eMotion Midterm Report

I. Mission

eMotion is dedicated to supporting the mental health and well-being of those who are physically apart but emotionally together through the utilization of wireless technology applied to the Best Friends Forever <3 Necklace (BFF <3).

II. Background

a. Opportunity

Best Friends Forever Necklace (BFF) aims to keep tweens in touch, in style, and independent through wirelessly transmitted implicit messages that take on the form of lights and controlled rhythmic vibrations. While physical touch does not play a role in this instance, the opportunity lies in this age group's ability to abstract touch and its connotations. The touch is purely emotion-based, knowing that a close friend is thinking of them while in class for instance, fulfilling the strong human need of belonging and acceptance.

The preteen market targets girls ranging between the ages of 8-14 years old and accounts for roughly $48 billion per year divided amongst the 10.43 million American girls in this age group who have household incomes over $30,000, according to the 2000 United States Census. Additionally, girls this age visit shopping malls 40% more than any other age group, with 80% of tween girls having reported visiting a mall in the past month, according to Family Education, a research group dedicated to family studies.

b. Solutions and Technology

Our necklace will allow users to send a recipient a "buzz" in the form of a controlled vibration in conjunction with flashing LEDs when they are thinking of them. This will be proximity-based as well, telling the user when one of their BFFs is nearby. All this is done in conjunction with the website bfflessthan3.com.

A signal is sent to a friend in the following manner. First, Jessica, a BFF <3 user, pushes one button on the chain of her necklace that is corresponding to her absolute best friend, letting her know that she is being thought of. She then presses the center send button, and both Jessica and her friend's necklace light up and vibrate in the manner of a simulated heartbeat. Later on in the day when Jessica and her BFFs are together, she pushes all six of the buttons on the chain and then the central send button to let all of her friends know that there is a cute guy walking past.

At this website, tween girl users can stay connected with their friends, exchanging the latest gossip, BFF <3 signals, play games, or customize their own BFF <3 casings to keep up with the latest styles. In addition, this site will be linked with other online products that are targeting tween girls, enhancing traffic for all involved in the partnership. In addition, there is a desktop component

With the current solution, emotions can be transmitted between necklaces from as far away as 100 meters, though methods to increase this distance are under investigation. Currently this is achieved using RF Modules with a 2.4 Ghz frequency, though this is likely to change to 900 Mhz because there is much less interference in this range. Additionally, since the transmission is low in data content, this range will allow less power to be used in the actual data transmission, leaving more power to strengthen the signal, increasing the range.

c. Path Ahead

The Spring 2008 semester will focus on further developing business and technical knowledge and implementation. In addition, a series of business plan competitions will be entered to obtain necessary capital to help launch the company and gain valuable feedback. Prototyping, revising, and continual consumer-use feedback through focus groups will ensure that this venture is heading in the right path toward business viability in upcoming semesters. The goal is to have a testable product by IPRO Day.

d. Growing Up with BFF

i. Underlying Concept

The concept of "Growing up with BFF<3" is working toward the idea of a lifetime experience where the necklace form and function evolves with the user's changing needs as she ages. Recognizing that similar communication technology can be applied in various ways, several "steps" are seen in a person's BFF life. To illustrate this point, let's return to Jessica and put her life in fast-forward.

ii. BFF <3 Necklace

Since Jessica will still be a tween girl once the BFF<3 Necklace is released, she and her BFFs will purchase this necklace together and use it for private messages while showing their friendship to all.

iii. BFF Girl's Night Out

Jessica and her friends are now older, going off to college together and they all decide to go out to a club one night. They use BFF Girl's Night Out, a device similar to the BFF<3 Necklace in its transmission of messages, though in this case it uses strictly short-range radio frequency signals to communicate, coupled with the "hot and cold" technology. This technology is based on the concept of the game "hot and cold," where a person's proximity is either "warmer," meaning closer, or "colder," meaning further. This can be displayed by the intensity of the light from the LED or the

colors that appear on the necklace. This technology's use can be illustrated with the following example.

Jessica and her friends want to leave the club, but one of their BFFs has disappeared in the crowd of dancers. They use this device capability to find their friend in a relatively timely manner.

The communication aspect is also a very important element in this product, essentially unchanged from the BFF<3 Necklace, illustrated by the following example.

Jessica is at a club and gets separated from her friends. Meanwhile, a man who makes her feel uncomfortable approaches her. Jessica, without her friends and not wanting to be too rude, is helpless. She presses her BFF Girl's Night Out necklace to summon her friend's help. Using the "hot and cold" technology, they are able to locate her quickly and casually take her back with them, thus avoiding any awkward situation with the man.

iv. BFF Family

Jessica now has settled down with a husband and their three year old daughter. They decide one day to go to the amusement park. While Jessica and her husband are purchasing cotton candy for their daughter, she wanders away. Luckily, Jessica knows she has BFF Family, which uses the "hot and cold" technology seen in BFF Girl's Night Out to locate her missing daughter in a manner that is much faster and simpler than current alternatives. There is also a higher element of safety and timeliness, as well as dignity, compared with child leashes currently on the market or waiting for your missing child to turn up at the security office.

v. Life Buddy

Finally Jessica has approached old age with three grandchildren who live over a thousand miles away. By this time her hearing is not as good as it used to be, so she has trouble understanding what her toddler grandchildren are telling her. To compensate for this, she uses Life Buddy, a device that works in a similar manner to a long-range BFF<3 Necklace, so that she and her grandchildren can communicate over long distances without having to worry about specific words. With this device, the words "I love you," "I'm thinking of you," and "I care" are always understandable. Additionally, even though Jessica's children are far away now, they know she is always safe from harm, because Life Buddy provides contact with emergency services at the push of a button discretely placed on the necklace. This is meant to maintain the user's dignity and provide security.

III. Objectives

a. Business

i. Business Model updates

1. Business plan
2. Distribution model exploration
3. Refinement of target market

4. Product finalization
5. Promotion strategy
6. Revenue model

ii. Market Research
    1. Conduct Focus Group of parents and tweens
    2. Understand purchasing habits and who pays
    3. Expand on secondary research
    4. Determine how parents regulate child's activities

iii. Ethical Considerations
    1. Determine relevant ethical issues
    2. Intellectual property
    3. Determine how ethical implications relate to legal issues

iv. Finances
    1. Research concrete numbers for market, industry, and eMotion venture
    2. Determine conclusive adoption rate based on precedent
    3. Pricing strategy development
    4. Write financial statements

v. Teams work together to develop product

Revisions to Business Objectives

vi. Company Registration
    1. Seek trademark applications for BFF<3, eMotion
    2. Copyright software of all BFF<3 applications
    3. Begin LLC filing in Cook County
    4. Consult with lawyer for other related IP and LLC issues

The changes in the objectives in the business sub-team reflect the realization of all the large, time-consuming components that are involved in protecting intellectual property and becoming a fully-realized company. This is a really important step to protect the work the team has done to date and will continue to perform.

b. Technology

i. Develop necklace prototype
    1. Reduce sizing of necklace prototype
    2. Increase transmission range
    3. Integrate with fashion casing
    4. Integrate rechargeable power source with USB cable

ii. Features
    1. Allow for multi-syncing and receiver control
    2. Develop desktop software integrated with BFF <3 unit
    3. Lightweight and low power usage
    4. Revision to tech issue- Define user-interface with software and hardware

iii. Website
    1. Update website to reflect product modifications
    2. Create full set of templates for game and BFF <3 Necklace casing components

The tech sub-team addition of the objective reflects the team not completely understanding how many logistical issues with the device needed to be worked out before we began the process of creating more sophisticated prototypes. This issue also is auxiliary to the software and hardware development.

IV. Methodology

a. Sub-team Hierarchy (No changes)

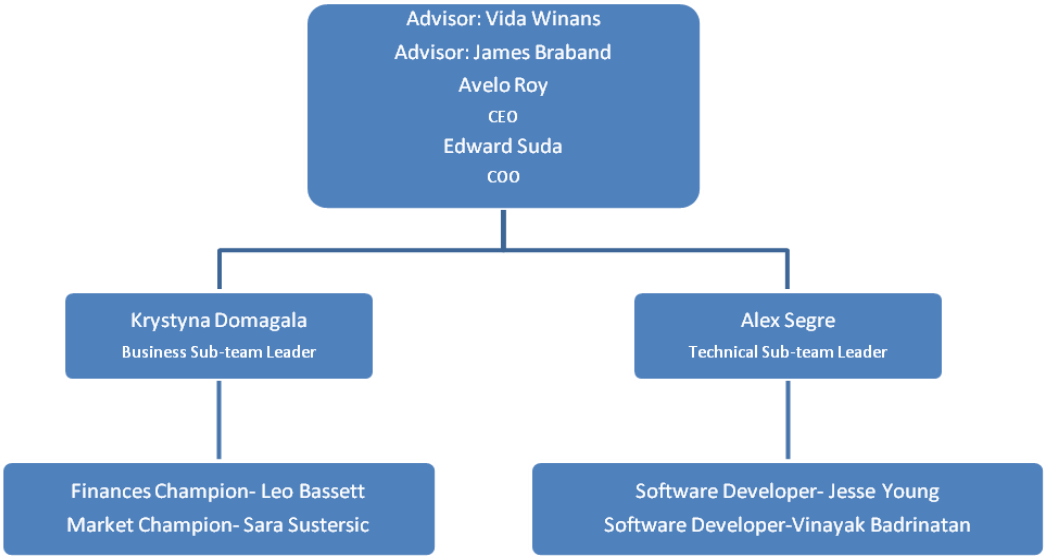
The tasks consist of those aimed at creating and forwarding the eMotion product technology and those aimed at formulating the eMotion business strategy. Consequently, the team of eMotion is divided to two broad sub-teams generally defined as the Business Sub-team and the Technology Sub-team.

The technology tasks are all encompassed by the larger sub-team, but the business team was subdivided due to the diverse issues that must be addressed by this unique approach to emotional connectivity. Each Business Sub-team member chose a specific area to focus their efforts in order for the whole sub-team to move forward together. The established teams are organized as follows:

Each of the teams work closely with each other to ensure that proper communication is facilitated and that there is minimal wasted effort toward an idea that another group might find unreasonable to pursue. Additionally, this close communication facilitates better-quality ideas that work toward creating a successful BFF Necklace.

Sub-team leaders are responsible for managing the progress of their sub-teams. Additionally, the sub-team leaders are responsible for making sure the close, constant communication is ongoing between sub-teams, the team leader, and the

project advisors. If inadequate progress is noted, the entire team works together to create a resolution to the issue.



b. Meeting Times

EnPRO 354 is scheduled to meet every Tuesday and Thursday evening. The schedule was modified after the division into sub-teams, reducing the entire-team meetings to only once a week on Tuesday evenings. The sub-teams are each required to meet at least twice a week, where issues specific to the sub-team are discussed and explored. Members of the sub-teams are strongly encouraged to attend meetings of the sub-team the individual is not officially a part of to keep abreast with current issues and developments.

Entire-team meetings are utilized as a forum for members of the eMotion project to present reports on recent developments and obstacles faced within the sub-team and what it means for the entire group. Solutions are then brainstormed and the process repeats. Additionally, time in class is spent reviewing and revising the set schedule of events to make sure the issues outlined are relevant and realistic based on current progress directions.

V. Schedule of Tasks and Milestones

a. Milestones

i. Business

1. February 6, 2008- Investigate autism options- Completed
2. February 23, 2008 – Parent and tween surveys- Completed
3. March 17, 2008 – Midwest Venture Summit Competition
4. March 25, 2008- Nascent 500 competition finalization
5. April 14, 2008 – Completed revised financials
6. May 2, 2008 – IPRO Day

ii. Technical

1. March 20, 2008– Completion of alpha-quality coding
2. March 25, 2008- Finalize circuit design
3. April 8, 2008- Apply for FCC approval
4. April 10, 2008- Complete fabrication and manufacturing prototype
5. April 23, 2008 – Website integration

b. Schedule of Tasks

A schedule of tasks and goals is created as a set of guidelines for the team to adhere to as closely as possible. This is only preliminary, since all conditions which may arise during the research and development processes cannot be foreseen and accounted for. Individual member assignments are also flexible, as some tasks may be greater or lesser than initially anticipated. The constantly-modified project schedule will be posted on iGroups so everybody is well-informed of where the team needs to be. The Sub-team leaders are responsible for the individual weekly allocation of tasks, while the Team Leader and Internal Coordinator support and guide these tasks.

Currently the business team, as outlined prior, has completed its preliminary investigation into using BFF technologies for assisting children with autism. What eMotion found was that this device would be useful in such a market since this group responds well to a fixed process of inputs and outputs, which can be configured in the inherent design of the user device.

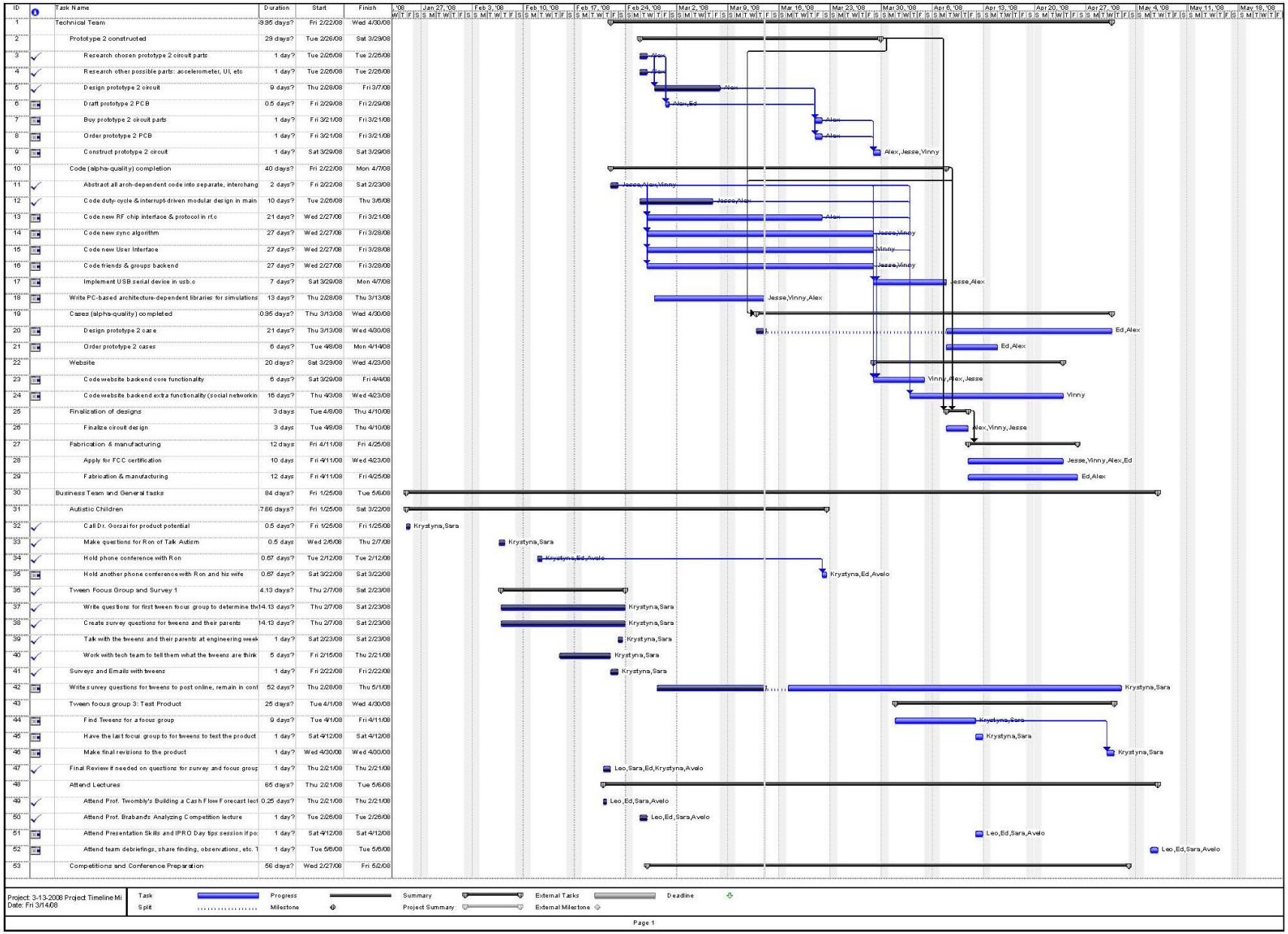
Also, the tween and tween parent surveys were distributed at Engineering Week at IIT Rice Campus to much success. Seventy-six tweens and their parents were surveyed, and we found several interesting results. Not surprisingly, these girls love to customize devices. Going in hand with this, 68% of the respondents said they like to keep up with the latest fashions, which is in line with our BFF<3 customizable casing offering. Also, parents prefer to monitor their child's internet activity, whether it is the parent sitting next to his or her daughter while she is online or simply approving websites in advance.

Business sub-team has also talked with Prof. Stoner about issues regarding forming an LLC, or limited liability company. What we found is that, since it is a somewhat lengthy process to file with the state of Illinois, we should start that as soon as possible. Also, since we have released some of our product and business info, we should move on IP as soon as possible, especially trademarks.

Technical sub-team worked with the business sub-team to finalize the product user interface to completely understand how the components will work together for a finalized integrated design. This is crucial to the miniaturization process that will enable the device to fit in a pendant-size casing.

Also, coding is underway to improve the existing processes of syncing to make it safer for the users and easier to update for future eMotion programmers. Coding is also under way to integrate the USB device with the rest of the device, as well as developing the desktop software.

The project timeline below is completely revised and updated to reflect progress to date.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Feb 3, '08
Feb 10, '08
Feb 17, '08
Feb 24, '08
Mar 2, '08
Mar 9, '08
Mar 16, '08
Mar 23, '08
Mar 30, '08
Apr 6, '08
Apr 13, '08
Apr 20, '08
Apr 27, '08
May 4, '08
May 11, '08
May 18, '08
1 Technical Team 39.95 days? Fri 2/22/08 Wed 4/30/08
2 Prototype 2 constructed 29 days? Tue 2/26/08 Sat 3/29/08
3 Research chosen prototype 2 circuit parts 1 day? Tue 2/26/08 Tue 2/26/08 Alex
4 Research other possible parts: accelerometer, UI, etc 1 day? Tue 2/26/08 Tue 2/26/08 Alex
5 Design prototype 2 circuit 9 days? Thu 2/28/08 Fri 3/7/08 Alex
6 Draft prototype 2 PCB 0.5 days? Fri 2/29/08 Fri 2/29/08 Alex,Ed
7 Buy prototype 2 circuit parts 1 day? Fri 3/21/08 Fri 3/21/08 Alex
8 Order prototype 2 PCB 1 day? Fri 3/21/08 Fri 3/21/08 Alex
9 Construct prototype 2 circuit 1 day? Sat 3/29/08 Sat 3/29/08 Alex,Jesse,Vinny
10 Code (alpha-quality) completion 40 days? Fri 2/22/08 Mon 4/7/08
11 Abstract all arch-dependent code into separate, interchang 2 days? Fri 2/22/08 Sat 2/23/08 Jesse,Alex,Vinny
12 Code duty-cycle & interrupt-driven modular design in main 10 days? Tue 2/26/08 Thu 3/6/08 Jesse,Alex
13 Code new RF chip interface & protocol in rf.c 21 days? Wed 2/27/08 Fri 3/21/08 Alex
14 Code new sync algorithm 27 days? Wed 2/27/08 Fri 3/28/08 Jesse,Vinny
15 Code new User Interface 27 days? Wed 2/27/08 Fri 3/28/08 Vinny
16 Code friends & groups backend 27 days? Wed 2/27/08 Fri 3/28/08 Jesse,Vinny
17 Implement USB serial device in usb.c 7 days? Sat 3/29/08 Mon 4/7/08 Jesse,Alex
18 Write PC-based architecture-dependent libraries for simulations 13 days? Thu 2/28/08 Thu 3/13/08 Jesse,Vinny,Alex
19 Cases (alpha-quality) completed 0.95 days? Thu 3/13/08 Wed 4/30/08
20 Design prototype 2 case 21 days? Thu 3/13/08 Wed 4/30/08 Ed,Alex
21 Order prototype 2 cases 6 days? Tue 4/8/08 Mon 4/14/08 Ed,Alex
22 Website 20 days? Sat 3/29/08 Wed 4/23/08
23 Code website backend core functionality 6 days? Sat 3/29/08 Fri 4/4/08 Vinny,Alex,Jesse
24 Code website backend extra functionality (social networkin 16 days? Thu 4/3/08 Wed 4/23/08 Vinny
25 Finalization of designs 3 days Tue 4/8/08 Thu 4/10/08
26 Finalize circuit design 3 days Tue 4/8/08 Thu 4/10/08 Alex,Vinny,Jesse
27 Fabrication & manufacturing 12 days Fri 4/11/08 Fri 4/25/08
28 Apply for FCC certification 10 days Fri 4/11/08 Wed 4/23/08 Jesse,Vinny,Alex,Ed
29 Fabrication & manufacturing 12 days Fri 4/11/08 Fri 4/25/08 Ed,Alex
30 Business Team and General tasks 84 days? Fri 1/25/08 Tue 5/6/08
31 Autistic Children 7.66 days? Fri 1/25/08 Sat 3/22/08
32 Call Dr. Gorsai for product potential 0.5 days? Fri 1/25/08 Fri 1/25/08 Krystyna,Sara
33 Make questions for Ron of Talk Autism 0.5 days Wed 2/6/08 Thu 2/7/08 Krystyna,Sara
34 Hold phone conference with Ron 0.67 days? Tue 2/12/08 Tue 2/12/08 Krystyna,Ed,Avelo
35 Hold another phone conference with Ron and his wife 0.67 days? Sat 3/22/08 Sat 3/22/08 Krystyna,Ed,Avelo
36 Tween Focus Group and Survey 1 4.13 days? Thu 2/7/08 Sat 2/23/08
37 Write questions for first tween focus group to determine the 14.13 days? Thu 2/7/08 Sat 2/23/08 Krystyna,Sara
38 Create survey questions for tweens and their parents 14.13 days? Thu 2/7/08 Sat 2/23/08 Krystyna,Sara
39 Talk with the tweens and their parents at engineering week 1 day? Sat 2/23/08 Sat 2/23/08 Krystyna,Sara
40 Work with tech team to tell them what the tweens are think 5 days? Fri 2/15/08 Thu 2/21/08 Krystyna,Sara
41 Surveys and Emails with tweens 1 day? Fri 2/22/08 Fri 2/22/08 Krystyna,Sara
42 Write survey questions for tweens to post online, remain in cont 52 days? Thu 2/28/08 Thu 5/1/08 Krystyna,Sara
43 Tween focus group 3: Test Product 25 days? Tue 4/1/08 Wed 4/30/08
44 Find Tweens for a focus group 9 days? Tue 4/1/08 Fri 4/11/08 Krystyna,Sara
45 Have the last focus group to for tweens to test the product 1 day? Sat 4/12/08 Sat 4/12/08 Krystyna,Sara
46 Make final revisions to the product 1 day? Wed 4/30/08 Wed 4/30/08 Krystyna,Sara
47 Final Review if needed on questions for survey and focus group 1 day? Thu 2/21/08 Thu 2/21/08 Leo,Sara,Ed,Krystyna,Avelo
48 Attend Lectures 65 days? Thu 2/21/08 Tue 5/6/08
49 Attend Prof. Twombly's Building a Cash Flow Forecast lect 0.25 days? Thu 2/21/08 Thu 2/21/08 Leo,Ed,Sara,Avelo
50 Attend Prof. Brabandt: Analyzing Competition lecture 1 day? Tue 2/26/08 Tue 2/26/08 Leo,Ed,Sara,Avelo
51 Attend Presentation Skills and IPRO Day tips session if po 1 day? Sat 4/12/08 Sat 4/12/08 Leo,Ed,Sara,Avelo
52 Attend team debriefings, share finding, observations, etc. T 1 day? Tue 5/6/08 Tue 5/6/08 Leo,Ed,Sara,Avelo
53 Competitions and Conference Preparation 56 days? Wed 2/27/08 Fri 5/2/08
Project: 3-13-2008 Project Timeline Mi
Date: Fri 3/14/08
Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline
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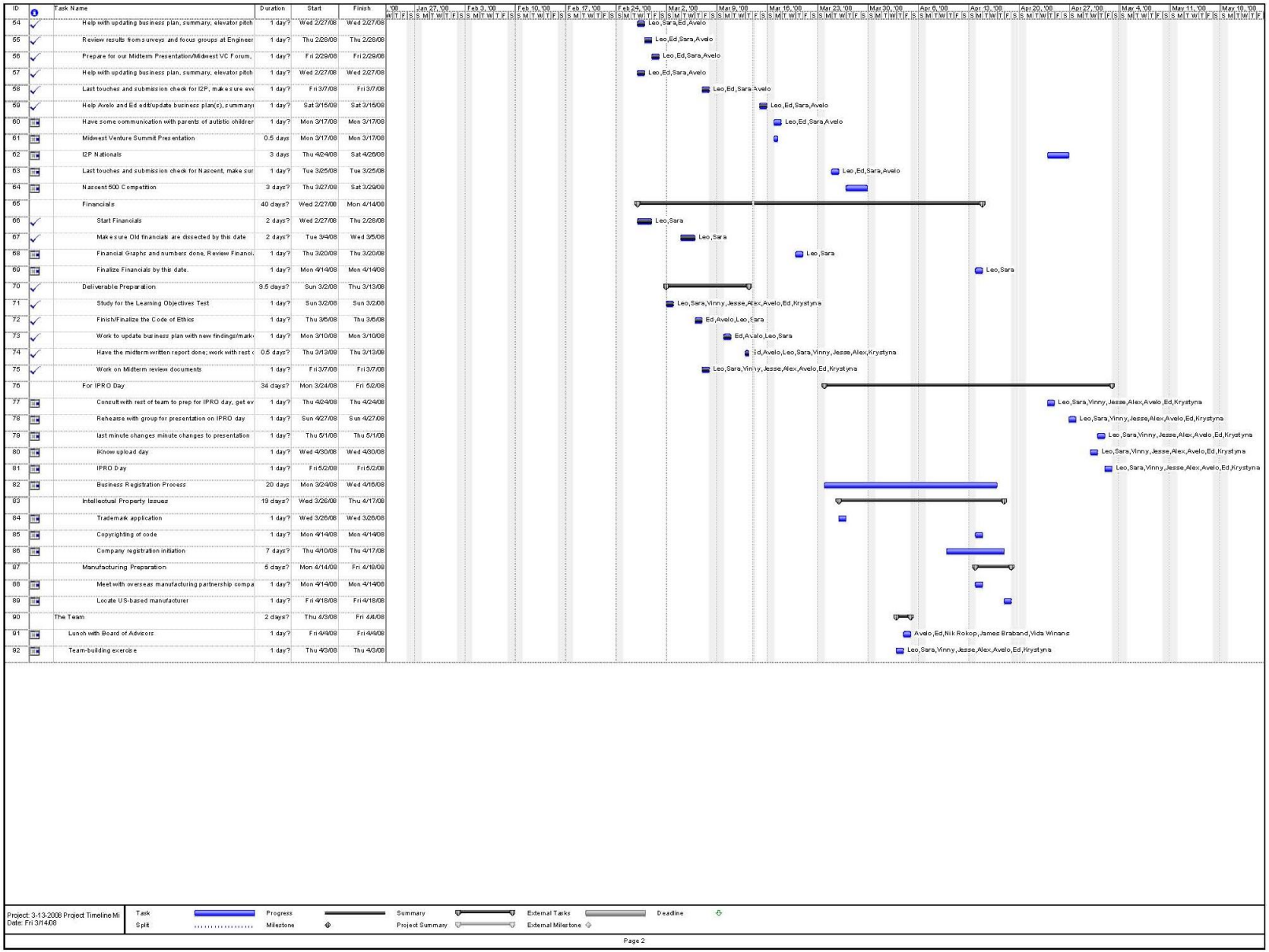
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Mar 30, '08
Apr 6, '08
Apr 13, '08
Apr 20, '08
Apr 27, '08
May 4, '08
May 11, '08
May 18, '08
64 Help with updating business plan, summary, elevator pitch 1 day? Wed 2/27/08 Wed 2/27/08 Leo,Sara,Ed,Avelo
65 Review results from surveys and focus groups at Engineer 1 day? Thu 2/28/08 Thu 2/28/08 Leo,Ed,Sara,Avelo
66 Prepare for our Midterm Presentation/Midwest VC Forum, 1 day? Fri 2/29/08 Fri 2/29/08 Leo,Ed,Sara,Avelo
67 Help with updating business plan, summary, elevator pitch 1 day? Wed 2/27/08 Wed 2/27/08 Leo,Ed,Sara,Avelo
68 Last touches and submission check for I2P, make sure eve 1 day? Fri 3/7/08 Fri 3/7/08 Leo,Ed,Sara,Avelo
69 Help Avelo and Ed edit/update business plan(s), summary 1 day? Sat 3/15/08 Sat 3/15/08 Leo,Ed,Sara,Avelo
70 Have some communication with parents of autistic children 1 day? Mon 3/17/08 Mon 3/17/08 Leo,Ed,Sara,Avelo
71 Midwest Venture Summit Presentation 0.5 days Mon 3/17/08 Mon 3/17/08
72 I2P Nationals 3 days Thu 4/24/08 Sat 4/26/08
73 Last touches and submission check for Nascent, make sur 1 day? Tue 3/25/08 Tue 3/25/08 Leo,Ed,Sara,Avelo
74 Nascent 500 Competition 3 days? Thu 3/27/08 Sat 3/29/08
75 Financials 40 days? Wed 2/27/08 Mon 4/14/08
76 Start Financials 2 days? Wed 2/27/08 Thu 2/28/08 Leo,Sara
77 Make sure Old financials are dissected by this date 2 days? Tue 3/4/08 Wed 3/5/08 Leo,Sara
78 Financial Graphs and numbers done, Review Financi 1 day? Thu 3/20/08 Thu 3/20/08 Leo,Sara
79 Finalize Financials by this date. 1 day? Mon 4/14/08 Mon 4/14/08 Leo,Sara
80 Deliverable Preparation 9.5 days? Sun 3/2/08 Thu 3/13/08
81 Study for the Learning Objectives Test 1 day? Sun 3/2/08 Sun 3/2/08 Leo,Sara,Vinny,Jesse,Alex,Avelo,Ed,Krystyna
82 Finish/Finalize the Code of Ethics 1 day? Thu 3/6/08 Thu 3/6/08 Ed,Avelo,Leo,Sara
83 Work to update business plan with new findings/mark 1 day? Mon 3/10/08 Mon 3/10/08 Ed,Avelo,Leo,Sara
84 Have the midterm written report done; work with rest 0.5 days? Thu 3/13/08 Thu 3/13/08 Ed,Avelo,Leo,Sara,Vinny,Jesse,Alex,Krystyna
85 Work on Midterm review documents 1 day? Fri 3/7/08 Fri 3/7/08 Leo,Sara,Vinny,Jesse,Alex,Avelo,Ed,Krystyna
86 For IPRO Day 34 days? Mon 3/24/08 Fri 5/2/08
87 Consult with rest of team to prep for IPRO day, get ev 1 day? Thu 4/24/08 Thu 4/24/08 Leo,Sara,Vinny,Jesse,Alex,Avelo,Ed,Krystyna
88 Rehearse with group for presentation on IPRO day 1 day? Sun 4/27/08 Sun 4/27/08 Leo,Sara,Vinny,Jesse,Alex,Avelo,Ed,Krystyna
89 last minute changes minute changes to presentation 1 day? Thu 5/1/08 Thu 5/1/08 Leo,Sara,Vinny,Jesse,Alex,Avelo,Ed,Krystyna
90 iKnow upload day 1 day? Wed 4/30/08 Wed 4/30/08 Leo,Sara,Vinny,Jesse,Alex,Avelo,Ed,Krystyna
91 IPRO Day 1 day? Fri 5/2/08 Fri 5/2/08 Leo,Sara,Vinny,Jesse,Alex,Avelo,Ed,Krystyna
92 Business Registration Process 20 days Mon 3/24/08 Wed 4/16/08
93 Intellectual Property Issues 19 days? Wed 3/26/08 Thu 4/17/08
94 Trademark application 1 day? Wed 3/26/08 Wed 3/26/08
95 Copyrighting of code 1 day? Mon 4/14/08 Mon 4/14/08
96 Company registration initiation 7 days? Thu 4/10/08 Thu 4/17/08
97 Manufacturing Preparation 5 days? Mon 4/14/08 Fri 4/18/08
98 Meet with overseas manufacturing partnership compa 1 day? Mon 4/14/08 Mon 4/14/08
99 Locate US-based manufacturer 1 day? Fri 4/18/08 Fri 4/18/08
90 The Team 2 days? Thu 4/3/08 Fri 4/4/08
91 Lunch with Board of Advisors 1 day? Fri 4/4/08 Fri 4/4/08 Avelo,Ed,Nik Rokop,James Braband,Vida Winans
92 Team-building exercise 1 day? Thu 4/3/08 Thu 4/3/08 Leo,Sara,Vinny,Jesse,Alex,Avelo,Ed,Krystyna
Project: 3-13-2008 Project Timeline Mi
Date: Fri 3/14/08
Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

The only changes made to the project timeline at this point are the addition of the business-formation related tasks, which are based on commencement after Spring Break. Also, there was some delay implemented to the tech sub-team timeline in regards to software implementation and development of the commercial-ready prototype due to unanticipated planning required to achieve this level of development.

VI. Project Budget

The budget at this time reflects the costs of producing BFF Necklaces utilizing various prices based on the quantity of material purchased. Also, the actual is outlined for the creation of four prototype necklace units.

eMotion Spring 2008 Budget				
Prototyping				
Item	Reason	Quantity	Unit Cost	Total Cost
Piezoelectric Motor	Vibration in prototype	2	$ 3.00	$ 6.00
Breadboard	Developing circuitry phase 1	2	$ 8.00	$ 16.00
Circuit Board	Developing circuitry phase 2	2	$ 6.00	$ 12.00
Microcontroller chips	Allows for unit communication	4	$ 10.00	$ 40.00
Cell phone vibrator	Vibration in prototype	4	$ 3.00	$ 12.00
LED	Lighting in prototype	6	$ 2.00	$ 12.00
Rapid Prototyping costs	Rapid prototyper	6	$ 8.00	$ 48.00
Casing Material Studies	To integrate casing and hardware	6	$ 10.00	$ 60.00
Push buttons	Allow for multi-functionality of unit	20	$ 0.32	$ 6.40
RF Transceiver module	Allow for short-range necklace communication	4	$ 13.00	$ 52.00
Subtotal requested				$ 264.40
Business Development				
Item	Reason	Quantity	Unit Cost	Total Cost
Business Cards	Promote eMotion and establish network	20	$ 0.80	$ 16.00
Business Plan Printing	For IPRO Day display table	2	$ 30.00	$ 60.00
Team Development	Enhanced team unity through retreat	1	$ 50.00	$ 50.00
Focus Groups	Compensation for providing market insight	2	$30	$ 60.00
Subtotal requested				$ 186.00
Total requested				**$ 450.40**

The budget was slightly modified from the Project Plan due to the costs involved in conducting the focus groups to garner primary market research and further refine the product aspects.

VII. Expected Results (No changes)

a. Business

i. Objective – Refine target market and identify first customer
Results –
Research through primary and secondary sources result in developing the BFF Necklace in a manner that does not explicitly replicate touch but implies the thought of the interpersonal connection.

ii. Objective – Business Plan Competitions
Results –
Gain feedback on improving the project from diverse sources and experienced entrepreneurs to solidify the project and gain insight into the target market and launching process.

iii. Objective – Update financial statement
Results –
Create an accurate financial statement which will assist in securing future funding for the venture and impact planning on the pricing and marketing strategy.

iv. Objective – Focus groups
Results –
The focus groups are a crucial element to tailoring the product to customer needs, as well as gaining insight into how parents and children influence each other's buying decisions.

b. Technical

i. Objective - Develop a necklace prototype
Results –
Create a lightweight necklace with minimal power consumption that has wireless capability, and a multicolor light with a force sensation. Integrate with the replaceable casings.

ii. Objective - Final, production ready necklace implementation
Results -
Minimize cost, size, weight, power consumption on original prototype. Develop a printed circuit board to compact existing components.

iii. Objective - Develop website and desktop software
Results -
The website and desktop software provide the necessary support for the BFF <3 Necklace an interactive website that enhances the user experience and extends the lifespan of the product. It also supports a recurring revenue stream and provides

barriers to entry through the sophisticated user interface.

VIII. Barriers and Obstacles

a. A primary obstacle has been determining the user interface with the actual BFF hardware unit, determining the location and number of buttons, determining the number and location of LEDs, and the method of attaching replaceable casings.
    i. First, members Krystyna and Ed each wrote detailed product descriptions outlining the product vision. The tech and business sub-teams would then review and comment on these documents. This served as an initial means of working out all the issues that must be addressed.
    ii. This obstacle was overcome then discussing these issues as a team and leading brainstorming sessions to discuss possible means of addressing these components. Members of the team were encouraged to express their thoughts and rationale behind them, as well as illustrate on the white board to display the concepts at work.
    iii. Following this, the sub-teams then discussed what seemed the most feasible, economical, and user-friendly as a solution.
    iv. The solution for the casings is still under way, though it has been narrowed down to two possible solutions: one based on cellular phone face plates, and the other on using the USB plug as the hook for the casings.
b. Another obstacle is determining the user interface of the desktop software.
    i. Because of the relative immaturity of this aspect, it is slowly evolving with the BFF<3 Necklace, as well as being continuously worked upon. Currently a focus group is being planned that aims to address both tween girl and parent needs in this product to ensure safety and user-friendliness.
c. eMotion lost a member of its team a quarter-way through the semester due to his excessive workload.
    i. This obstacle was difficult for the team, as he was a respected new member to the team. It was overcome by the team acknowledging the loss during a meeting and the tech sub-team leader reassigning the tasks to the remaining members to compensate for the loss. So far this loss has not hurt progress significantly, as the tech sub-team delays are attributed to unforeseen components and issues that had to be worked out prior to established milestones being met.
d. The most significant future obstacles deal with making the transition between an academic project and a real-world business.
    i. We first aim to overcome this issue by recruiting a seasoned entrepreneur to assist in the development of eMotion so that it may avoid the pitfalls first-time start-ups can usually face. We aim to work with the Knapp Center.
    ii. Intellectual Property protection is also key to this transition to commercial success, since protecting the concept and application of it is vital given the relatively low-tech approach to solving the problems of the tween girl market, especially since eMotion is now involved in numerous competitions.

iii. Obtaining start-up funds is also an obstacle that currently faces this team, though it can be overcome through funds acquired through these competitions, as well as investment from friends, family, and fools.

IX. Team Member Roles (No changes)

a. Avelo Roy (Team Leader)
   i. Major: Computer Engineering
   ii. Certificate in Leadership studies
   iii. Year: 3rd
   iv. Skills related to eMotion
      1. 1 semester eMotion experience as Team Leader
      2. Extensive experience in leadership and team management
      3. Experience with circuit analysis and circuit design
      4. Microsoft Office – Word, Excel, PowerPoint, Project, Access, Visio, FrontPage
   v. Activities
      1. Chief Justice, Judicial Board
      2. Member – Campus Judicial Board
      3. President – Vedic Vision Society
      4. Member- IEA Council

b. Edward Suda (Internal Coordinator, Product Design, Minute-taker)
   i. Major: Architecture
   ii. Minors: Architectural Engineering, Entrepreneurship
   iii. Year: 4th
   iv. Skills related to eMotion
      1. 1 semester eMotion experience as Internal Coordinator
      2. Extensive leadership and managerial skills
      3. Microsoft Office – Word, Excel, PowerPoint, Project
      4. Knowledge of metal and woodshop machinery
   v. Activities
      1. Vice-President – Residence Hall Association
      2. Member – IEA Council
      3. Resident Advisor
      4. Administrative Justice- Judicial Board

c. Alessandro Segre (Technical Sub-team Leader, Hardware developer)
   i. Major: Computer Engineering
   ii. Year: 3rd
   iii. Skills related to eMotion
      1. Electrical and Electronic:
         a. Basic electronic digital systems design and implementation
         b. Moderate electronic knowledge and experience
         c. Basic low-power electrical power-systems knowledge and experience

            d. Extensive non-SMD soldering & circuit assembly experience
            e. Basic surface mount (SMD) PCB soldering
        2. Mechanical
            a. Design and implementation of precise mechanical systems for optical use via computer aided drafting (CAD) software
            b. Precision operation of metal and wood shop machinery for the creation and modification of standard and custom designed components

d. Jesse Young (Software developer)
    i. Major: Computer Science
    ii. Year: 2nd
    iii. Skills related to eMotion
        1. Software design experience
        2. Hardware development experience
        3. Robotics
    iv. Activities
        1. Secretary – Robotics Club of IIT
        2. Member – Association for Computer Machinery

e. Vinayak Badrinathan (Software developer, iGroups file organizer)
    i. Major: Computer Science
    ii. Minor: Entrepreneurship
    iii. Year: 3rd
    iv. Skills related to eMotion
        1. 1 semester eMotion experience
        2. Programming
        3. Kaplan Fellow
    v. Activities
        1. President – Association for Computer Machinery

f. Krystyna Domagala (Business sub-team leader)
    i. Major: Psychology
    ii. Minor: Biology
    iii. Year: 2nd
    iv. Skills related to eMotion
        1. 1 semester eMotion experience
        2. Psychological knowledge
        3. Conducting focus groups
        4. Researching abilities
    v. Activities
        1. Member – Illinois Institute Tea Club (IITea)

g. Leo Bassett (Finance Champion)
    i. Major: Finance

ii. Minor: Industrial Psychology
iii. Year: 3rd
iv. Skills related to eMotion
    1. B2B sales and marketing experience
    2. Experience with fund valuation
    3. Experience with quality assurance
    4. Extensive leadership experience

h. Sara Sustersic (Market Champion)
    i. Major: Marketing & Finance
    ii. Year: 3rd
    iii. Skills related to eMotion
        1. Knowledge of consumer behavior
        2. Knowledge of market research methods
        3. Knowledge of cash flow analysis
    iv. Activities
        1. Leadership Academy Scholar
        2. Member of SOAR
        3. Member of Kappa Phi Delta Sorority