

b + positive

TABLE OF CONTENTS

INTRODUCTION

PRODUCT CONCEPT

final product renderings	9
design language	10
product aesthetic benchmarking	11
human interaction	12
user experience storyboard	13
exploded view	15
ecodesign strategies	17
application of biomimicry	18

BRAND IDENTITY DESIGN

21	design language
22	brand benchmarking
25	brand standards guide
33	visualization of critical media options
35	implementation timeline
37	brand identity
38	application of biomimicry

ENGINEERING

photographs of prototype	41
target technical specifications	42
final product architecture	43
ecological impact factor assessment	47
enhanced bill of materials	49
engineering cost estimation	51
reasonable & justifiable social & environmental claims	54
manufacturing documentation	55
application of biomimicry	56

BUSINESS PLAN

59	external environment
61	internal environment
64	market opportunity analysis
65	strategies & tactics
70	financial plan, preliminary financials
73	consumer behavior model
74	application of biomimicry

the b+positive team was organized in order to create a solution to a major problem concerning emergency response. through research, expert interviews, citizen observation programs, and brainstorming sessions, we have gathered useful insights about everyday problems facing EMTs and paramedics. today, with increasing reliability on technology, it is crucial that EMTs, paramedics, physicians, and the general public be equipped with tools that reduce uncertainties in emergency situations.

with the development OUTRO we hope to create building standards which incorporate innovative emergency tools and procedures so that the public can have peace of mind when they are in a confined environment. our goal with this product is to redesign emergency standards in existing buildings and provide new approaches to building development.

ENGINEER



**ARNE
BECH**

INDUSTRIAL



**CAMERON
MAGNESS**

BUSINESS



**JOSH
BROX**

BUSINESS



**SARAH
BENBEROU**

GRAPHIC



**KRISTA
WILLMAN**

b+positive was assigned to have the flexible display center (FDC) at Arizona State University (ASU) as its sponsor. The FDC is a university, industry, government collaborative venture designed to advance full color flexible display technology and flexible display manufacturing to the brink of commercialization. The principal goal of the FDC is to develop high performance, commercially-viable, conformal and flexible displays that are lightweight, rugged, low power, and low cost.

E

1

INK

2

PAPER

3

DISPLAY

4

ENABLING

5

6

LOGY

RETIRED TEACHER

CAROL
JENKINS

problem : has had past heart problems and worries something could happen to her outside the hospital

solution : having the OUTRO system is a reliable way of knowing you immediate communication with a first responder

BUSINESS OWNER

BILL
PETERSON

problem : ever since 9/11 he has worried about the safety of his workers

solution : OUTRO could be pulled in any emergency situation and the flexible display can be taken as a communication device

PARAMEDIC

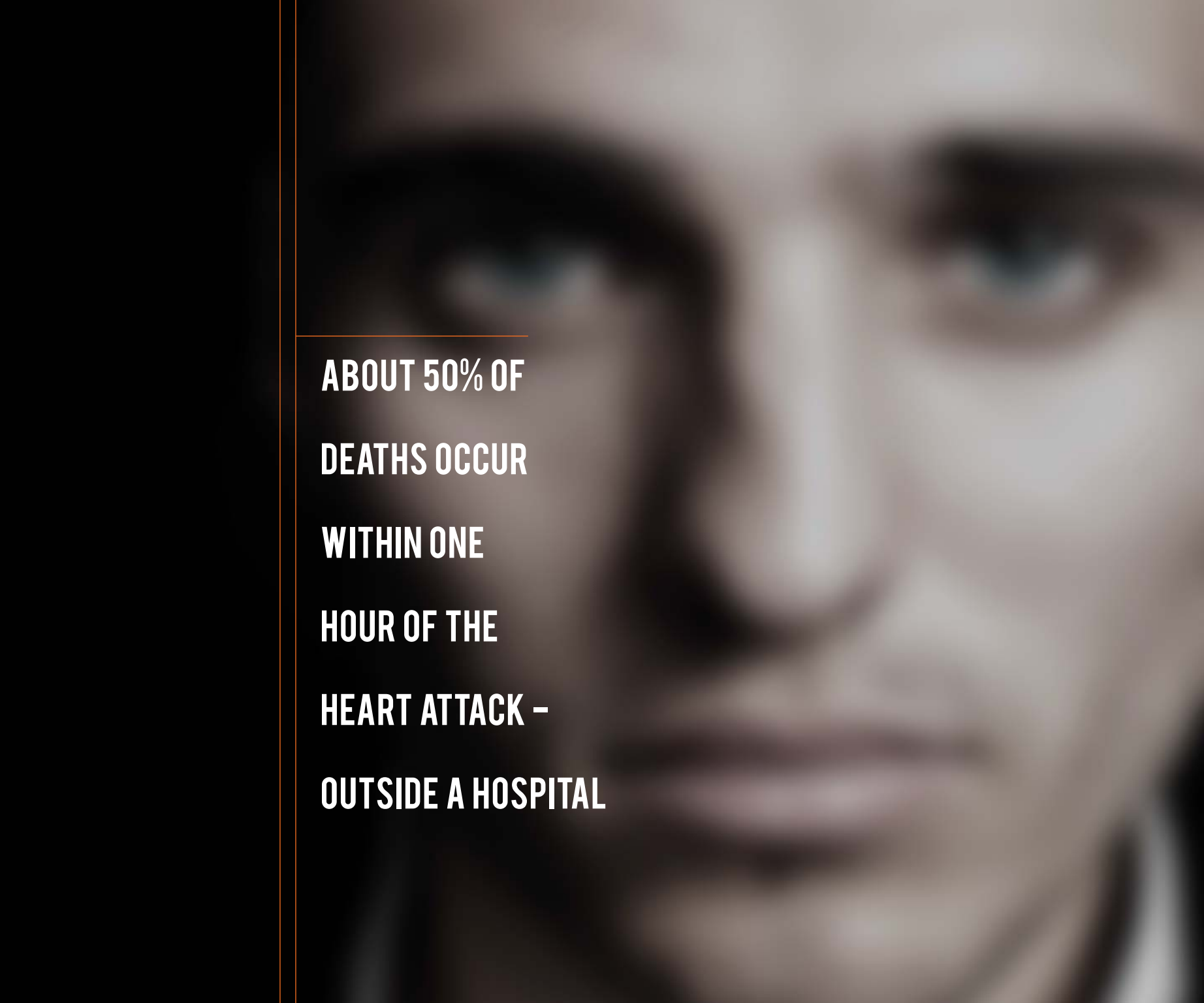
MARY
PARKER

problem : wishes there was a way to know what is taking place at the scene to better prepare herself, since usually the caller is panicked

solution: with OUTRO's live video feed a paramedic can get a feel for the situation before they arrive

the OUTRO system is a multi-use solution for emergency situations that may arise in public and private buildings. incorporating the highly acclaimed flexible display technology, OUTRO is designed to be strategically placed in rooms throughout a building. when an emergency situation arises, pulling out the OUTRO system's alarm lever triggers direct connection with an emergency dispatcher and immediate secondary connection with a first responder team. with immediate connection with a first responder team, the person is able to communicate verbally and nonverbally with EMTs and paramedics in real-time before their arrival at the scene.





**ABOUT 50% OF
DEATHS OCCUR
WITHIN ONE
HOUR OF THE
HEART ATTACK –
OUTSIDE A HOSPITAL**

PRODUCT CONCEPT

final product renderings 

design language 

product aesthetic benchmarking 

human interaction 

user experience storyboard 

exploded view 

ecodesign strategies 

application of biomimicry 

OUTRO

the final design consists of an integration of the emergency display system and a fire alarm. bringing together these two functions into one device localizes an advanced emergency system that enhances communication between emergency services and people in need. the aesthetics have been aimed to blend contemporary style with functional design. this brings a refreshing modern look to a function driven safety product.



CONTEMPORARY PROGRESSIVE

contemporary progressive describes a clean and modern image to design. smooth and flawless forms portray a feeling of ease towards high quality and precision.

MODERN



CLEAN SURFACES



DEFINED CURVES



GEOMETRIC PRECISION



clean, simple

functional

functional, simple

attention getting, rugged

functional

geometric

geometric

clean, simple

gentle curves, smooth

rectilinear

plastic

plastic

plastic

plastic, rubberized

plastic

neutral, highlight colors

neutral

white

bright, high contrast

neutral

single button function,
docking station

single button function,
user worn pendant

multiple emergency
contacts

younger demographic,
GPS location

home security &
support

guardian alert 911
logiMark, LLC

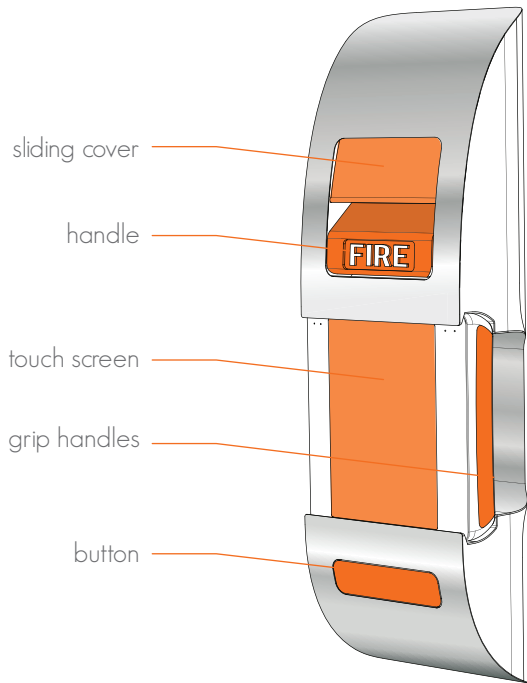
life alert pendant
life alert

personal emergency
reporting system
linear LLC

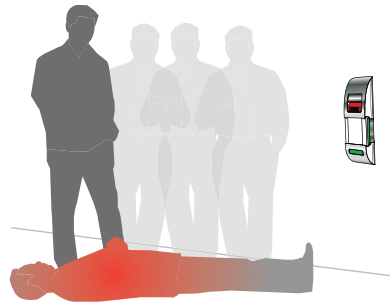
spot satellite
messenger
spot inc.

ADT monitoring
ADT

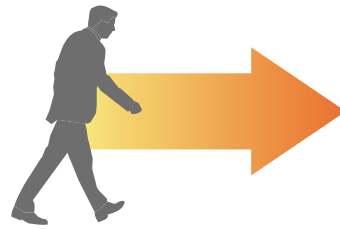




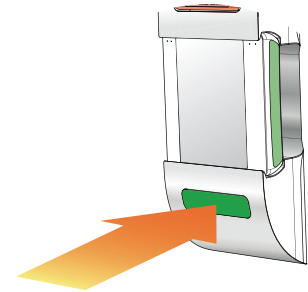
PRE-OPERATIONAL	installation	mounted to wall connect power source connect to base station
OPERATIONAL	fire alarm	lift protective cover
	emergency display	push button slide out display touch screen interactive interface
PRE-OPERATIONAL	fire alarm	alarm reset
	emergency display	display placed back into station display resets and updates
	maintenance	checked by fire inspection



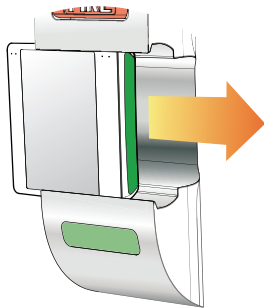
1:PROBLEM



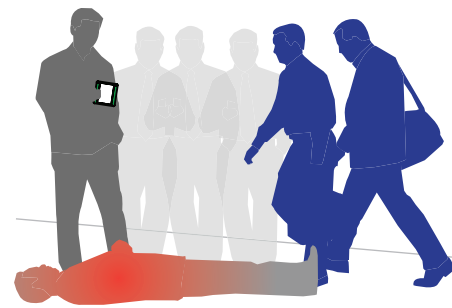
2:BASE



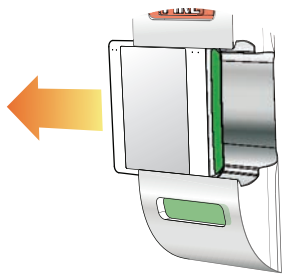
3:PRESS



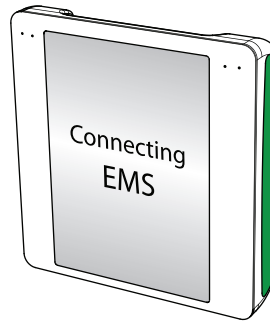
10:RESET



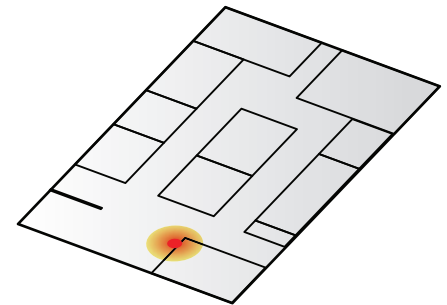
9:ARRIVAL



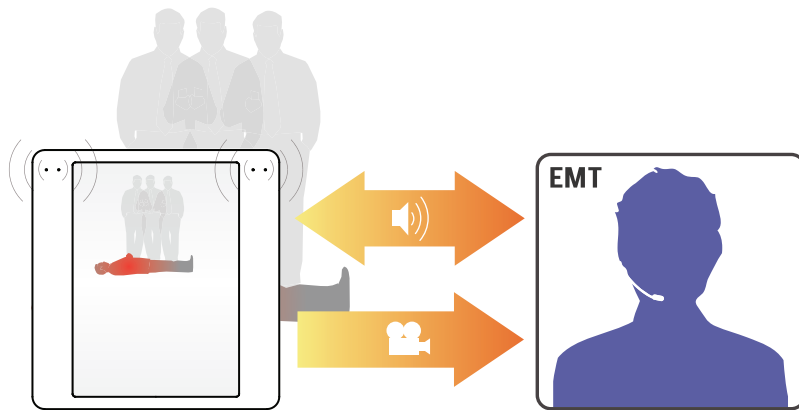
4:PULL



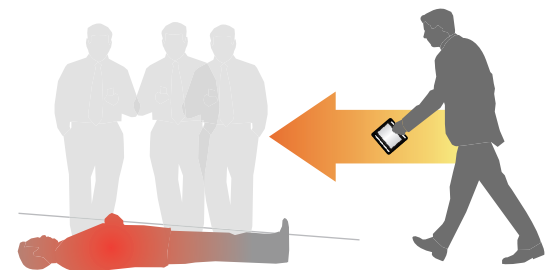
5:CALLS



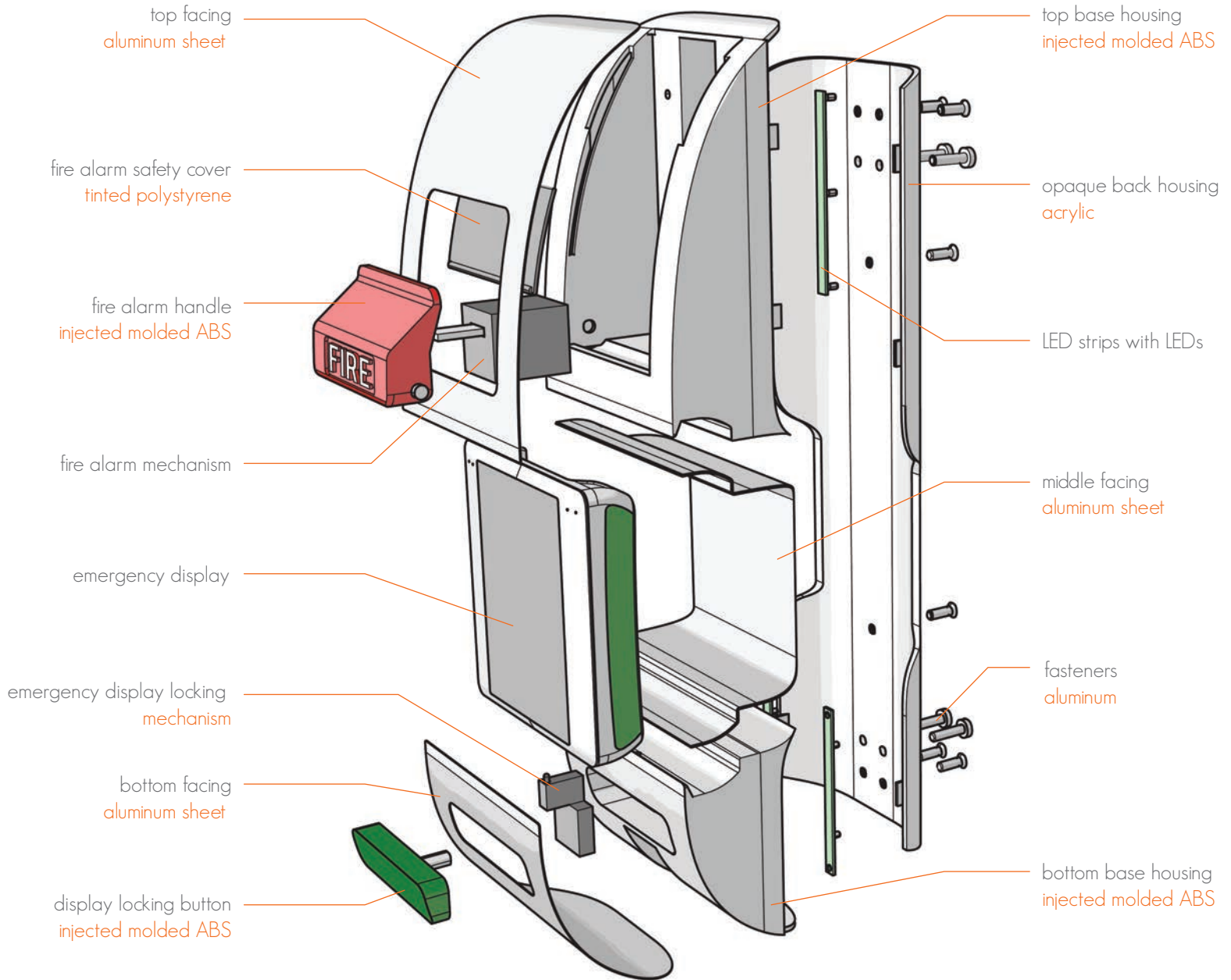
6:LOCATES

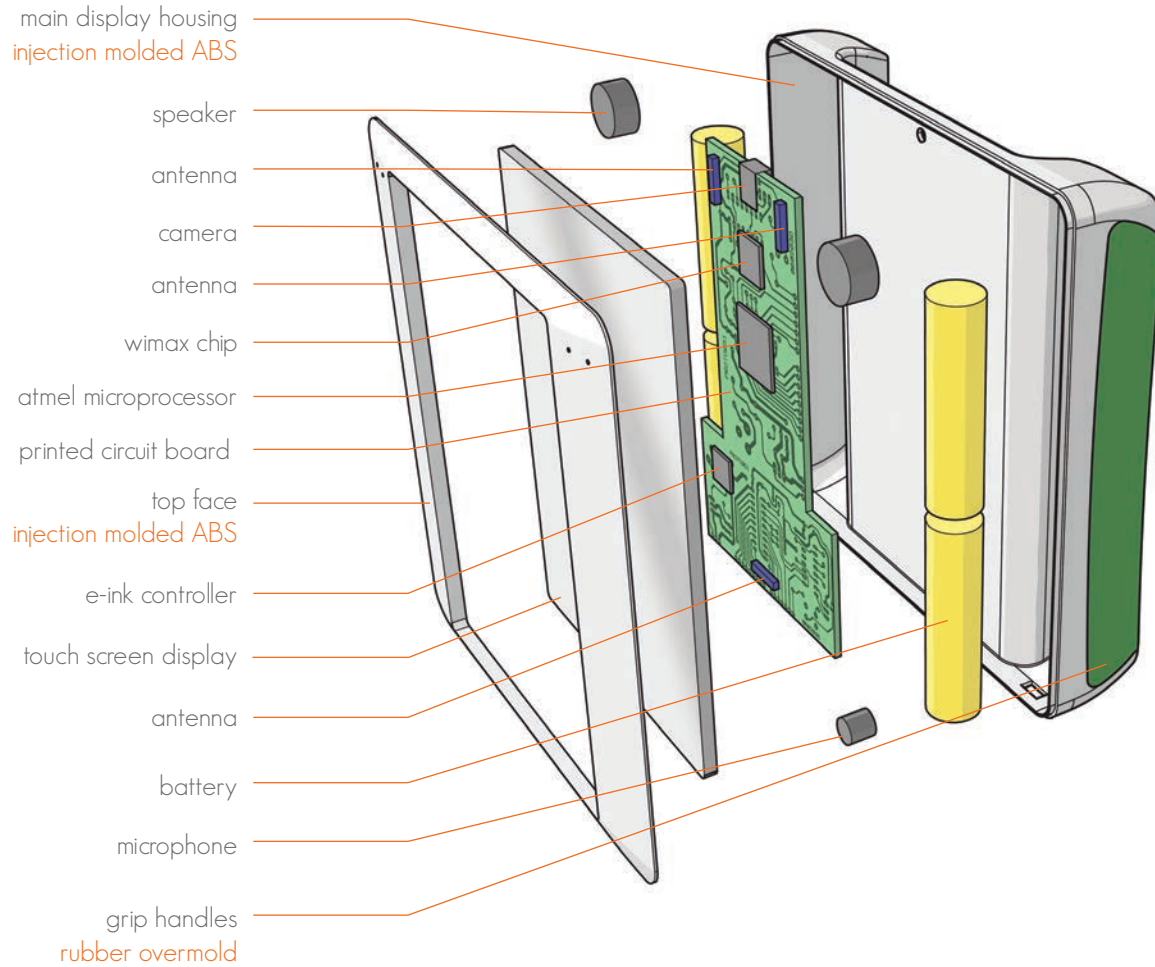


8:ASSISTANCE



7:ATTEND





EASILY MAINTAINED

the device is easily disassembled to gain access to parts that may need serviced. this allows the product to have any faulty parts replaced rather than having the whole unit replaced. this saves time and money on the consumer and manufacturer sides.

EFFICIENCY OF PARTS

the parts that make up the design have been efficiently thought out. by integrating parts when necessary, it reduces the amount of parts that need to be processed for tooling and manufacturing. this reduces the amount of processing for the entire product and saves time and money.

RECYCLABLE MATERIALS

the product uses recycled aluminum facings and fasteners. using recycled materials strays away from harsh production of metals from its raw form. this promotes the use of recycled materials and pushes for more sustainable design.

RECHARGEABLE

the emergency display is powered with rechargeable batteries. rechargeable batteries allow for multiple use and the power within them can be replenished. this reduces the amount of batteries that would have to be replaced and disposed.

SUSTAINABLE PACKAGING

the packaging of the product will use recycled materials, such as recycled cardboard. in the way the product will be sold and distributed, it will not need flashy packaging to sell itself, which cuts down on printed material.

THE PRODUCT NEEDS TO ATTRACT POTENTIAL USER'S ATTENTION

HOW DOES NATURE DO IT?

LIGHT



**ANGLER
FISH**

female anglerfish attracts prey
using bioluminescence

COLOR



BEEES

flowers emit UV wavelengths to
attract bees to induce pollination.

SHOWY DISPLAY



**MALE
FRIGATEBIRDS**

male frigatebirds attract mates
with an elastic, red gular pouch
that is inflatable

**THE NATIONAL
AVERAGE
RESPONSE TIME
FOR A PARAMEDIC
IS 15 MINUTES.
TOO LONG WHEN
YOUR LIFE IS
AT RISK?**



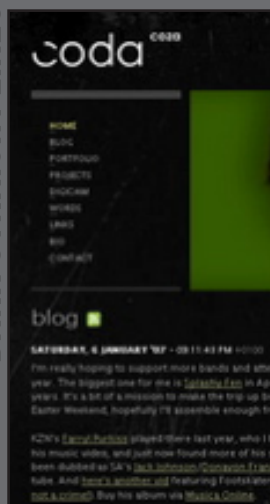
BRAND IDENTITY

- design language
- brand benchmarking
- brand standards guide
- visualization of critical media options
- implementation timeline
- brand identity
- application of biomimicry

CONTEMPORARY PROGRESSIVE

when used in branding a product, contemporary progressive describes a simple yet eye-catching design. by sticking with consistent sans-serif fonts and black, grays, and a splash of orange, it gives off a serious, reliable tone

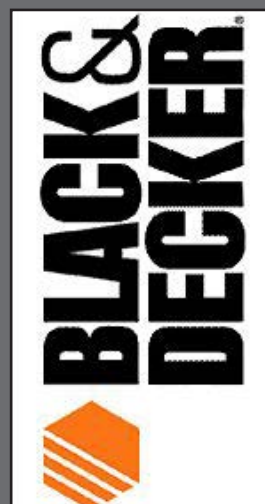
DARK STRAIGHT LINES



CLEAN SURFACES



BOLD TYPE



SIMPLE EFFECTIVE ADS



personality/character

professional, scientific

form

straight lines, boxes

materials/textures

solid texture, clean lines

color

blue, green, white, gray

typographic treatment

sans-serif type, tables, lists

company locations

international

tagline

"science for a better life."

logo



color



Bayer: Science For A Better Life

Navigation: [Bayer Group](#) | [Research & Innovation](#) | [Products](#) | [Sustainability & Commitment](#)

Controlling Diabetes Fulfilling Dreams
» more on this topic

Bayer Group Spring Financial News Conference
On March 3, 2009 Werner Wenning and Klaus Kühn will inform about the results of fiscal year 2008 of Bayer AG. » more

Research & Innovation Scientist elucidates chemistry of life
Professor Patrick Cramer and his team have elucidated the chemical processes which turn the building blocks of DNA into a living, biological process. ⌚ 4:57 min.

Special Interest

- [Investor Relations](#)
- [Press](#)
- [Jobs and Career](#)
- [Sports](#)
- [Foundations](#)
- [Culture](#)
- [BayKomm](#)

News

February 20, 2009
For excellent teaching and research in engineering:
Bayer sponsors first Chair for Apparatus Engineering at Dortmund's Technical University » more

February 12, 2009
Bayer Schering Pharma to invest 100 million Euro in China to build a global R&D center » more
⌚ 1:13 min.

Podcast Center

→ [Trasylo!](#)

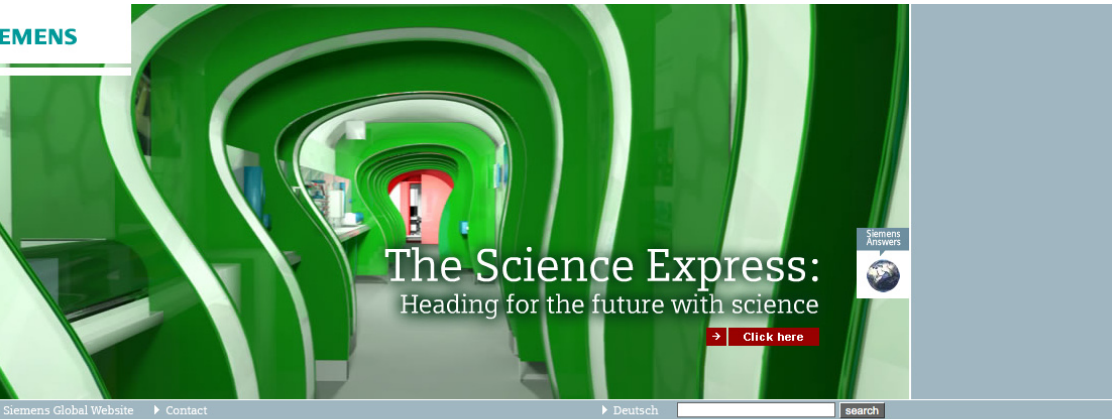
→ Important prescribing information for healthcare professionals in the U.S.

Publications

Please select

- [Stockholders' Newsletter Third Quarter 2008](#)
- [Financial Reports](#)

personality/character	friendly, simple
form	straight lines, boxes
materials/textures	solid texture, clean lines
color	blue, gray, white
typographic treatment	sans-serif type, tables, lists
company locations	international
tagline	"we can do that."



logo **SIEMENS**



- Energy
- Healthcare
- Consumer Products
- Products A - Z
- Products and Drives
- Market Specific Solutions
- Financial Solutions
- IT Solutions and Services
- Communication Networks
- Information
- Engineering Technologies
- Quality
- OSRAM

- > Investor Relations
 - > Press
 - > Jobs & Careers
 - > Corporate Responsibility
 - > About Us
- United States

Siemens Answers
 Learn more about how Siemens innovations answer the world's toughest questions confronting Industry, Energy and the Environment, and Healthcare. >

personality/character

friendly, natural

form

boxes, layered curved lines

materials/textures

solid texture, clean lines

color

blue, green, white,

typographic treatment

sans-serif type, tables, lists

company locations

international

tagline

“when life depends on medical technology.”

logo



color



Medtronic

Enter your keyword(s)

[Health](#)

[Our Therapies](#)

[For Physicians](#)

[About Medtronic](#)

[Careers](#)

[Investors](#)

[Ne](#)

Medical Wonders

Innovating for Life



▲ single line version

▲ stacked tag line version



OUTRO



OUTRO
SAFE BUILDING SOLUTIONS

LOGO

a brand goes far beyond a business name and logo. it is your entire image and the way that you are perceived by your customers. it's your reputation and it's the emotions and attitudes that are associated with everything you do, and all that your business stands for.

the look of our logo conveys a message of sincerity, reliability, and sophistication. with a strong visible type and eye-catching colors, it lets the viewer know our brand is one to be trusted.

bold type

using a serious upper-case type lets the audience know this is a genuine product. using this sans-serif type keeps it simple and easy to spot in an emergency situation.

ascending arrows

the use of arrows around the type is to represent "a way out", since our product is used to get a victim out as safely and quickly as possible. having them curved and scaled down a size is used to embody the wireless signal used on computers, as a means for communication.

CLEAR SPACE

clear space is the surrounding area around the logo that should remain free of graphics, photos and text. the minimum clear space is the area shaded in gray (shown below), and is considered part of the identity. do not print in this space. clear space will vary depending on the size the logo is reproduced.



COLOR USAGE

the following cmyk, rgb and web hex colors should be used at all times with the correct opacity when reproduced and should not be altered at anytime. when using a grayscale logo, it should be 100% black, but using the same opacity levels for the outer arrows.



cmyk	rgb	web hex	opacity
0c 0m 0y 70k	109r 111g 113b	#606F71	100
0c 50m 100y 12k	220r 132g 26b	#DC841A	100
0c 50m 100y 12k	220r 132g 26b	#DC841A	80
0c 50m 100y 12k	220r 132g 26b	#DC841A	60

LOGO USAGE

to the right are four preferred representations of the brand mark. when possible, it is best to use the color OUTRO logo with no tag line. grayscale and one color should only be used when color is not available.



preferred logo usage



logo with corporate tagline



grayscale logo



one color logo

BEBAS
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890 &?!

geosans regular

ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz 1234567890 &?!

geosans medium italic

ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz 1234567890 &?!

FONTS

the bebas font only applies to use with the brand mark and titles. when in the middle of text, geosans should be used with no capitalization expect when using an acronym. also, you should not bold the words or change the typeface. even though these are the typefaces, you should use the EPS files whenever possible and not type in the logo. this is the best way to ensure consistency.

BUSINESS CARD

the stationery system is OUTRO's most widely used communications tool. its components, both individually and as a whole, are designed to create a coherent visual identity through consistent use.

the stationery system features the master logo and is printed in mentioned colors (refer to color usage). business cards are printed on un-watermarked mohawk strathmore script 100% PC white smooth. it is a recycled eco-conscious paper, FSC-certified, carbon neutral, green-e, and 100% post-consumer waste.



«OUTRO»

7777 southern ave. phoenix, arizona 86406

LETTERHEAD

stationary is to be printed on unwater-
marked mohawk strathmore script 100% PC
white smooth. it is a recycled eco-conscious
paper, FSC-certified, carbon neutral,
green-e, and 100% post-consumer waste.

ENVELOPE

envelopes are to be printed on unwatermarked mohawk strathmore script 100% PC white smooth. it is a recycled eco-conscious paper, FSC-certified, carbon neutral, green-e, and 100% post-consumer waste.



MAGAZINE AD

SAFE BUILDING SOLUTIONS

«OUTRO»

ABOUT 50% OF
DEATHS OCCUR
WITHIN ONE
HOUR OF THE
HEART ATTACK -
OUTSIDE A HOSPITAL

for more information on how to improve
your safety please visit www.outro.com

SAFE BUILDING SOLUTIONS

«OUTRO»

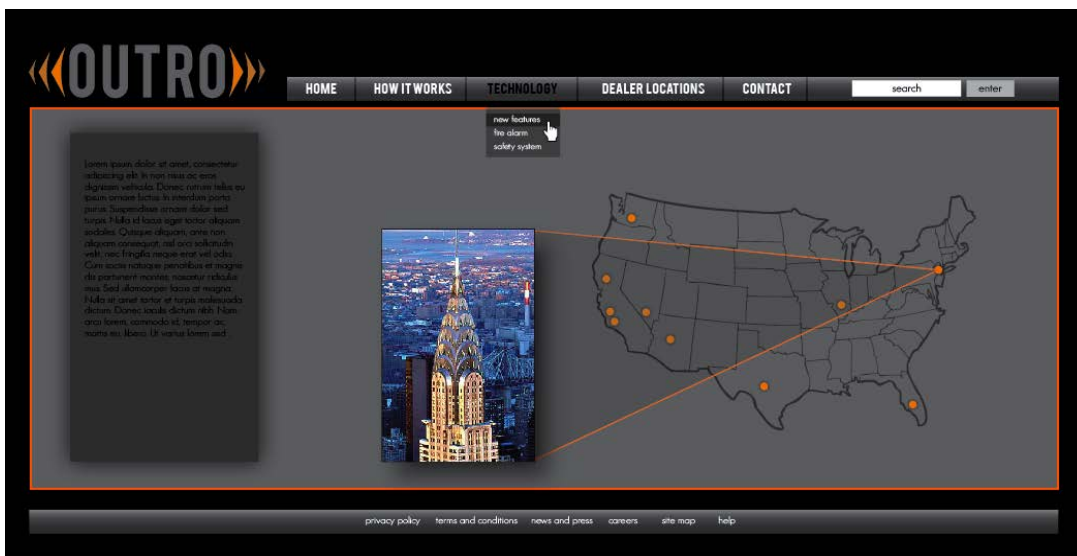
ONLY 21% OF
ADULTS WERE
CONFIDENT
THEY COULD
PERFORM CPR,
AND ONLY 15%
WERE CONFIDENT
IN USING AN AED

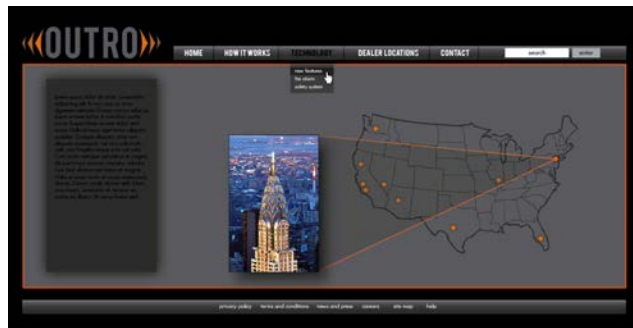
for more information on how to improve
your safety please visit www.outro.com

TRADESHOW



WEBSITE





website launch

mailers will be sent to EMT
and business buildings

MAY

JUNE

JULY

AUGUST



magazine ads will appears in specialty magazines geared towards business owners and paramedics

product launch



appointments may be made to have a representative come in and talk with you about product

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER



"EMS expo" - one of the largest conventions held in atlanta, georgia

positioning tag line

safe building solutions

nomenclature

dependable, certain, trustworthy, valid, accurate, durable, secure, original, modern, state-of-the-art, clean, simple, convenient, intelligent

voice/tone

a state-of-the-art device that will aid in building safety.
a simple yet modern product**POSITIONING STATEMENT**

OUTRO is a simple concept with endless potential. after review of the market opportunity analysis and the external environment, it is clear that OUTRO would be both profitable for business and valuable to the end users. the current competitive environment surrounding the market for “safe building solutions” is extremely minimal. today’s buildings include emergency exit doors and signs, fire alarms, sprinkler systems, and the newest addition, automated external defibrillators (AEDs). these technologies have long withstood technological change and pave the way for new and innovative solutions to emergency situations encountered in buildings. as the need is there, the businesses’ mission and strategies are ones that will achieve a first mover advantage and create a way to have “safe building solutions” as a new building requirement or standard such as was done with the US green building council and it’s LEED certification.

PROPOSITION PITCH

emergencies can happen anytime at any place. emergencies that occur in buildings present difficulties for first responders because of uncertain patient locations. the first responders are able to find the location of the building but not necessarily the room number, room location, or floor number. this information along with a lack of scene preparation can result in longer response times that become a problem in saving lives.

THE PRODUCT'S BRAND NEEDS TO CAPTURE VIEWER'S ATTENTION

HOW DOES NATURE DO IT?

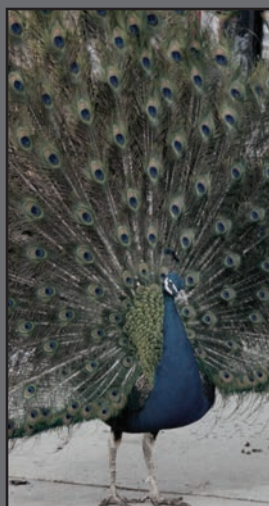
COLOR



BERRIES

when berries are not ready to be eaten they will remain a green color to mix in with the plant, so animals can not see them. when they are ready to be seen they will change to a bright red color.

ATTRACTIVE DISPLAY



**MALE
PEACOCKS**


male peacocks will use their beautiful display of feathers to attract a female.

BOLD FEATURES



**MALE
DEER**

when choosing a mate, a female deer will choose a male with bigger, more noticeable features such as their antlers.



**ONLY 21% OF
ADULTS WERE
CONFIDENT
THEY COULD
PERFORM CPR,
AND ONLY 15%
WERE CONFIDENT
IN USING AN AED**

ENGINEERING MATERIALS

photographs of prototype

target technical specifications

final product architecture

ecological impact factor assessment

enhanced bill of materials

engineering cost estimation

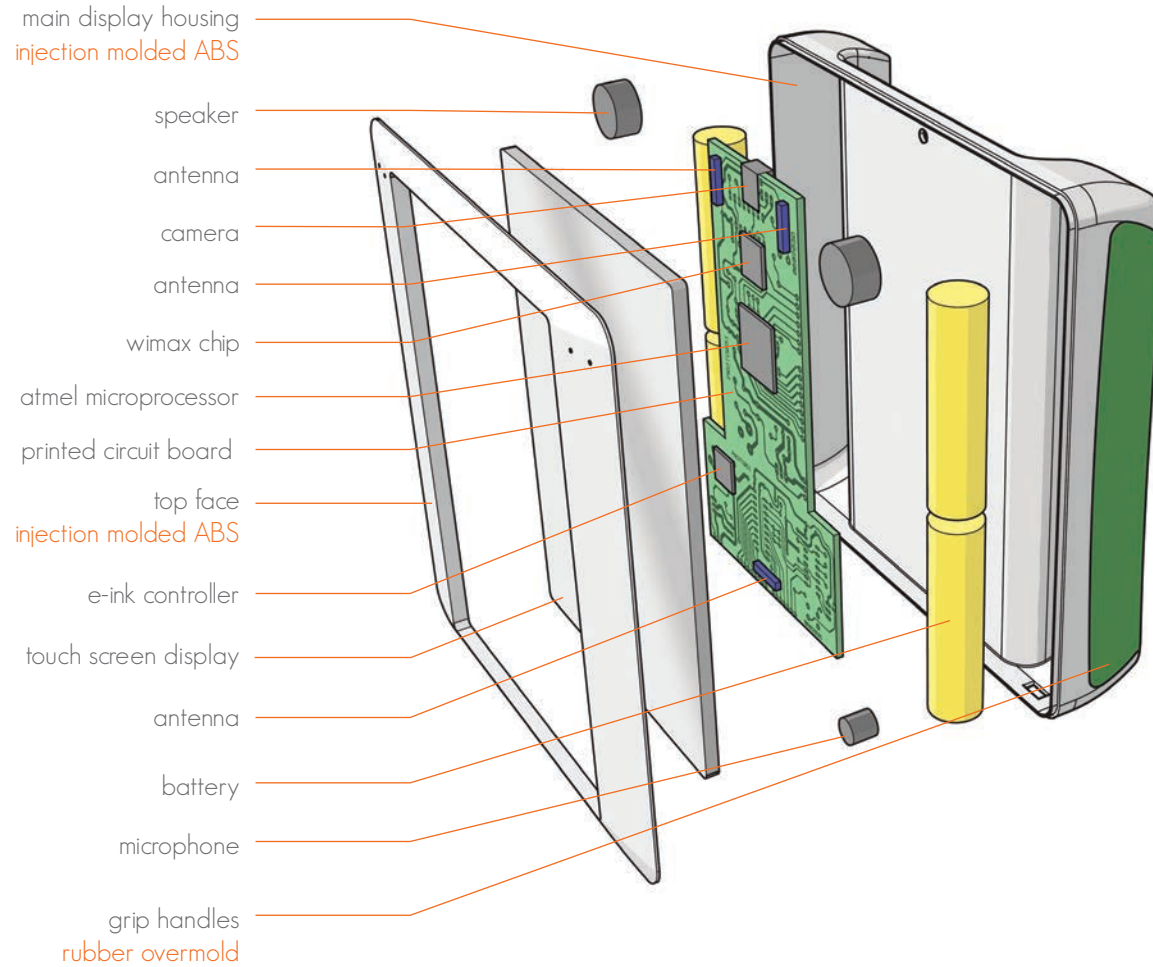
reasonable & justifiable social & environmental claims

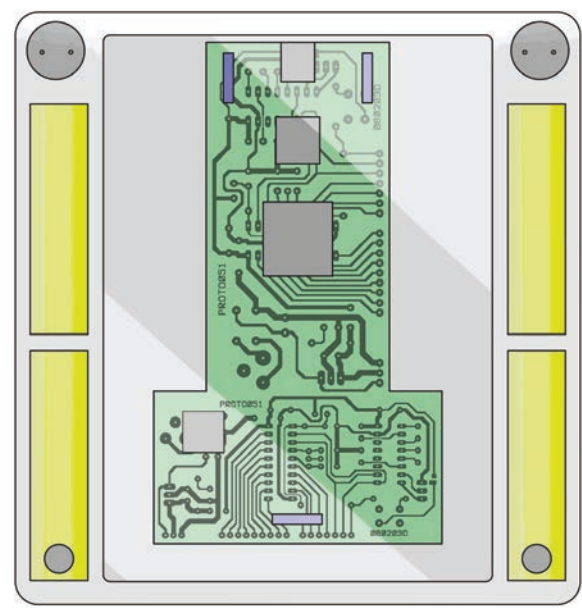
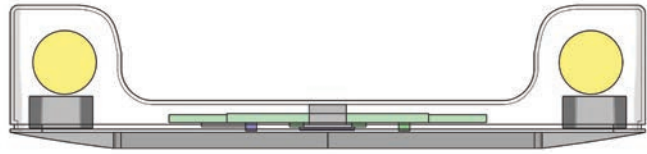
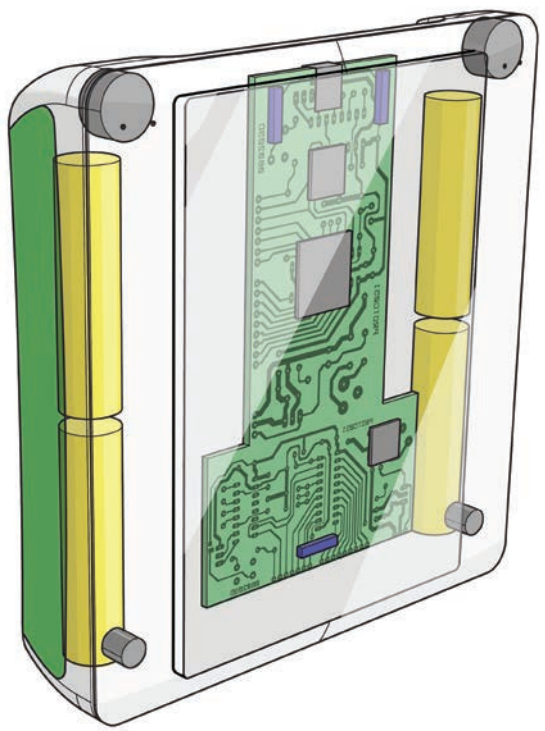
manufacturing documentation

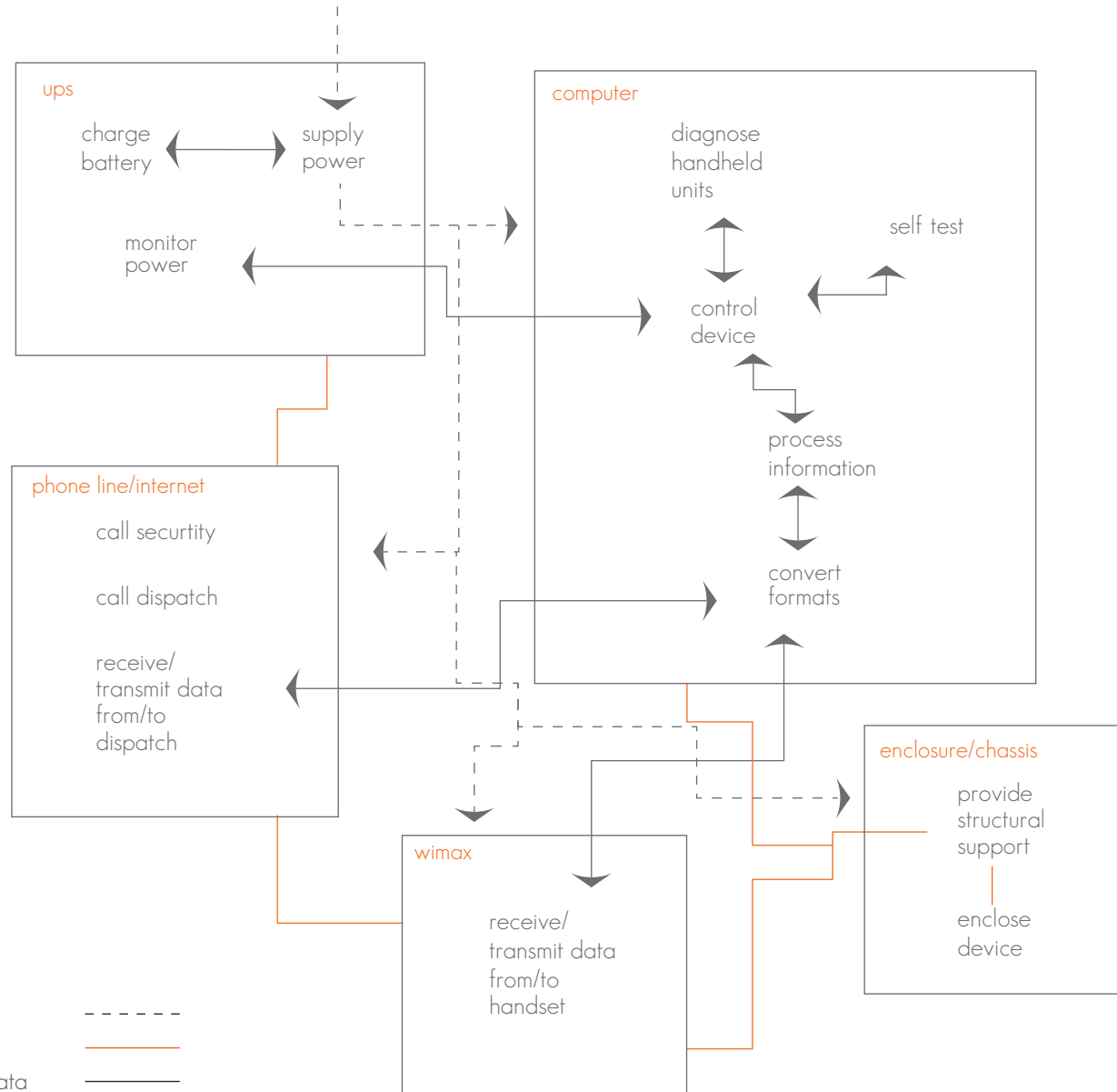
application of biomimicry

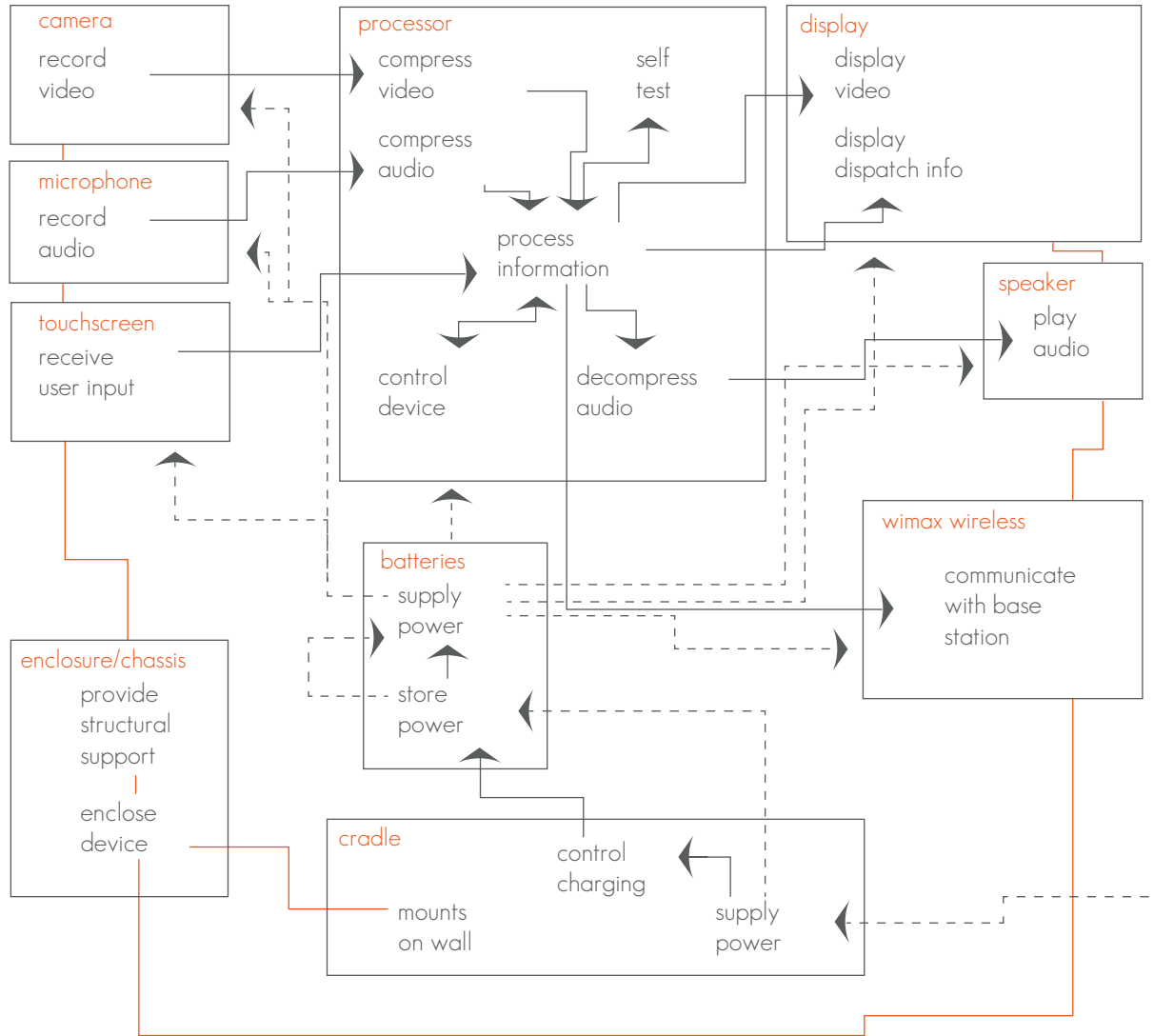


screen size	6 inch
screen type	e-ink
screen resolution	800 x 600
camera	1.3 MP @ 15 FPS
connectivity	wimax, USB
weight	1.5 lb.
size	127 x 133 x 29 mm
protection rating	ip43
survives drops from	4 feet.
sound pressure output	max. 90 DB at 1 foot.
input method	touchscreen
battery life (active usage)	2 hours (minimum) + 2 hour audio only
battery life (on shelf)	1 month
sensors	temperature









MATERIAL	AMOUNT	OKALA FACTOR	OKALA IMPACT
ABS, primary	1.25 lb.	23 lb.	28.75
PMMA, primary	0.25 lb.	38 lb.	9.5
aluminum, primary	0.25 lb.	130 lb.	32.5
injection molding	15 lb.	10 lb.	15
al. machining	0.25 lb.	1.1 lb.	0.275
int. circuitry RoHS	0.04	9200 lb.	368
battery, lithium-ion	2	2.7 batt.	5.4
cardboard, secondary	1 lb.	8.9 lb.	8.9
paper, white secondary	0.01 lb.	4.8 lb.	0.048
flexographic printing	0.01 lb.	3.4 lb.	0.034
transportation (est.) truck, 16 ton	3.6 ton-mile	2.4 ton-mile	8.64
landfill (est.) ABS (est.)	1.25 lb.	25 lb.	31.25
PMMA (est.)	0.25 lb.	20 lb.	5
Other (est.)	1 lb.	100 lb.	100
recycling truck, 16 ton	3.6 ton-mile	2.4 ton-mile	8.64

notes : does not take into account the display since no data is available

sum 621.937 okala impact millipoints

est. lifetime 131,400 hours

impact/hour 0.0047 okala impact millipoints / hour



MATERIAL	AMOUNT	OKALA FACTOR	OKALA IMPACT
ABS, primary	0.5 lb.	23 lb.	11.5
glass, clear primary	0.2 lb.	9.1 lb.	1.82
steel, primary	0.1 lb.	25 lb.	2.5
injection molding	0.5 lb.	10 lb.	5
steel, machining	0.1 lb.	0.54 lb.	0.054
int. circuitry RoHS	0.04	9200 lb.	368
battery, lithium-ion	2	2.7 batt.	5.4
cardboard, secondary	0.4 lb.	8.9 lb.	3.56
paper, white secondary	0.01 lb.	4.8 lb.	0.048
flexographic printing	0.01 lb.	3.4 lb.	0.034
transportation (est.) truck, 16 ton	2.8 ton-mile	2.4 ton-mile	6.72
landfill (est.) ABS (est.)	0.5 lb.	25 lb.	12.5
Other (est.)	0.5 lb.	100 lb.	50

notes : does not take into account the display since no data is available

sum 467.136 okala Impact millipoints

est. lifetime 8,760 hours

impact / hour 0.0533 okala impact millipoints / hour



HANDHELD

NAME	PART NO.	VENDOR	QUANTITY	PRICE	TOTAL
EEE PC901 (ASUS)	PC901	ASUS	1	\$379.00	\$379.00
touchscreen (ebay)		ebay	1	\$91.00	\$91.00
					\$470.00

BASE STATION

existing computer	\$0.00
	\$0.00

HANDHELD

microcontroller	AT32AP7000	digi-key	1	\$13.00	\$13.00
camera	TCM8240MD	sparkfun	1	\$7.96	\$7.96
microphone	MB3015ASC	digi-key	1	\$2.07	\$2.07
touchscreen overlay	NO10-0554-T043	mouser	1	\$17.74	\$17.74
screen (flexible 6" diagonal e-ink. est price.)			1	\$100.00	\$100.00
screen controller	SIDI3521	epson	1	\$6.00	\$6.00
speakers	AS01308MR-2-R	mouser	1	\$1.78	\$1.78
wimax wireless (price is estimated)	SQN1210	sequans	1	\$40.00	\$40.00
antenna	3030A5887-01	mouser	3	\$1.30	\$3.90
li-po Batteries	LS17500 BA	mouser	2	\$8.48	\$16.96
cabling			1	\$5.00	\$5.00
misc. el. components			1	\$30.00	\$30.00
PCB			1	\$11.73	\$11.73
aluminum (price is estimated)			0.11 kg	\$7.00	\$0.80
ABS (price is estimated)			0.57 kg	\$6.00	\$3.41
acrylic (price is estimated)			0.11 kg	\$5.00	\$0.57
charging IC (cradle)	MCP73841	digi-key	1	\$0.97	\$0.97
power supply (cradle)	709-NFM05-5	mouser	1	\$15.26	\$15.26
					\$277.14

BASE STATION

mac mini		apple	2	\$499.00	\$998.00
UPS	SUA2200XL	APC	1	\$1,059.00	\$1,059.00
modem		apple	4	\$49.00	\$196.00
wimax base station (price is estimated)			1	\$1,500.00	\$1,500.00
					\$3,753.00

PART	PROCESS	VARIABLE COST	DESCRIPTION	EST. COST
bottom casing top casing cradle part 1 cradle part 2 cradle part 3 fixed cost	processing (injection molding) processing (injection molding) processing (injection molding) processing (injection molding) machining of aluminum	FIXED COST	95 pcs/hr. on 2700 kn press at \$48/hr. 95 pcs/hr. on 2700 kn press at \$48/hr. 50 pcs/hr. on 3200 kn press at \$55/hr. 50 pcs/hr. on 3200 kn press at \$55/hr. 10 pcs/hr with CNC machining at \$60	\$0.51 \$0.51 \$1.10 \$1.10 \$6.00
bottom casing top casing cradle part 1 cradle part 2	tooling for injection molding tooling for injection molding tooling for injection molding tooling for injection molding		\$40k for mold/5000 units \$20k for mold/5000 units \$80k for mold/5000 units \$70k for mold/5000 units	\$8.00 \$4.00 \$16.00 \$14.00
est. total direct cost est. overhead charges est. total unit cost				\$51.21 \$25.61 \$76.82

COMPONENT	QUANTITY	HANDLING TIME	INSERTION TIME	EST. TOTAL TIME
bottom casing	1	3	1	4
batteries	4	2	2	16
PCB	1	5	3	8
PCB fasteners	4	2	4	24
battery connectors (soldering)	4	5	10	60
speaker connector (soldering)	2	5	10	30
microphone connector (soldering)	2	5	10	30
speaker	2	2	1	6
microphone	2	4	2	12
screen	1	15	15	30
screen fasteners	8	2	5	56
top casing	1	2	3	5
case fasteners	6	2	8	60
est. unit total time (seconds)				341
est. unit assembly cost @ \$45/hour				\$4.26

BILL OF MATERIALS

direct	\$277.14
overhead	\$55.43
total	\$332.57

ASSEMBLY

direct	\$4.26
overhead	\$7.67
total	\$11.94

MACHINING

direct	\$51.21
overhead	\$25.61
total	\$76.82

TOTAL

total direct cost	\$332.61
overhead charges	\$88.71
total unit cost	\$421.32

SOCIAL EQUITY

- health Issues
- OUTRO will assist in saving lives at a reasonable cost.
- labor Issues
- OUTRO will be manufactured under fair labor practices and thereby making sure that there is no exploitation of workers.
- OUTRO will be manufactured in a facility that has appropriate and enforced plant safety rules.
- the manufacturers of OUTRO will use third-party certifiers to verify the absence of slave and child labor.
- the manufacturers of OUTRO will implement programs designed to help disadvantaged families with children.

ENGINEERING MATERIALS

- OUTRO will only use RoHS compliant components when available.
- materials for OUTRO will not be sourced from fragile ecosystems.
- OUTRO is designed to be quickly taken apart so valuable and toxic materials can be easily removed.
- energy
- OUTRO used rechargeable batteries that should last for the lifetime of the device.
- waste
- OUTRO is designed for quick take apart and easy recycling of components.
- life cycle issues
- made to be durable.
- designed modular for easy replacement of broken parts.
- will be taken back through a recycling program at the end of its life.
- packaging and collateral
- will use minimal amount of packaging, and be packaged in bulk for most efficiency.
- packaging is made out of recycled material, and will be reused or recycled.
- there will not be printed documents with each OUTRO, rather just with each shipment.
- printed documents will be printed on recycled paper.

MANUFACTURING

integrate parts

battery holders will be integrated into the mold of the bottom casing. this will eliminate the need for separate battery housing with no negative impact. originally we designed two PCBs for the OUTRO, but we changed that to one PCB with a larger area. this enhances the ease of assembly and handling of the PCBs, and is cheaper since we do not need interconnects between the two boards.

standardize parts

the batteries used in the OUTRO are lithium-ion batteries in AA form. there are several manufacturers that produces such batteries with very similar specifications to the ones we are using. this enables us to use readily available batteries from a new manufacturer if we need to.

ease of assembly

our whole product can be assembled from the top, with the exception of the final fasteners that connects the top and the bottom casing, for which the OUTRO will be rotated upside down. parts are self aligning and requires minimal effort to position.

RECYCLING

easy of disassembly

the OUTRO main casing is not glued, and the OUTRO can easily be opened by removing the six (6) screws holding the top and the bottom casing together, and are accessible from the back of the device. once opened the batteries, speakers and microphones can be removed without tools (if cables are cut). the screen requires four (4) small small screws to be removed and one wire to be cut/removed. the PCB board requires four (4) small screws to be removed. in summary, the device can be taken completely apart by removing fourteen (14) screws that are all easily accessible, and by cutting seven (7) wires.

THE PRODUCT NEEDS TO WITHSTAND ACCIDENTAL IMPACTS

HOW DOES NATURE DO IT?

ACROBATICS



**HOUSE
FLY**

when the house fly approaches a landing on the ceiling, it approaches at 45 degrees and stretches out its front feet. on contact the fly cart-wheels over onto its other four feet.

CUSHIONING



**HEALING
BONES**


when a bone is broken or injured, many organisms can re-grow and heal the bone.

HEALING



**CATS
SKELETON**

in cats there are no direct connections of bone between its forelimbs and its collarbone and vertebral column. this cushions landing while running and jumping, and does not reduce the speed of the animal.



**VIRTUALLY NO
ONE SURVIVES
A SUDDEN
CARDIAC
ARREST IF
THERE IS NO
MEDICAL
ATTENTION
AFTER 8
MINUTES**

BUSINESS PLAN

- external environment
- internal environment
- market opportunity analysis
- strategies & tactics
- financial plan, preliminary financials
- consumer behavior model
- application of biomimicry

POLITICAL ENVIRONMENT

the recovery and reinvestment act

- an \$888 billion stimulus package designed to create jobs and encourage economic growth
 - \$165 billion for investment in infrastructure and science
 - \$153 billion for healthcare
 - \$3.7 billion for hospital and medical facility construction
 - \$23.9 billion for investment in health information technology

obama healthcare agenda

- focus on increasing the availability of healthcare and lowering healthcare costs
- promote public health
- increased preparedness for medical emergencies
- support first responders

ECONOMIC ENVIRONMENT

- 2008 financial crisis
- recession was formally declared on december 1, 2008
- US economy shrank at an annual pace of 6.1% in the first quarter of 2009
- consumer spending fell at a 3.5% annual rate in the last three months of 2008, second-largest contraction on record
- fixed investment in equipment and software plunged at an annual rate of 34%, the largest drop in 50 years
- reduced consumer spending to sharp growth in business inventories
 - firms responded by reducing inventories by more than \$100 billion during the first quarter of 2009
- many state and local governments are facing budget crises

SOCIOCULTURAL ENVIRONMENT

- economic recession
- sustainability movement
- baby-boomers and the aging population

TECHNOLOGICAL ENVIRONMENT

flexible OLED display

- low cost, high durability, low energy use.
- thin, lightweight, bendable, and consume only a fraction of the energy and almost 90% less materials than a typical LED screen

flexible display institute (FDC)

- b+positive's sponsor
- recently, HP and the FDC announced they had produced the first affordable prototype, using self-aligned imprint lithography (SAIL) technology
 - allows the screens to be produced in rolls rather than individual sheets, making their production much more cost-effective
- current estimates expect the flexible display market to grow from \$80 million in 2007 to over \$2.8 billion by 2013

INDUSTRY/COMPETITIVE MARKET

key competitors

- notifier by honeywell
- honeywell's first responder interface
- trueposition
- respondone by respondone inc.
- signal by siemens

MISSION STATEMENT

safe and secure ltd. strives to create building standards which incorporate innovative emergency tools and procedures so that the public can have peace-of-mind when they are in a confined environment. through strategic partnerships with building councils and organizations, safe and secure LTD. seeks to redesign emergency standards in existing buildings and provide new approaches to building development.

mantra

"safe building solutions"

tagline

"when peace-of-mind matters"

MARKETING AND SALES

- trade shows
- print media
- website
- direct sales

history / mission

the OUTRO system was developed by b+positive, a team of students enrolled in the innovationspace program at arizona state university. innovationspace is a collaborative effort between ASU's college of design, ira a. fulton school of engineering and W.P. carey school of business in which students from four disciplines; business, engineering, industrial design and visual communication design, work to create a new product design concept that addresses a specific societal need and which will be successful in the marketplace.

the b+positive team began work on this project in the fall of 2009; the team was challenged to design a product for responding to emergency medical situations which incorporated flexible display technology. research began by attempting to explore and understand the problems faced by first responders during emergency situations. with help from the phoenix fire department and PMT ambulance the team was able to interview emergency response workers and even witness first-hand through shadowing various EMS workers, many of the issues and complications these individuals face. one of the biggest concerns for EMS personnel dealt with the uncertainty they faced when responding to emergencies. often times, they would find themselves at the scene of an emergency able to locate the actual site of the emergency, but unable to locate the exact room number, floor, or location of the victim. in other cases, EMS workers would anticipate one type

of emergency based on the 911 call, and arrive on the scene to find themselves actually addressing a completely different issue. this lack of information often resulted in a lack of scene preparation and also contributed to longer response times; unacceptable in situations where mere seconds can mean the difference between life and death. based on this research, the team initially developed three concepts, and through collaboration with their program sponsor, the flexible display institute; the team chose to fully develop the OUTRO system to market.

from the innovationspace program, a company, safe and secure LTD. was formed, and work began on developing the OUTRO system to market. OUTRO was created with the intention of providing the public and emergency response personnel a new way of handling and responding to emergencies. as an organization, safe and secure LTD. is aimed at bridging the gap between emergency response and emergency preparedness currently present in public and private buildings. safe and secure LTD. seeks to be the industry leader in emergency response equipment, and eventually have OUTRO become the standard in fire alarm and emergency safety devices. by providing an innovative and cutting-edge emergency response tool, we hope to provide the public with peace-of-mind knowing that should an emergency arise, safe and secure LTD. and OUTRO will be there to assist them.

LEGAL STRUCTURE

- "c" corporation; incorporated in the state of arizona
- recommended for companies who need substantial capital, intend to grow rapidly and/or will have a substantial number of employees requiring equity incentives, such is the case with this company
- the stock structure of a corporation should make the company much more attractive to investors and will provide a powerful tool for attracting talented personnel while operating under a limited budget

FINANCIAL CONDITION

seed funding sources:

- AZFAST grant
- SBIR / STTR grants
- angel investors

ROLES AND RESPONSIBILITIES

sarah benberou - business manager

general business administration
 product development
 legal oversight (product ip, company incorporation)
 grant writing
 managing/obtaining funding sources
 supply chain management
 demand forecasting
 pricing analysis

cameron magness - industrial designer

product design
 materials
 tradeshow booth design
 human factors

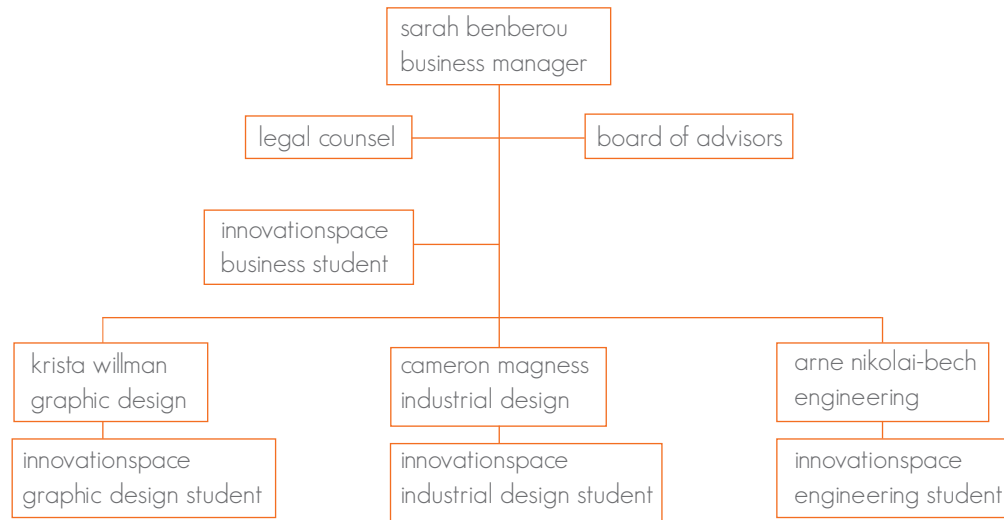
arne nikolai-bech - electrical engineer

product engineering
 testing
 developing prototype/design
 technical specifications
 materials

krista willman - graphic designer

website development
 marketing material
 tradeshow booth design
 developing brand image

PERSONNEL

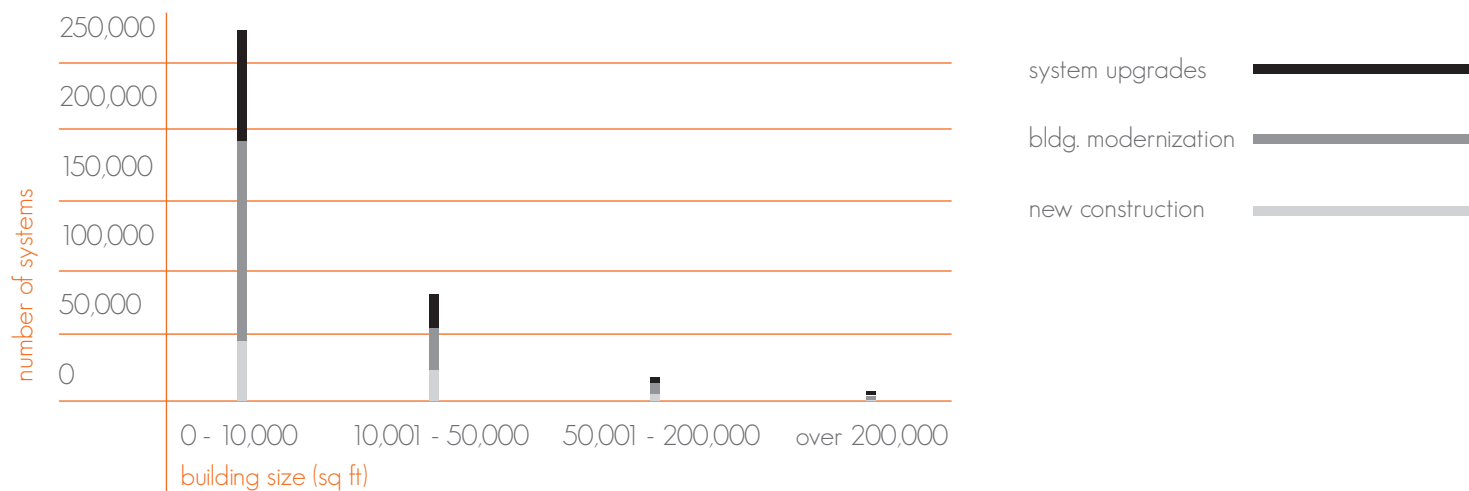


SAFE AND SECURE LTD. PHASE TWO ORGANIZATIONAL STRUCTURE



fire alarm system purchases are generally grouped into three categories:

- new building construction
- building modernization
- system upgrades



- of the nearly \$3 billion fire alarm installation market, new building construction represents \$600 million; modernization, \$1,800 million; and upgrades, \$600 million.
- there is an estimated requirement for 320,000 systems annually, 65,000 for new construction, 190,000 for modernization, and 65,000 for upgrades.

potential market segments

- commercial buildings
- educational institutions
- government and other public buildings

STRATEGY

long-term
shareholder value

- create customer loyalty
- provide the best products, services, and solutions
- develop partnerships

- innovation
- customer relations
- operational excellence

- human capital
- informational capital
- organizational capital

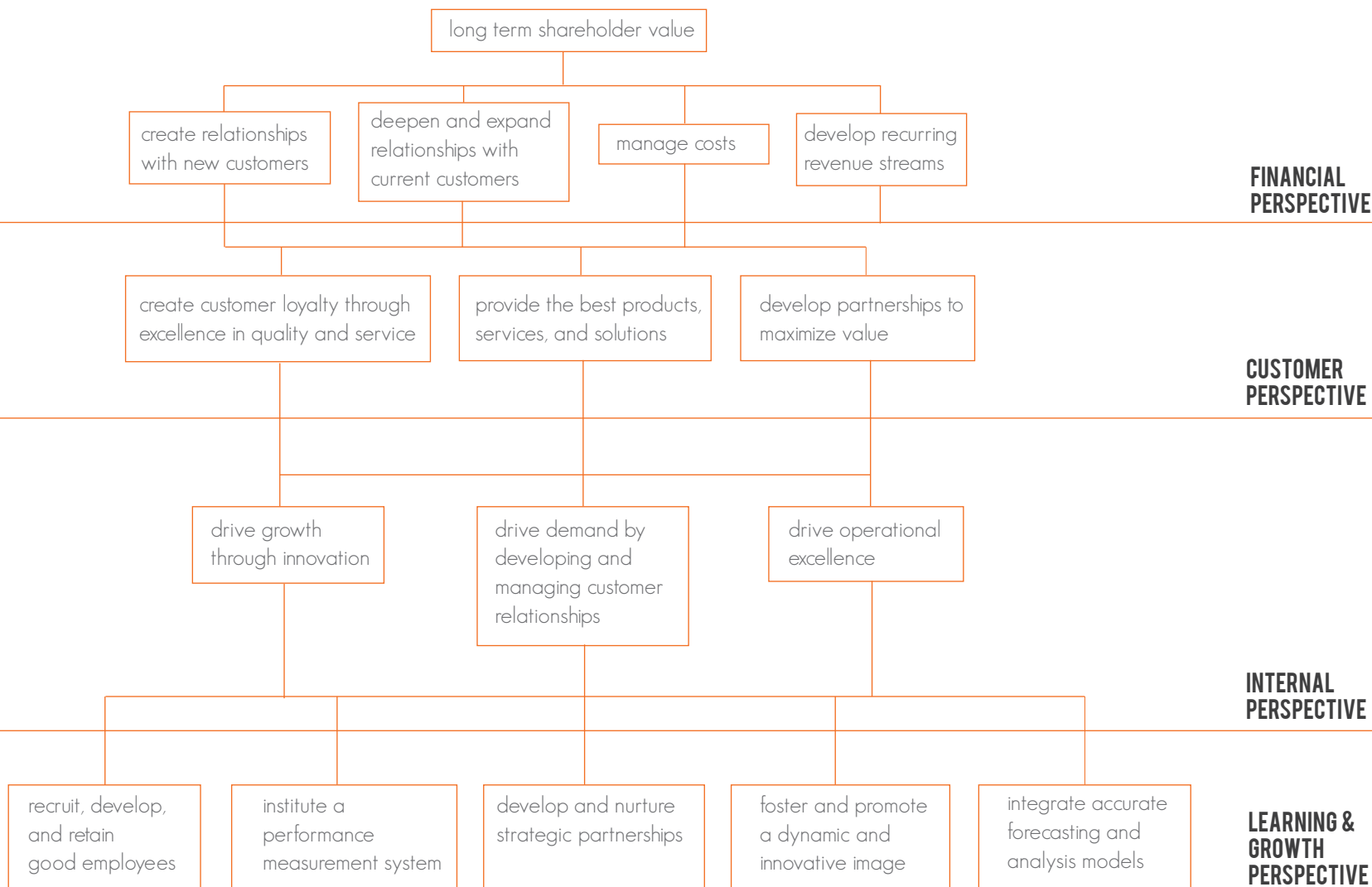
OBJECTIVE

build a solid and secure
financial foundation to
sustain our mission and
achieve our vision.

- aggressive marketing & promotion
- market leader of new technology
- user friendly
- consistent and reliable
- develop & strengthen relationships

- explore & develop new uses, products, materials & technology
- minimize product development time
- meet customer & end-user needs
- determine & build key customer base
- be socially responsible
- efficiently manage operations
- manage supply chain
- maintain cost-competitiveness

- recruit, develop, & retain good employees
- integrate accurate forecasting and analysis models
- institute a performance measurement system
- foster & promote a dynamic & innovative image
- develop & future strategic partnerships



FINANCIAL PERSPECTIVE

STRATEGY

- long-term shareholder value

OBJECTIVE

- build a solid and secure financial foundation to sustain our mission and achieve our vision.

CUSTOMER PERSPECTIVE

- create customer loyalty
- provide the best products, services, and solutions
- develop partnerships

- aggressive marketing & promotion
- market leader of new technology
- user friendly
- consistent and reliable
- develop & strengthen relationships

INTERNAL PERSPECTIVE

- innovation
- customer relations
- operational excellence

- explore & develop new uses, products, materials & technology minimize product development time
- meet customer & end-user needs
- determine & build key customer base
- be socially responsible
- efficiently manage operations
- manage supply chain
- maintain cost-competitiveness

LEARNING & GROWTH PERSPECTIVE

- human capital
- informational capital
- organizational capital

- recruit, develop, & retain good employees
- integrate accurate forecasting and analysis models
- institute a performance measurement system
- foster & promote a dynamic & innovative image
- develop & nurture strategic partnerships

MEASUREMENT

- obtained funding
- profitability

- return on advertising spending (ROAS)
- first to market with new technology
- user-trial judgments & opinions
- customer satisfaction; success rates

- % of budget for r&d
- actual launch date vs. plan
- customer input/opinion
- market share; return business
- sustainable & ethical business practices
- inventory; holding costs; shrinkage
- competitor prices; profit margin

- employee satisfaction, productivity, and retention.
- actual figures vs. forecasted figures

- number of new products introduced
- share of key accounts; number of cooperative efforts

TARGETS/INITIATIVES

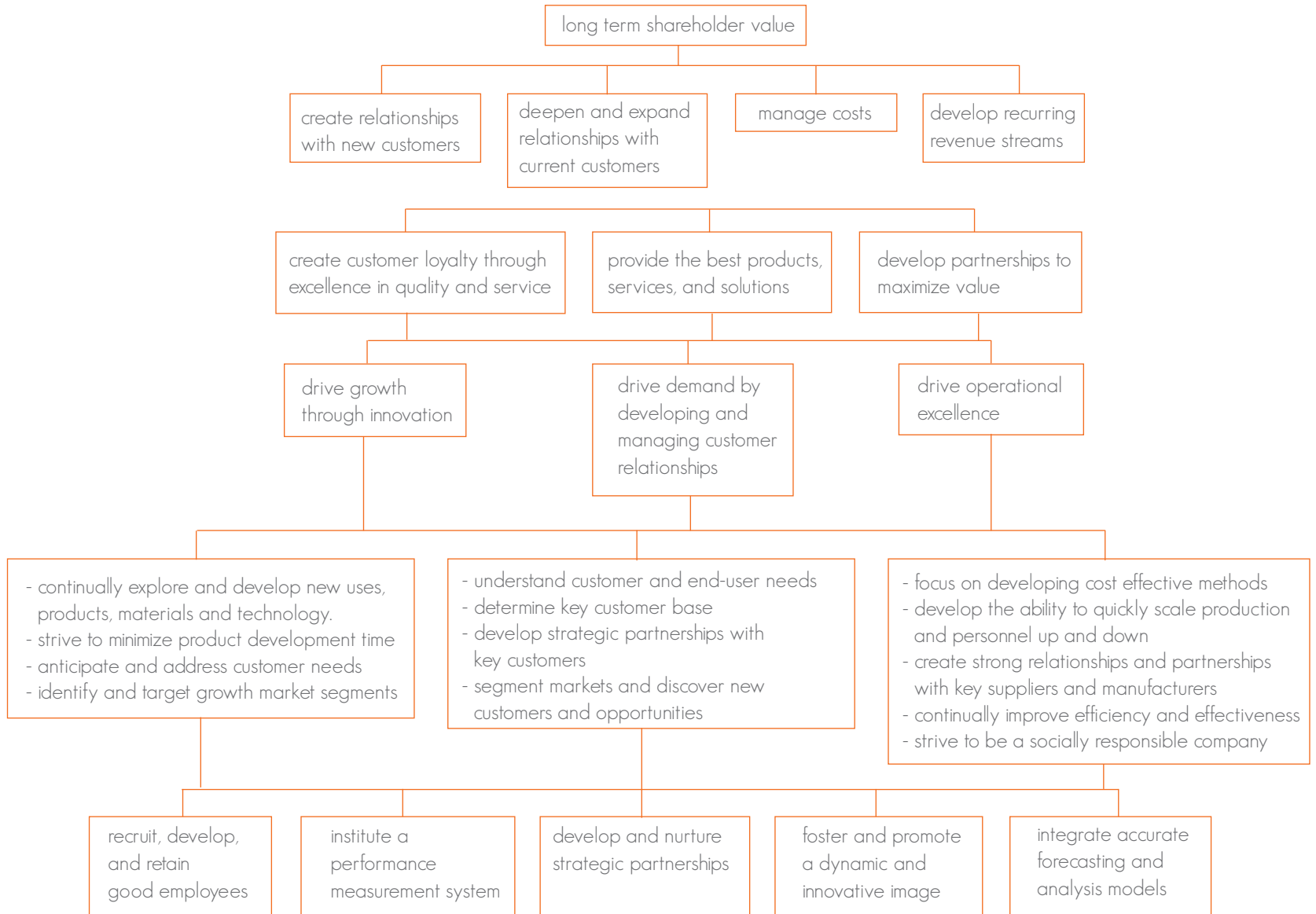
- secure between \$500,000 and \$1 million seed funding for year 1 & year 2
- achieve profitability by year 5

- achieve an ROAS greater than 1 by year 5
- implement flexible display into product design by year 5
- 0 reported malfunctions by year 5

- 25% of budget devoted to r&d
- begin manufacturing by the end of year 2
- achieve % market penetration by year 5
- ISO 14000 certification by year 4
- achieve ISO 9001 certification by year 5
- 60% gross profit margin by year 5

- 75% retention rate; 80% employee satisfaction rate
- actual figures vs. forecasted figures

- number of new products introduced
- share of key accounts; number of cooperative efforts



PROJECTED INCOME STATEMENT

revenue	year 1	year 2	year 3	year 4	year 5
market penetration	0.1%	0.3%	0.5%	0.7%	0.9%
total revenue	\$5,370,000	\$16,290,000	\$21,720,000	\$27,150,000	\$35,295,000
COGS					
manufacturing	\$3,535,552	\$10,643,874	\$14,068,424	\$18,178,301	\$24,385,269
logistics (10% of manufacturing cost for year 1&2; 6% for year 3, 4, 5)	\$353,555	\$1,064,387	\$844,105	\$1,090,698	\$1,463,116
customs (5% of manufacturing cost)	\$176,778	\$532,194	\$703,421	\$908,915	\$1,219,263
distribution (25% of manufacturing cost)	\$883,888	\$2,660,968	\$3,517,106	\$4,544,575	\$6,096,317
MKTG. materials	\$600,000	\$200,000	\$100,000	\$100,000	\$100,000
web site design/maint.	\$8,000	\$1,000	\$1,000	\$1,000	\$1,000
total COGS	\$5,557,773	\$15,102,423	\$19,234,057	\$24,823,490	\$33,264,966
gross profit	-\$187,773	\$1,187,577	\$2,485,943	\$2,326,510	\$2,030,034
G&A					
engineer (2)	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
graphic designer/marketing (1)	\$36,000	\$36,000	\$36,000	\$36,000	\$36,000
design (2)	\$36,000	\$36,000	\$36,000	\$36,000	\$36,000
business manager	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000
legal and licensing	\$100,000	\$25,000	\$25,000	\$25,000	\$25,000
accounting	\$500	\$500	\$500	\$500	\$500
g&a allocated rent	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
travel	\$10,000	\$10,000	\$5,000	\$5,000	\$5,000
insurance	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
professional services	\$50,000	\$20,000	\$20,000	\$20,000	\$20,000
office equipment	\$6,000	\$1,000	\$1,000	\$1,000	\$1,000
postage/courier	\$250	\$250	\$250	\$250	\$250
total	\$216,750	\$106,750	\$101,750	\$101,750	\$101,750
EBITDA	-\$404,523	\$1,080,827	\$2,384,193	\$2,224,760	\$1,928,284
depreciation	\$0	\$0	\$0	\$0	\$0
interest	\$0	\$0	\$0	\$0	\$0
taxes (assuming 34% tax rate)	\$0	\$367,481	\$810,626	\$756,419	\$655,617
net income	-\$404,523	\$713,346	\$1,573,567	\$1,468,342	\$1,272,668

BALANCE SHEET

	year 1	year 2	year 3	year 4	year 5
assets					
cash	-\$404,523	\$713,346	\$1,573,567	\$1,468,342	\$1,272,668
equipment	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000
less depreciation	\$0	\$0	\$0	\$0	\$0
total equipment	\$210,000	\$210,000	\$210,000	\$210,000	\$210,000
total assets	-\$194,523	\$923,346	\$1,783,567	\$1,678,342	\$1,482,668
liabilities					
notes payable	\$0	\$0	\$0	\$0	\$0
less principal paid	\$0	\$0	\$0	\$0	\$0
equity					
owner's equity	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
retained earnings	-\$404,523	\$713,346	\$1,573,567	\$1,468,342	\$1,272,668
total liabilities + equity	\$95,477	\$1,213,346	\$2,073,567	\$1,968,342	\$1,772,668

CASH FLOWS

cash flow from operations					
income from operations	-\$404,523	\$713,346	\$1,573,567	\$1,468,342	\$1,272,668
add depreciation	\$0	\$0	\$0	\$0	\$0
net cash from operations	-\$404,523	\$713,346	\$1,573,567	\$1,468,342	\$1,272,668
cash flow from investing					
(increase) decrease machinery	\$500,000	\$0	\$0	\$0	\$0
net cash from investing	\$500,000	\$0	\$0	\$0	\$0
cash flow from financing					
(decrease) increase LTD	\$0	\$0	\$0	\$0	\$0
(decrease) increase LTD	\$0	\$0	\$0	\$0	\$0
(redemption) issuance common stock	\$500,000	\$0	\$0	\$0	\$0
net cash from financing	\$500,000	\$0	\$0	\$0	\$0
net increase (decrease) in cash	\$595,477	\$713,346	\$1,573,567	\$1,468,342	\$1,272,668
beginning cash	\$0	\$595,477	\$1,308,822	\$2,882,390	\$4,350,732
ending cash	\$595,477	\$1,308,822	\$2,882,390	\$4,350,732	\$5,623,399

SALES FORECAST	item	year 1	year 2	year 3	year 4	year 5	total	percentage
	units to gov't	1,678	6,316	10,435	13,483	22,609	54,521	
	price/unit for gov't*	\$501	\$428	\$345	\$334	\$259		
	income from gov't	\$840,000	\$2,700,000	\$3,600,000	\$4,500,000	\$5,850,000	\$17,490,000	16.53%
	units direct to commercial	4,196	15,789	26,087	33,708	56,522	136,302	
	price/unit for direct to comm.	\$715	570	460	445	345		
	income from direct to comm.	\$3,000,000	\$9,000,000	\$12,000,000	\$15,000,000	\$19,500,000	\$58,500,000	55.28%
	units to education	2517	9474	15652	20225	33913	81,781	
	price/unit for education*	\$608	\$485	\$391	\$378	\$293		
	income from education	\$1,530,000	\$4,590,000	\$6,120,000	\$7,650,000	\$9,945,000	\$29,835,000	28.19%
gross	\$5,370,000	\$16,290,000	\$21,720,000	\$27,150,000	\$35,295,000	\$105,825,000	100.00%	
market penetration**	0.2%	0.6%	0.8%	1.0%	1.3%			
total units sold***	8,392	31,579	52,174	67,416	13,043			
cost	\$421.32	\$337.06	\$269.64	\$269.64	\$215.72			
mark up	70%	70%	70%	65%	60%			
price after mark up	\$716.24	\$573.00	\$458.40	\$444.91	\$345.15			
round up	\$715.00	\$570.00	\$460.00	\$445.00	\$345.00			
cost	\$421.32	\$337.06	\$269.64	\$269.64	\$215.72			
supplier discount****	0%	20%	20%	20%	20%			

*assumption: explore is offered to the government at a 25% discounted price and to educational institutions at a 15% discounted price.

** assumption: market penetration figures based on similar companies within the fire alarm industry

*** assumption: units sold based on market penetration of \$3 billion fire alarm industry divided by price

**** assumption: cost will decrease because suppliers will become better at their job and use economies of scale

business owners, board of directors, top management, facility managers

SEARCH what will help us in creating a safe and productive work environment for my employees?
how will we provide the best human resource department in my industry?

PURCHASE where is this product or service located?
what does it take to implement the system?
what does it cost?

EVALUATE was it worth the expense?
did it work when needed?
was the outcome better than without it?

SELECTION will these reasonably protect or save our employees if harm were to occur?
what does the product or service require to operate?
is it in line with our mission and goals?

USE does it do what we thought it would?
do our employees know how to use it or what it does?

DISPOSE what happens if a better product or service is desired?
can it be recycled in an environmentally sustainable way?

public officials

SEARCH what safety solutions will protect the public in an emergency situation?
is the solution within our budget?

PURCHASE what does it take to implement the system?
how long would it take to implement?

EVALUATE did it meet or exceed cost-benefit analysis?
was it reliable?

SELECTION how many people will it help in an emergency situation?
how much does it cost to maintain?

USE would the public be able to understand and operate the system?

DISPOSE what externalities does it have associated with future disposal?
can it be recycled in an environmentally stable way?

THE PRODUCT NEEDS TO BE MANUFACTURED ONLY WHEN DEMANDED

HOW DOES NATURE DO IT?

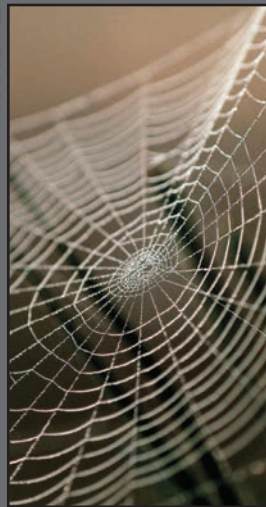
REGULATION



**SNAKES
VENOM**

snakes regulate the amount of venom produced and injected depending on prey size and/or the nature of their attack

CONTROL



**SPIDER
SILK**

spiders manufacture just enough spider silk as needed to build their webs.

MANAGEMENT



**CELLULAR
REPRODUCTION**

through mitosis most human cells are frequently reproduced and replaced during the life of an individual for growth or repair

