EMPATHY TOTMES
human communication sculptures

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This thesis is submitted in partial fulfillment of the requirements for the degree of Master of Science in Interactive Design & Media.

School of Design and Engineering, Philadelphia University

May 2014

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Halsted Larsson, Thesis Advisor
Assistant Professor of Design
School of Design and Engineering, Philadelphia University

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Person Two, A Title
Designer at bla bla bla
Place of work

....

Person Three, A Title
Maker at bla bla bla
Place of work

ABSTRACT

Empathy Totems are data sculptures that visually represent personal information to be used as a non-verbal communication tool. These objects are part of a study that explores how to understand and communicate information by conveying data through physical objects. The Empathy Totems will enable people to gain a better understanding of their own emotions while expressing them in a physical environment.

The totem structures combine data-feeds of mood, physical activity, and geo-location gathered form the user. This project investigates how people can gain a better understanding of human emotions by interacting with data systems as part of their environment. The system establishes a framework to transform personal data into physical structures.

CONTENTS

INTRODUCTION

INTRODUCTION

In everyday life we receive and emit information rooted to our internal emotional network. Often times our expression of these subconscious emotions is abstract, and has little or no value when trying to remediate heated relationship arguments.

It is only after we have a deep understanding of our own emotions that we can reach a certain level of empathy. Empathy is seeing the world through other people's eyes. This is an important step in the path of accomplishing long-lasting human relationships.

RELATED PRIOR WORK

RELATED PRIOR WORK

Quantified-Self

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Life-Logging

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Generative Systems

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Digital Fabrication

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Information Visualization

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PRODUCT

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The purpose of the Empathy Totem system is to collect, track and display emotion data. The mission of the Empathy Totem system is to enable people to understand, share, and increase their level of empathy to one another. This is achieved within the system's feedback loop below.

Empathy Totem system feedback loop:

1. Self-actualization of current emotional climate
2. Understanding and communication of our own emotional stream
3. Recognition of external emotions experienced by others around us
4. Relate ourselves to the feelings of others and provide compassion

Features

The Empathy Totem systems consists of two parts: 1) a mobile application for data entry, and 2) a physical structure hosting a multi-color LED as the system's output.

The data is entered through a web-based mobile application representing the nine different emotional zones based on Mihaly Csikszentmihalyi research on 'flow.' This data is interpreted by a ratio correlating challenge degree to skill level. The system output consists of a mystical totem serving as a visual representation of a person's empathy rate. The colors correlate to Csikszentmihalyi's research diagram below.

The data received and interpreted by an Arduino micro-controller located inside the totem. The data is represented by an LED that constantly fluctuates through multiple color patters correlated to the user's historical and current emotion data. This enables people to increase their emotional awareness level while communicating it across. The totem's physical structure acts as an omnipresent reminder of a person's emotional climate.

Components

Hardware
- 1 Arduino micro-controller
- Wires
- 1 Breadboard
- 1 RGB LED
- 3 Resistors

Software
- Arduino
- Processing
- LAMP stack server

Functions
- Input emotion data from a mobile device
- Store emotion entries for further analysis
- Send emotion data to an Arduino microcontroller
- Receive emotion data from server
- Interpret emotion data and convert to empathy rate
- Represent empathy rate by using color, form, shape, and texture

Diagrams

Data Flow

Emotion > Emotion Rate > Empathy Rate > Empathy Glow Application

Application Stack

Linux > Apache > MySQL > PHP > Application

Network Topology

Application > Web Server > Processing > Arduino

Roadmap

The implementation roadmap consists of a schedule of 20 weeks divded in four phases (research, design, build, and test). The project is due to be complemented on May 8th, with a starting date of January 1st, 2014.

Each phase consists of a set of project milestones along with the corresponding tasks. This list is being logged in a task list (_ref_) and it is visually represented with a Gantt chart (_ref_).

Needs & Opportunities

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Business Goals

"Depression affects about 121 million people worldwide, with many more going undiagnosed, and is the leading cause of disability. Anxiety disorders touch 16% of people globally at some point in their lives." [Ashford]

By utilizing the tools available to us in this modern world we can create means of tracking, understanding, and expressing ourselves more effectively. People who live with Bipolar Disorder use mood tracking methodologies to understand, mitigate, and decrease their mood swings.

The increased presence of mood tracking applications and physical devices such as Withings' body scale, Nike's fuel band, and Fitbit's step-tracker, is an indication of how the market for connected objects is unfolding.

SWOT Analysis

Personas

Three main design personas have been identified in order to provide user-centric direction during the design process. These fictitious characters will also be used as a guide to identify people that can act as real users in order to perform testing and further project research. Their names are Tanya, Melissa, and Javier. (+ add demographics)

ya

Grade school teacher. Resourceful, social, caring, smart.

pose

Illustrate how the simple and gradual struggles for couples can take a toll on their loving relationships. What if that gap can be sealed by providing better means of sharing each other's emotional streams. Acknowledge each other emotions, have empathy, and reciprocate accordingly.

ironment

School. Kindergarten. Classroom. Married. Grade school teacher goes to work in the morning. Married to a husband that works from home.

Story   The couple's relationship at home has been rocky. Tanya has her struggles
                     at work, while her husband has his working from home. When the couple
                     reunites at home after a journey's hard work their interactions are often a
                     hit or miss.

                     There is a mismatch of his and hers good and bad days. Teaching little
                     kids all day can be a hectic task for anybody. Tanya often times goes home
                     stressed out and frustrated.

Resolution   Being able to communicate their stream of feelings through their
                     devices and the objects around their environment. The couple has now
                     being able to decipher the pattern to a successful relationship based on
                     communication.

Lissa

Art student. Social, creative, mobile. Shy, not talkative but likes action.

Purpose   Demonstrate how dynamic the communication through the system flow can
                 be from data input, information representation, and sharing capabilities.

Environment   College. Movie theater. 'Hanging-out' areas.

Story   Melissa is able to communicate with her friends, family, and doctor. She is able to choose what emotion, and to whom and when to share them. She also has the choice to keep them to herself privately.

When Melissa was diagnosed with a bipolar mood disorder her doctors suggested to keep a log of her emotions as part of her treatment.
This would allow them to help her understand her mood swings and communicate her emotions with the ones around her better.

Resolution   Melissa can easily share and keep track of her emotions through an application. This log-keeping technique has shown to reduce friction among family and friends of bi-polar disorder patients.

Software Developer. Smart, problem-solver, tech-oriented. Introverted, cool and reserved.

Purpose

Display the struggle of every-day people when trying to focus and communicate in a working environment. People surrounded by distractions and poor means of non-verbal communication are a cause of friction for the every-day working Joe.

Environment

Office. Cubicles. Meeting rooms.

Story

Javier is involved in his every-day routine. Everything looks like any other day. Constant interruptions. Lack of focus. Increasing stress levels.

As the high stress levels are about to overcome the protagonist, he finds a solution to his every-day problems. A device that will allow him to visually display his current emotional state communicating it to the ones near him. Allowing him to broadcast a 'free-to-chat' or a 'do-not-disturb' signal.

Resolution

As Javiers adopts the Empathy Totems system for the office, a more productive, happier working environment is a common situation for him.

BRANDING

BRANDING

The overall look and feel is organic yet technologically influenced. Polygons, low-poly aesthetic, crystallized objects, and minerals are good examples of the influences behind the brand's design decisions.

Logo

The logo consists of a line drawing representing the totem's pyramid-like structure. This shape is pointing upwards implying a self-help motto influenced by the life-logging, quantified-self culture behind the project.

Branding elements will be generated with computer code. This generative approach will allow for more organic and personal content.
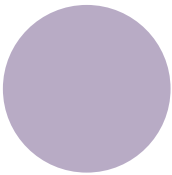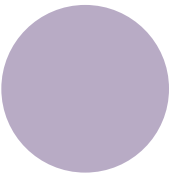
Typography

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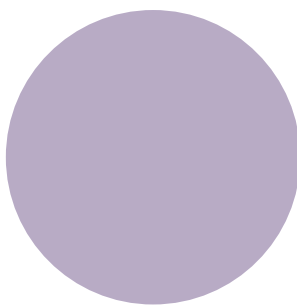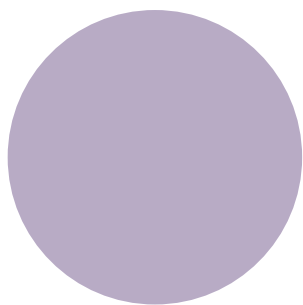Oremporum sequatur? Qui odia dolupti cuptius, consequae.

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Colors

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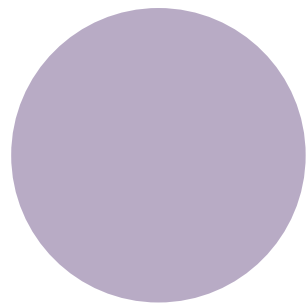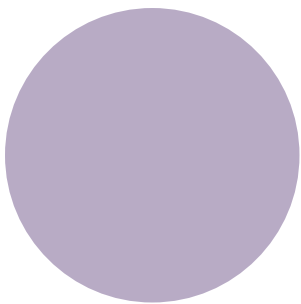Oremporum sequatur? Qui odia dolupti cuptius, consequae.

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PROCESS

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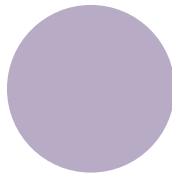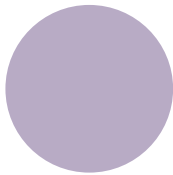
OUTCOME

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BIBLIOGRAPHY

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APPENDIX I
USER INTERFACE (UI) WIREFRAMES

APPENDIX II
ENTITY RELATIONSHIP DIAGRAM (ERD)

APPENDIX III
PROJECT IMPLEMENTATION GANTT CHART

APPENDIX IV
TASK LIST