Natale

Goals of Project

- New website
  - Direct order
  - New Layout
- $5 million / 3 years
  - Expand our markets to retail
  - Create products for promising new markets
- Generate sample product lines
  - RFID
  - Scrapbooking

Progress Toward Goals

- Website layout
  - Analyzed competitor sites
  - Created tentative list of changes needed to be made based on users needs
- Market research
  - Scrapbooking surveys
  - Ebay
- Product research
  - Contacted RFID and OLED suppliers

Major Obstacles Encountered To-Date and Their Resolution

- Getting in contact with people
- Licensing
- Digitizing from direct image upload
- Team Structure
  - Getting up on our feet
- Creating a layout for the web order form
  - Process tree

Anticipated Major Challenges that Lie Ahead

- Analyzing our market data
  - Understanding what our potential consumers want
  - Using that information to create a product line
- Not obtaining the necessary technology
  - OLED/RFID sample