



hello

**Are you ready
to begin?**





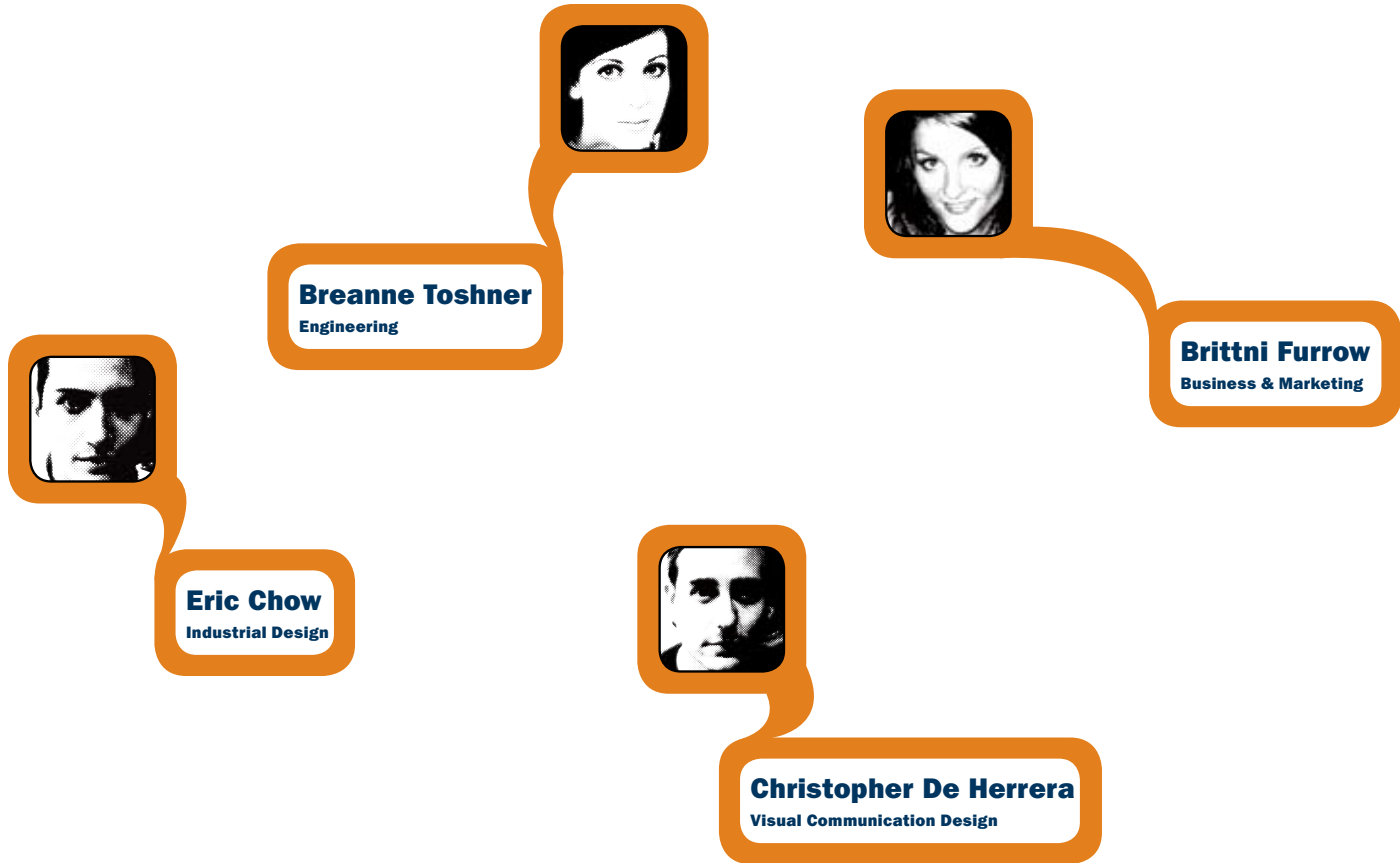
Glimpse

Access Life

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JUVENTUS





With the development of the Intel Centrino Mobile technology platform, Intel has restructured to approach the healthcare market with a Digital Health Group division. Taking advantage of its core competency as a technology innovator, Digital Health Group plans to bring Intel's knowledge and technical expertise to improve the healthcare experience. The group plans to work on effective computer and communications products and solutions to improve health care, while combining the information technology industry and the health care industry. The Digital Health Group's Health Research & Innovation Team is one of the largest teams of social scientists and engineers in the industry. The team addresses unmet healthcare needs by talking to health care professionals such as doctors, nurses, patients, administrators, caregivers etc. They are developing software and hardware along with standards and services to create healthcare platforms that deliver new technology-enabled experiences that meet the needs recognized and identified by the team.

Intel has recognized growth in chronic health conditions and the aging population as two major problems that will burden the health care system in the future. They have narrowed their focus to 3 main categories in the health industry: Healthcare IT, Personal Health Platforms, Biomed/Life Sciences.

Connecting People and Information for Better Health

This product satisfies the desire of the elder to have a safe yet convenient life while focusing on the elder's issues with memory and taking medication.

THE PROBLEM

The Census Bureau reports that the elderly population will more than double between now and the year 2050 to 80 million elders while simultaneously life expectancy will continue to rise, leaving millions of elders facing multiple chronic illnesses, disabilities, and dependencies on medication. Therefore, the proper management of medication intake is crucial for the well being of this large population segment.

Glimpse, a redesign of the modern day mirror, provides interactive medication management and organizational support in the convenience of the bathroom environment. Through a touch screen interface, Glimpse is designed as a bathroom mirror with PC components that aid the elderly and the chronically ill in proper medication management to eliminate errors associated with medication intake.

USER PROFILE

Increasing life expectancy has resulted in tremendous growth of the elderly population. According to the U.S. Department of Commerce, large portions of the baby boomer generation will enter the elderly phase of life between 2010 and 2030 causing much of this growth. While high growth rates are causing a change in the size of the elder user segment, the characteristics of the user segment are also changing. A segment that was once overall coined as poor is now recognized by the U.S. Department of commerce as consisting of a variety of incomes, recognizing that a wealthy elder segment does exist. Historical data also indicates that those that have recently entered their elder years and those whom will soon enter have high levels of education, with a large portion of them holding college degrees. Additionally, the U.S. Department of Commerce recognizes that the elder population is becoming more ethnically diverse, predicting two in ten elders in the future to be of a non-white ethnicity.

The baby boomer generation, as another user segment, has taken a very

proactive approach to medicine. They are personally seeking information and technologies that will prevent implications of old age. These users hold discretionary funds and don't mind paying for medical processes not covered by most health insurance. This generation is looking to actively participate in health management while accepting the higher costs.





Product Design

Design Language Definition

SANITARY NEO-MODERN



clean simplicity



clean ceramic



treatment of form



treatment of materials

Product Benchmarking

VANITIES/MIRRORS



Modern



Traditional

DAILY SCHEDULING AIDS/ PERSONAL ORGANIZERS



Digital



Analog

PERSONAL COMPUTERS



High-end



Low-end





Human Interaction Considerations

USAGE SCENARIOS AND FEATURE PLACEMENT



medication dispensing



refilling prescriptions

Dispensing medicine:

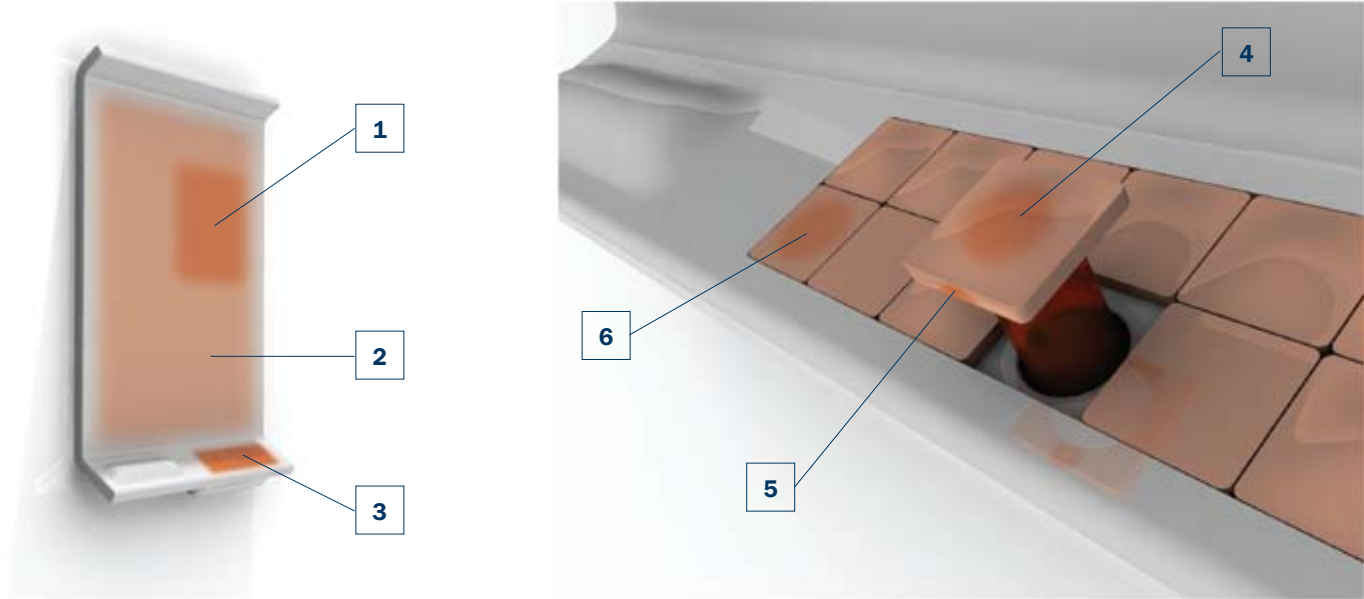
- 1: login / verify identity with thumb scan
- 2: check schedule / select desired medication
- 3: cap of correct bottle lights up / press it down
- 4: when released bottle pops up
- 5: remove desired bottle from Glimpse
- 6: pop open cap with thumb / take medication

Refilling prescription:

- 1: remove empty bottle
detach Glimpse cap [keep] / discard bottle
- 2: scan new bottle from pharmacy's barcode
- 3: activate Glimpse cap by holding near scanner
- 4: replace pharmacy's cap with Glimpse cap
- 5: place bottle anywhere in Glimpse

Human Interaction Considerations

PRODUCT INTERACTION HOTSPOTS



Interaction intensity map global view:

- 1: Primary control zone, [visual/cognitive physical] commonly used functions lie within this area to reduce arm fatigue
- 2: Active area, [visual/cognitive/physical] less repetitive or auxiliary functions live here
- 3: Medication retrieval area, [visual/physical] medication and ID hardware lives here

Interaction intensity map details:

- 4: LED indicator and press area, [visual/physical] LED in cap indicate correct bottle. User presses the cap in to activate popup mech.
- 5: Gripping area, [physical] area the user will use to pull the bottle out
- 6: Barcode / ID scanner module, [visual/physical] user scans new medication bottle here as well as verifying identity with thumbprint scan

Human Interaction Considerations

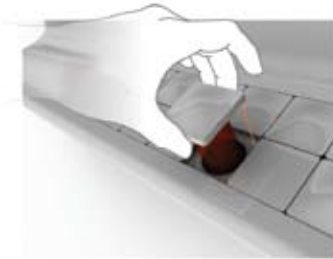
MEASUREMENT METHODS



Data on size of 90th percentile male thumbs was looked up in Dreyfuss



Area for critical information is bounded by the highest point in 5th percentile female and lowest point in 90th percentile male visual cone



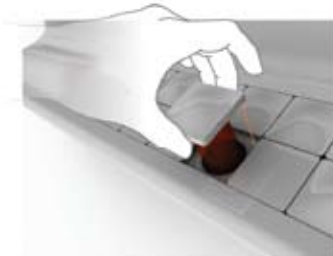
Clearance size was based on single finger pull tab guidelines, pull force was based on *5th percentile female strength



Thumb abductor *strength data was used to determine max 'pop-open' force for cap



*Maximum torque allowable for high torque knob guidelines were used to set upper limit for force required to remove cap



Although not represented by a metric the requirement for ease of fitting bottle back into tube was considered

References pop cap:
finger space / twist force / pull force: measure of man and woman — dreyfuss
abductor force:
<http://www.orthosupersite.com/view.asp?rID=2367>




References barcode / ID scanner:
thumb size: measure of man and woman — dreyfuss

References touchscreen:
display area / range of movement:
architectural graphic standards — ramsey / sleeper
arm extension endurance 50th male: occupational biomechanics — chaffin age modifier of 50%: www.us-ergo.com

*note: all metrics are based on data for differently abled persons

Human Interaction Considerations

USER INTERACTION NEEDS

Stage	Part Affected	Activity	Needs	Solution	Example
Pre-op <ul style="list-style-type: none"> logging in refilling meds setting up 	<ul style="list-style-type: none"> ID scanner/UI cap/scanner UI 	<ul style="list-style-type: none"> wake up system identify self identify meds synchronize cap load schedule 	<ul style="list-style-type: none"> consistency speed easy simple one step 	<ul style="list-style-type: none"> biometric scan LED indicators clear instructions clear interface 	
Op <ul style="list-style-type: none"> check sched/ select meds. find bottle retrieve bottle replace bottle 	<ul style="list-style-type: none"> touchscreen/UI Glimpse cap internal actuator holding tube 	<ul style="list-style-type: none"> nav. menus find which cap pops up bottle fit bottle into tube 	<ul style="list-style-type: none"> intuitive interface obviousness reliable ease of use one step 	<ul style="list-style-type: none"> simple GUI LED light-up cap touch latch beveled well 	
Post-op <ul style="list-style-type: none"> securing info cleaning 	<ul style="list-style-type: none"> touchscreen/UI cap/body/ tube assembly 	<ul style="list-style-type: none"> logging out identify self disinfect wipe down 	<ul style="list-style-type: none"> easy few false positives easy to sanitize water beads up simple one step 	<ul style="list-style-type: none"> single open hand wipe across area materials choices hydrophobic coat clear interface 	

Pre-operational tasks:

Pre-operational tasks will include everything leading up to the normal daily operation of the product. This will include setup, refilling, and information management.

Operational tasks:

Tasks considered to be 'operational' will be limited to those that are part of the dispensation of medication only.

Post-operational tasks:

Post-operational tasks will include all that take place between the regular operational phases. This includes cleaning and maintenance.

Human Interaction Considerations

PHYSICAL MANIPULATION METRICS

Part	Action	Metric	Value (Desired)	Solution
Pop cap	-pulling out	-finger space -pull force	>0.70 inches <11 N	pop up mechanism throw >1" low friction materials
	-unscrewing	-twist force -abductor	<1.15 N·m	sell optional leverage tool
	-flip open	force(thumb) -tab width	<2 N >.20 inches	snap releases with less force allow this much lip on the cap
Barcode/ID Scanner	-scan thumb	-pad width -pad length	>1.0 inches >1.5 inches	allow for this much space
Touchscreen/information display area	-primary info display	-height top -height bottom	~72 inches ~48 inches	position primary information in this area
	-interface navigation	-range of movement	v <30 inches h <36 inches center v ~50"	keep control of all primary tasks within this area
		-total duration	<2.5 minutes	allow complete use in this time

References pop cap:
finger space / twist force / pull force: measure of man and woman — dreyfuss
abductor force:
<http://www.orthosupersite.com/view.asp?rID=2367>

References barcode / ID scanner:
thumb size: measure of man and woman — dreyfuss

References touchscreen:
display area / range of movement:
architectural graphic standards — ramsey / sleeper
arm extension endurance 50th male: occupational biomechanics — chaffin age modifier of 50%: www.us-ergo.com

Ecodesign Strategy

GLOBAL STEWARDSHIP



prolonging lifecycle



reducing per unit impact

Longevity

- Modularity means individual parts can be replaced
- Upgradeable components delays obsolescence
- Customizable products encourage the user to keep their personalized objects longer
- Timeless design

Reduction of impact

- Responsible sourcing of materials
- Reducing energy consumption both during manufacture and use
- Reducing production emissions and waste by-product
- Using recycled / recyclable materials
- Prepaid take-back for end of product life





Engineering

ENGINEERING SUMMARY

The group met to discuss various stakeholder needs which were then translated into preliminary technical specifications, including the decision to use a capacitive touch-screen for simple user interaction. This screen will function in junction with a half-mirror, and LCD monitor, and a minimalized PC (containing CPU, limited memory, RAM, ROM, BIOS, and caching) to provide the user with a complete operational package while remaining a nominally-sized system to reduce its heat, size and weight. Necessary testing will include over exposure to heat, humidity, and touch stress testing to verify the endurance of the system.

TECHNICAL RESEARCH SUMMARY

"Barcode." Wikipedia.Com. 15 Nov. 2007 <<http://en.wikipedia.org/wiki/Barcode>>.

A barcode is a machine-readable representation of information (usually dark ink on a light background to create high and low reflectance which is converted to 1s and 0s). Today in addition to utilizing patterns of spacing and width, barcodes use patterns of dots, concentric circles, and text codes hidden within images. It is possible that this technology will be used in addition to RFID, depending on cost, in order to provide the most reliable identification of prescriptions. Although this technology has been around since the 1950s, it is likely that to save time and frustration, this will be a portion of Glimpse that, if represented this semester, will need to be purchased rather than produced by the group.

Brain, Marshall, and Tracy V. Wilson. "How WiFi Works." HowStuffWorks. 30 Apr. 2001. 04 Feb. 2008 <<http://computer.howstuffworks.com/wireless-network.htm>>.

As is obvious from the title, this article explains how a wireless network operates. It is important for us to understand and utilize this technology so that when a user scans his/her prescriptions into

Glimpse, the system is able to access an online database, locate the proper medicine, and derive from the database essential information. Because we are planning to install a minimalized PC into the mirror, we will implement a wireless adapter into the PC which will operate off the user's home router to connect to the internet.

Konomi. "Miragraphy - RFID Enabled Mirror." Ubiks. Net. 20 July 2005. 04 Feb. 2008 <<http://ubiks.net/local/blog/jmt/archives3/004103.html>>.

Miragraphy, is a product created by Hitachi (a Japanese corporation that produces various appliances and electronic devices). It combines a half mirror and a diffusion film to directly display digital information (text, photos, video, television shows, websites, flash movies etc.) on a mirror surface using an LCD projector. The Miragraphy technology also integrates sensors, RFID readers, barcode readers, cameras, etc. So, the mirror can automatically respond when people are around and personalize digital contents based on their sensed identities. Hitachi intends to market this Miragraphy device to restaurants, bars, hotels, train stations, airports, sports clubs, show windows, designer clothing shops, and accessory shops.

"Light Diffusion Film LIGHT-UP." KIMOTO. 2007. 04 Feb. 2008 <<http://www.kimoto.co.jp/english/products/light.html>>.

LIGHT-UP is a series of diffusion films for use in LCD backlit units. The most important roles of diffusion films are to produce even brightness all over the display and to re-direct as much light as possible towards the viewer. Multi layered diffusion films often make the monitor brighter. LIGHT-UP's antistatic treatment prevents dust from attaching to the film during use. This website also provides various technical data which will be helpful when choosing exactly how we plan to implement the diffusion film into our model.

McNulty, Z. "Miragraphy, Hitachi's "in-Mirror" Display." Tech Japan. 19 July 2008. 04 Feb. 2008 <<http://www.techjapan.com/Article1069.html>>.

Hitachi Mfg. Corporation is responsible for developing a new mirror-type display called Miragraphy. The company foresees it being used as a commercial-level piece of equipment at storefronts, or at airports, although our intentions are obviously to modify this technology so that it is appropriate for use in a bathroom situation. Behind the mirrored side of the object, lies a PC with images that can be outputted to a projector. Then, the projector will use the reverse of the mirror

(which is a half-mirror that has diffusion film pasted on it) as a screen.

The system measures 600 x 430 x 1775mm (W x D x H). It weighs 120kg. The image display area, however, is not the entire mirror -- from the floor, it is at a height of 1160mm and measures 375 x 500mm (W x H). It has a power consumption of 320W. The dimensions are a factor that we would like to seriously alter due to the fact that we want the display to cover more of the mirror. There is also the issue of possibly needing additional projectors.

MAKE VS. BUY

In-House vs. Vendor Bought

Component	Make	Buy
Half-Silvered Mirror		X
Microprocessor	X	
Controller (for touch screen)	X	
Capacitive Touch Screen		X
Additional integrated circuitry	X	
Frame		X
LCD Screen		X
Wireless Transmitter		X
Barcode Reader		X
Pill bottle container		X

Factors considered:

- Financial
- Direct costs
- Fixed costs
- Capital Costs
- Recurring Costs
- Disposal of salvage value at the end

Time

We could make some of these things but it would take longer (touch screen could be done through partnership with Phillips for example)

Strategic

Off the shelf solution available? Yes!

1. Define service, process or product that will be outsourced
2. Calculate in house costs avoided
3. Determine cost of outsourcing
4. Compare cost saving from outsourcing against costs incurred.

"Radio-Frequency Identification." Wikipedia.Com. 15 Nov. 2007 <<http://en.wikipedia.org/wiki/RFID>>.

Radio-frequency identification (RFID) is an automatic identification method, which relies on storing and remotely retrieving data using devices called RFID tags or transponders. Most RFID tags contain at least two parts. One is an integrated circuit for storing and processing information, modulating and demodulating a (RF) signal, and other specialized functions. The second is an antenna for receiving and transmitting the signal. A technology called chipless RFID allows for discrete identification of tags without an integrated circuit, thereby allowing tags to be printed directly onto assets at a lower cost than traditional tags. Again if we decide to implement an RFID reader into Glimpse, it is likely we will choose to purchase this device rather than build it ourselves. Though the technology is not extremely advanced, it is beyond our time constraints this semester.

Sukeda, Hiroko, Youichi Horry, Yukinobu Maruyama, and Takeshi Hoshino. "Information-Accessing Furniture To." *leeeexplore.ieee.Org*. 28 Dec. 2005. IEEE. 04 Feb. 2008 <<http://leeeexplore.ieee.org/iel5/30/33724/01605044.pdf?arnumber=1605044>>.

This article was by far the most helpful document found throughout the research. It clearly describes the means by which Hitachi was able to produce their mirror display. "Miragraphy" is an application that can be used as a mirror. Light from a projector is displayed on a half mirror with a diffusion film applied to its back surface. Users can see images from the

projector superimposed over their own images reflected in the mirror. It also introduces the possibility of adding a camera to do things like take pictures and store data regarding outfits or hairdos worn earlier in the week.

"Top 200 Drugs." RxList.Com. 2008. RxList : the Internet Drug Index. 04 Feb. 2008 <<http://www.rxlist.com/script/main/hp.asp>>.

The Glimpse system, when completing most medicinally-related tasks requires access to a reliable online prescription database. When fully implemented, it is likely this database would be the same database accessed by pharmacies in order to provide the patient with the most up-to-date and thorough instructions of when to take their medication, what to avoid, what side-effects can be expected, etc. Because we presently do not have access to this database, RxList.com does a great job of summarizing this same data. The only problem I foresee with this database is that too much information is given and we will require a computer programmer with excellent skills in order to drive the PC to request only certain, very important data. This online database also provides news information regarding important changes or issues with drugs or pharmacy companies. Ideally this is what we would like to connect to in order to provide the user with the most reliable information.

Needs to Specs

Need	Metric	Value	Units
Uses wireless transmitter to access internet prescription database	WiFi range	> 120	ft
Minimize energy Consumption	Use of efficient electronics	> 80	% efficient
Reduce heat in the system	Use of efficient electronics	> 80	% efficient
Fits in standard bathroom	length	4 – 6	ft
	width	3 – 4	ft
	depth	0 – 2	ft
Operates within a bathromm	Operating Voltage	110 - 120	volts
Can be securely hung in bathroom	Weight	< 55	lbs
Words are clearly visible	Color of words	black, green, blue	colors used
Words are an adequate size to be easily read	Size of letters	> 24	point font
System uses a light sensor to adjust to sleep mode when not in use	Wavelength detected by Passive Infrared (PIR)	8 – 12	μm
Adjustable alert system which can be easily heard without being too loud	Volume Level	50 – 100	dB
Sturdy and stable system	Weight focused on lower or back-side of system	> 60	%
Rounded Edges (to prevent injury from sharp edges)	Radius	> 1/16	inch
Clear and concise pharmaceutical instructions and information	Number of words per line	< 15	words
	Number of lines	< 8	lines
Provides simple interaction (through capacitive touch screen technology)	Speed of Response	15 – 24	ms
	Light Transmission	75	%
	Touch Reslolution	> 50	per inch
	Lifespan	> 20 million	touches

FUNCTION	TESTING PLAN
	Electrical tests before/during/after prolonged heat exposure (65C)
Performs in bathroom environment	Electrical tests before/during/after prolonged humidity exposure (80%)
	Electrical effects of simultaneous heat and humidity exposure
Able to be hung on bathroom wall	<p>Locate center of gravity (alter subsystem placement if necessary and retest)</p> <p>Measure weight (verify < 55 lbs)</p>
Energy efficient	Using EPRI (Electrical Power Research Institute) spec calculations, verify total system performs at >70%
Touch-Screen Lifespan	<p>Stress-test mechanically, electrically comparing system accuracy and light transmission.</p> <p>Repeat the previous test while simulataneously exposing system to high temperature (65C) and humidity (80%)</p>

DFM: DESIGN FOR MANUFACTURING

Creating ease in assembly

- Using snap fits instead of fasteners
- Using common (all the same throughout) fasteners to reduce tool changes
- Incorporating self-aligning parts (with tabs or shapes that only go together one way)

Creating ease in manufacturing

- Reducing part size (using the

multiple instances for the same part instead of one big part) to reduce the tooling costs.

- Using identical parts as much as possible to reduce the number of different molds.
- Building a series of rather than building the device in one piece (welding or fastening two or more things together instead of having a single part)

- Creating single material parts (avoiding over molding or co-molded part).

Reduction of unique or custom-made components

- Utilizing off the shelf components where-ever possible.
- Designing to reduce the number of special processes or supplier (using off-the-shelf components from easily accessible manufacturers)

Enhanced BOM

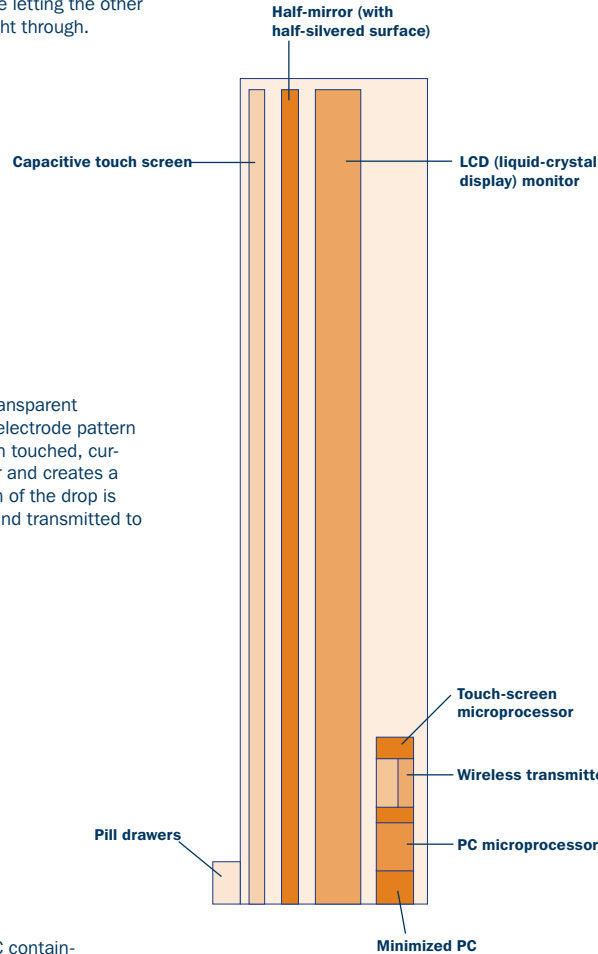
Component	Material	Process
Half-Silvered Mirror	Glass	Standard (silver sputtering)
Microprocessor, Controller, Integrated Circuitry	Silicon, plastics, metals (aluminum, copper)	Imaging, Deposition, Etching, Programming
Frame	Aluminum plate	Die cast
LCD Screen	Glass plates, liquid crystal materials	Standard (layering, PECVD, sputter steps, hard coat, polyimide, and spacer application, etc.)
Wireless Transmitter	Silicon, plastics, metals (aluminum, copper)	Standard
Barcode Reader	Silicon, plastics, metals (aluminum, copper)	Standard
Pill bottle container	Polycarbonate (PC)	Custom injection-molding (outsourced)

Glimpse has been designed to utilize and combine the most up-to-date technologies without having to reinvent or greatly modify them. This means that most products incorporated in Glimpse can be bought (off-the-shelf, as is) and only the assembly will be unique in process. The processes used to manufacture the off-the-shelf products for many of the components as well as the material and finish applied to these components have been perfected to produce the fastest performing and environmentally friendly products possible. Therefore we will not be modifying these processes.

Failure Modes and Effects Analysis (FMEA) Form

	Process Step/ Input	Potential Failure Mode	Potential Failure Effects	Severity	Potential Causes	Actions Recommended
	What is the process step or input being investigated?	What can go wrong with the process step or input?	What is the impact on the key customer output variables or on internal requirements?		What are the root causes for the process step or input going wrong?	What are the actions for reducing the occurrence of the cause or improving detectability?
1	Store and update schedule	Failure to remain updated, Computer malfunction	User doesn't have access to schedule	3	Poor programming, miscommunication between computer and glimpse, power outage	Consistent system checks, verifiable tests prior to market
2	Store and update medicinal needs	Failure to remain updated, Computer malfunction	User doesn't have access to medicine	5	Poor programming, miscommunication between computer and glimpse, power outage, inability to connect with pharmacy	Verify wi-fi connection, possible user update acknowledgement request
3	Alert user to take medicine	Not audible, innacuracy with time, failure to alert	User does not take medicine at prescribed time	4	Speaker malfunction, volume settings, LED failure, miscommunication between computer and Glimpse, Wi-fi disconnect	Small intermediate tests prior to production, alerts to user to send in product to replace LEDs after x-time (to avoid burnout)
4	Display information	Absence of clarity, brightness, legible colors, size of fonts	User cannot read the information and does not have access to important prescription information	4	Poor settings, difficult to change settings, poor programming	User surveys prior to release to market. (Observe users actually using product to make necessary adjustments)
5	Operate using touch screen technology	Screen doesn't respond to user touch accurately	User is unable to interact with the Glimpse system	4	Circuit issues, lack of discharge of caps or leakage when unnecessary	Verifiable tests prior to release. Monthly user checks.
6	Alert user to attend to their appointments	Alert does not activate, or alert is not audible	User misses scheduled appointments, experiences stress and anxiety	4	Communication failure between computer and glimpse, alert not audible, speaker failure etc.	Verify wi-fi connection
8	Keep lit when necessary	Power outage, in standby mode at wrong time	User cannot read screen or identify which medication to take	4	LED failure, standby settings	Verify user operation is simple and clear through user surveys and observation prior to release.
9	Conserve energy by being in standby mode when not in use	Runs when not in use	Wastes energy	3	Poor programming, standby wait time too long, issues with user operation	Verifiable tests prior to release. Monthly user checks.

Has a reflective coating applied in a thin, sparse layer and reflects half the light that strikes its surface, while letting the other half go straight through.



Glass screen with thin, transparent metallic coating. Built-in electrode pattern charges the screen. When touched, current is drawn to the finger and creates a voltage drop. The location of the drop is detected by a controller and transmitted to a computer.

Minimal and simplified PC containing CPU, limited memory, RAM, ROM, BIOS, and caching. Connects to and controlled by PC Microprocessor.

Created from a mirror in back, a piece of glass with a polarizing film on the bottom side, and a common electrode plane made of indium-tin oxide on top, which covers the entire area of the LCD. Above that is the layer of liquid crystal substance, another piece of glass with an electrode in the shape of the rectangle on the bottom and, on top, another polarizing film at a right angle to the first one. The electrode is hooked up to a power source like a battery and when the battery supplies current to the electrodes, the liquid crystals between the common-plane electrode and the rectangular-shaped electrode untwist and block the light in that region from passing through.

Computes the touch location and other information from the touch current signals, then interacts with the host computer which is connected to the monitor.

Translates data into a radio signal and transmits it using an antenna.

Interacts with touch screen microprocessor and causes or selected information to be displayed on the monitor as determined by software in the computer.

Ecological Impact Factor Assessment

Total Impact Factors of our product

Input	Amount	Unit x	Okala Factor Millipoints	Unit =	Okala Impact Millipoints
Half-Silvered Mirror (glass)	10	lbs	8	/lb	80
Integrated Circuitry (RoHS compliant)	1	lb	9200	/lb	9200
Polycarbonate (PC)	5	lbs	36	/lb	180
Power	8	kWhr	12	/kWhr	96
Container Ship	2	ton-mile	2.5	/ton-mile	5
Injection molding	5	lbs	10	/lb	50
Landfill	40	lbs	10	/lb	400

Total Impact/Lifetime = 10,011

(Total impact / lifetime) / (lifetime hours)
= Impact / hour

Assume 12 hr/day use for 10 years, life-time = 44,000 hours

$(10,011/44,000) * 1000\text{hrs} = 228$

OKALA MILLIPOINTS PER 1,000 hrs = 228

REASONABLE AND JUSTIFIABLE SOCIAL AND ENVIRONMENTAL CLAIMS

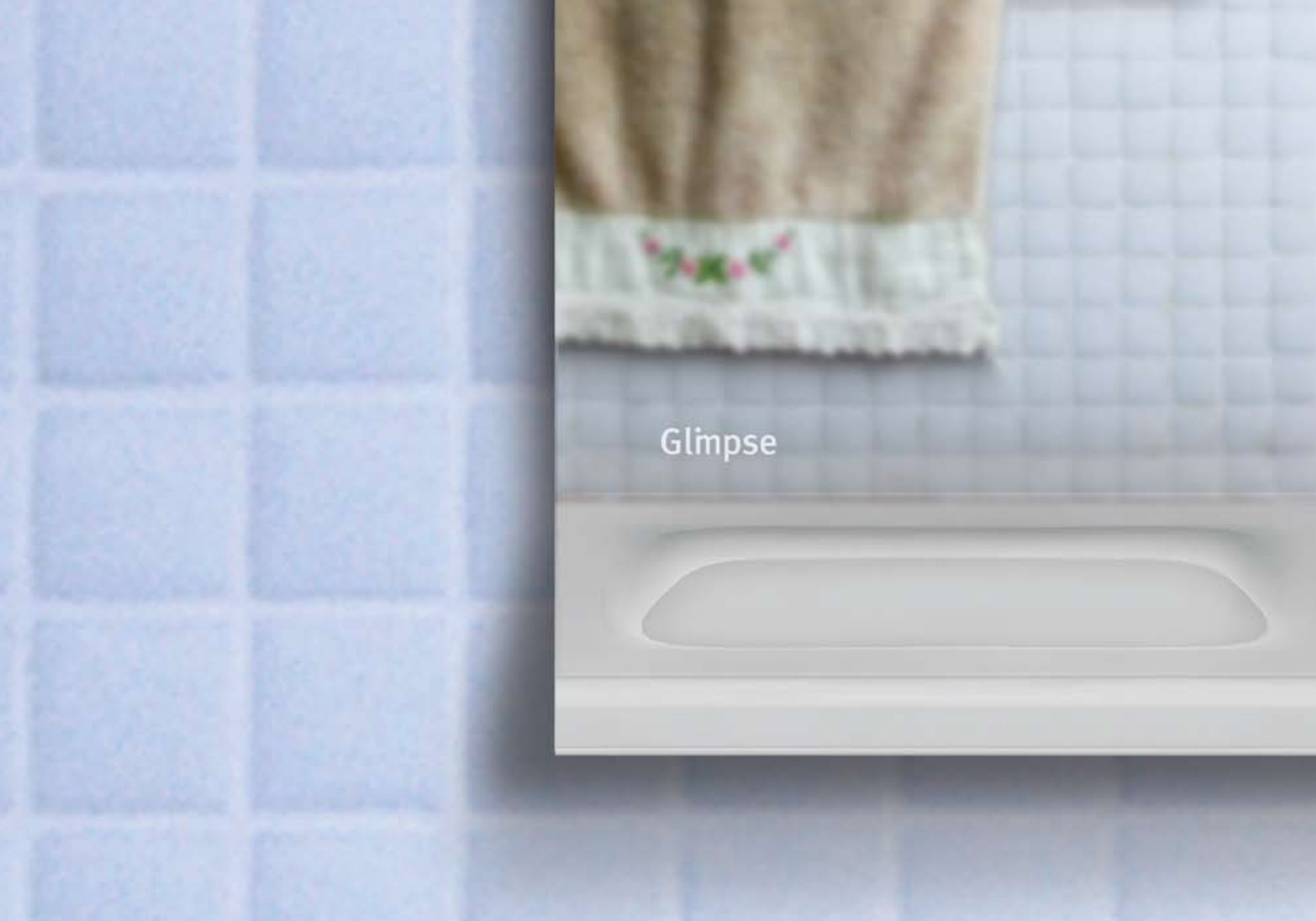
Various aspects designed into Glimpse will impact both society and the environment in a positive way.

Positive social impacts include:

- Providing elders with readily available prescription drug information services
- Assisting elders in everyday medication intake
- Assisting elders with maintaining daily schedules
- Keeping elders connected socially

Positive environmental impacts include:

- Extended product lifetime (apx 10 years)
- Replaceable and easily updated PC means entire product replacement not necessary
- Minimal thickness and use of recycled materials where possible
- Designed to work with presently-used prescription packaging (decreasing additional packaging and waste)
- Possible buy back program for used medication containers
- Reduce energy usage by implementing mechanical (rather than electrical) features where possible, e.g. pop-locks with magnets.

A close-up photograph of a window blind. The blind is a light-colored, possibly white or cream, material with a recessed, elongated handle. Above the blind, a portion of a fabric valance is visible. The valance is light-colored with a delicate floral embroidery in shades of pink and green. The background is a light blue and white checkered pattern, likely a curtain or wall paper. The word "Glimpse" is overlaid in white text on the right side of the image.

Glimpse



**Brand Identity
& Interface**



Identity Design & Standards

THE GLIMPSE LOGOTYPE:

Glimpse

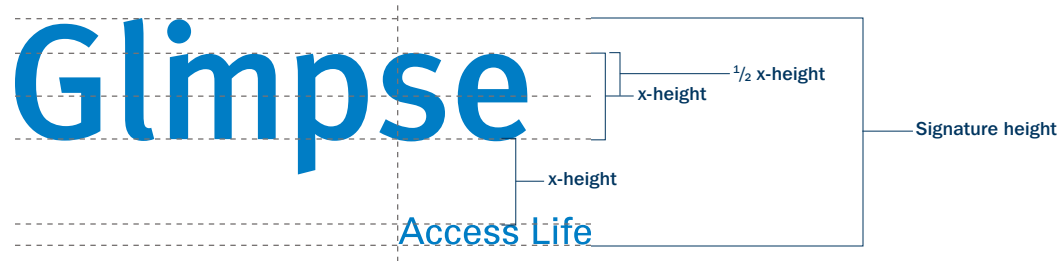
THE GLIMPSE LOGOTYPE WITH TAGLINE:

Glimpse

Access Life

The official logo for the Glimpse interface is the name of the product produced in a stylized font, which is called a logotype. When the Glimpse logotype is combined with the tagline, “Access Life,” it is referred to as the signature. The logotype should never be retyped, reformatted, or adjusted (see Incorrect usages of logo). There is no accompanying graphic mark, and one should not be introduced into the logo signature.

The signature configurations shown on this page are the only approved configurations of the signature. No other configurations are allowed.



The area around the Glimpse logotype and signature is called the area of isolation. There should be no other graphics, type, titles, or background color changes within this space. The area of isolation is equal to one-half the x-height defined above.

Glimpse

Minimum sizing for the Glimpse logotype is $\frac{5}{16}$ inch when the tagline is absent.

Glimpse

Access Life

When the Glimpse logotype is presented with the tagline (combined to produce the Glimpse signature), the minimum signature height is $\frac{1}{2}$ inch.

The official color of the Glimpse logo is known as “Intel Blue.” The logo can only be reproduced in this blue when produced in color. If the logo is to appear on a color background, the colors should not “interfere” with each other. In the case that they do, the reversed version should be used as shown on this page.

The only other approved versions of the Glimpse signature are black and reversed as described on this page.



Official color:
Intel Blue

C: 100
M: 40
Y: 0
K: 0

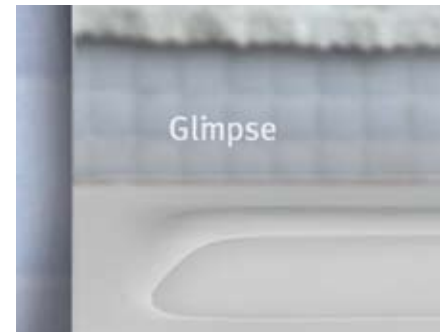
The Glimpse can be shown in solid black when color is not an option. The surface on which it appears should not exceed a color or grayscale value of 50%.

The Glimpse can be shown reversed to white when color is not an option or the surface color competes with the Intel Blue. The surface on which it appears should exceed a color or grayscale value of 50%.

The Glimpse logotype can be reproduced as a screen or frosted white logo on the Glimpse mirror. This is the only time that the Glimpse logotype can be reproduced as a screen or tint.

Glimpse

Glimpse



Unacceptable uses of the brand

The Glimpse logotype should not appear on a color that “competes” with or impedes the legibility of the logo.



The logotype should not be reproduced in any other color or any of the approved interface colors. If the design cannot accommodate the Intel Blue, either the black or reversed versions should be used.



Displaying the Glimpse logotype as a screen tint on printed materials is unacceptable. The only time the logo can be shown as a screen or frosted is on the actual Glimpse mirror.



Recreating or retyping the Glimpse logotype is unacceptable.



Interface Design

Multiple interface designs will be available to Glimpse users through download and as part of peripheral packages. The default interface design that Glimpse will be equipped with is known as “Plastic.”

“PLASTIC”

Friendly, non-technical and brightly colored, this interface design is built to provide a sense of comfort to the user. The shapes are rounded and bubbly, looking like comic word-balloons. Text is thick and clean.

Inspiration is drawn from children’s toys, especially those for toddlers. The goal of Plastic is to put the user at ease. Research has shown that many elders have difficulty navigating a virtual space. The multiple windows, tabs in browsers, and desktop configurations often confuse older computer users. In order to alleviate this confusion and to ensure that all information and elements accessible through the Glimpse interface are easily understood, Plastic employs large type, large button, and window system inspired by comic word-balloons. Windows that are related or were generated from a click or input from the user are connected to the previous window through the use of a “tail.” This tail provides a visual trail that can be easily understood and followed in by the user so that they do not lose track of where they are in the virtual space.



Rounded corners, whimsical design and bright colors present a friendly, non-intimidating interface to the user.



Buttons are large and prominent, actually jutting out from the window so that those with arthritis or poor eye-sight can easily hit them.

The window "tails" provide a clear connection between related windows and ensure that the user does not lose the context of information presented in each window.

Typography is easily readable and high in contrast for those who possess bad eye-sight.

Interface colors are bright and friendly, offering highly saturated hues complemented by softer pastels.



Interface Window Examples



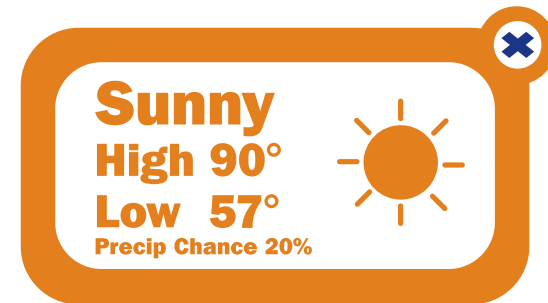
Calendar



Medication alert



Feature buttons



Weather update

The Plastic interface uses the Franklin Gothic font family for all typography. Below are examples of the differences in weight that can be used for interface content. Although not shown, the entire font family is used, including italics, condensed, and light.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz

Brand Benchmarking

The main competitors of Intel in the area of health related technology have varied design languages that define each entity. Blues and cool colors dominate the visual language but a few competitors deviate from that, with mixed results.



GE HEALTHCARE

Ge Healthcare is a division of General Electric that focuses on health-related products. The visual language employed by this GE subsidiary is clean, straightforward and focuses on people instead of products. When products are displayed, they are shown more as pieces of art, rotating on the site to demonstrate the slick, ergonomic design and innovative features. The color palette is sparse, relying on a generous amount of white as negative space and soothing, mild highlight colors.



SAMSUNG

This technology company demonstrates in all of its marketing materials a firm grounding in technological innovation. Their site features a heavy dose of Flash, featuring people walking into the site and interacting with Samsung products as sleek designs flutter about their head.





TOSHIBA

Toshiba's clunky website and overall design demonstrates a company that is happy to cater to the technologically inclined and disinterested in reaching to those who are less so. The site features many products that emphasize technical features, and the many drop-down boxes, menus, and advertisements make this a site less conducive to browsing than searching for a product that the user is already familiar with.



STANLEY SENIOR TECHNOLOGY

Stanley's website for its elder health care products relies heavily on the Stanley brand. Although the yellow color and use of orange help differentiate the Stanley health products from other companies, it deviates from conventional assumptions of "medical technology," looking more like products for a construction company.



MEDTRONIC

Medtronic relies on imagery and design that conjures up notions of technology and medical advancement. The clunky design of their materials, however, undercuts the positive qualities of those designators. As advanced as the products they produce might be, the company has the look of an amateur.



Campaign Strategy and Planning:

The initial roll-out for the Glimpse interactive mirror will begin with an introduction at the major tech shows in the country. Recognizing that one of the most important consumer audiences for the Glimpse are the tech-savvy early adopters that will buy new technological products that provide innovative functions, making a splash at the tech shows is vitally important. The trade booths should provide a number of units that users can interact with and witness the features for themselves.

As time moves forward and the product has garnered some “buzz,” advertising and environmental graphics will be introduced into locations where the target markets will see the practical and medical benefits of the Glimpse: doctors’ offices, pharmacies, and other other locations that deal with medical needs.

The Glimpse website will utilize the latest Flash technology to give the site’s visitor a cursory impression of how the product functions and what features the product possesses. They will be able to bring up the calendar, check messaging in windows that describe the Glimpse’s features, move objects around the virtual mirror, and even bring up RSS feeds that will run across the mirror just as it would in real life.

The website will function as an resource for learning about the Glimpse’s

features, but will not have a function to order the mirror directly from Intel. There will be a section that will instead feature a list of retail stores or businesses that sell the Glimpse to consumers.

Communication Planning:

ADVERTISING PLANS:

Advertising for the Glimpse mirror will initially have two distinct campaigns: one directed to other businesses (B2B) and one directed to consumers (B2C). Both campaigns are based on identifying the initial markets that will provide a strong foundation for the Glimpse’s success before moving to more general consumer markets.

B2B:

Advertising will target three initial business markets for distributing the Glimpse to consumers:

- 1) Housing markets consisting of two types of housing communities:
 - Retirement communities
 - High-end developments
- 2) Elderly care homes
- 3) Hotels

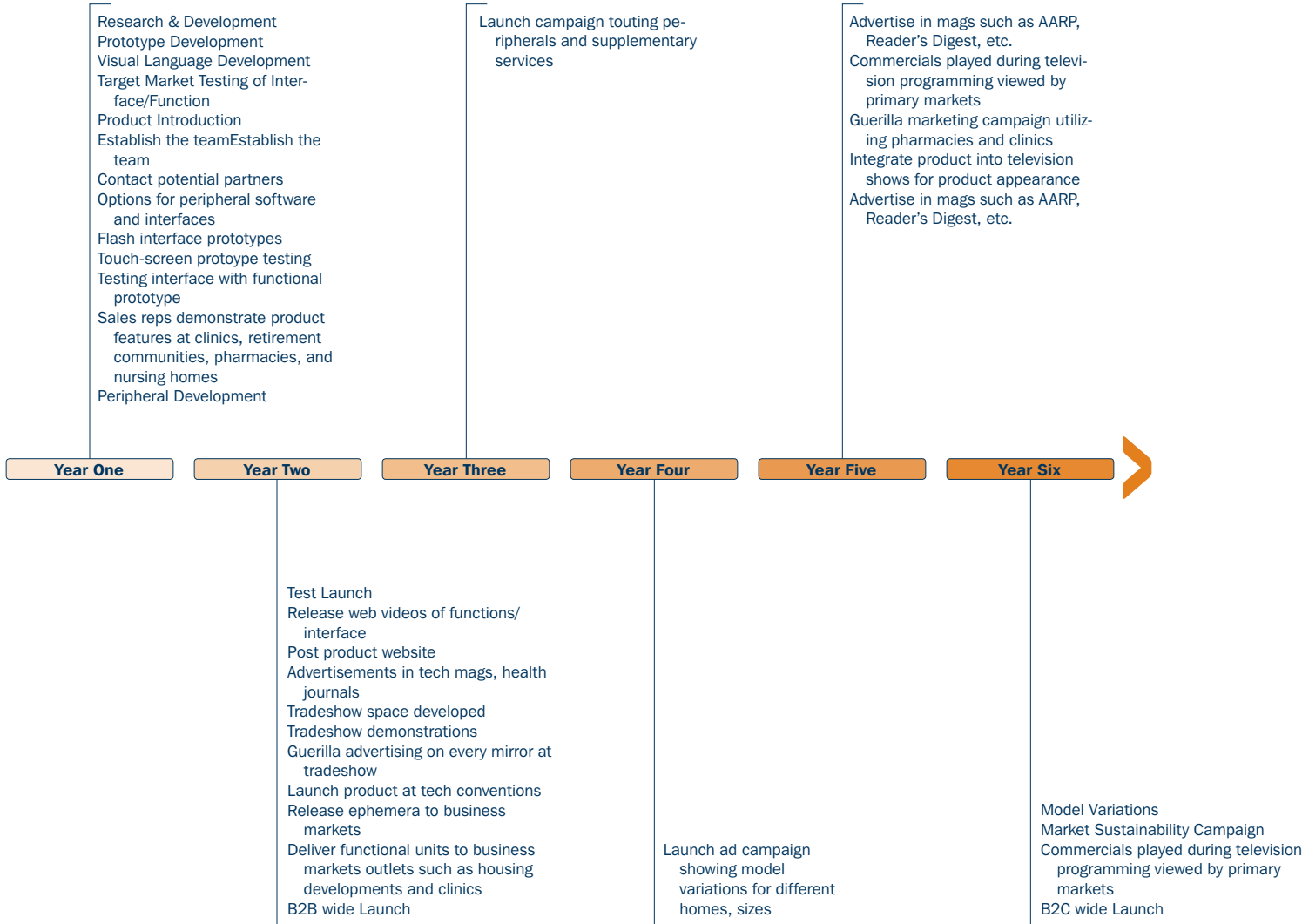
Within these locations will be pamphlets, flyers, and environmental advertising to educate consumers about the Glimpse’s features and highlight ordering information.

B2C:

The consumer markets that will initially be targeted by advertising for the Glimpse will be the following groups:

- 1) High-end, tech-savvy innovators
- 2) Patients with critical illnesses or elders who require assistance with medications
- 3) Well-to-do, retiring baby boomers

Advertising for these markets will focus on the Glimpse’s ability to integrate into the consumer’s life and provide assistance, peace-of-mind, and a “jump” on the day. The product’s individual features will not be the emphasis, as too much technical information might dissuade these target markets to buy the product. Instead, the advertising will try to show how much easier their life will be and how their daily routines will be enhanced, not changed.





**Business &
Marketing**



Business & Marketing

External Environment Analysis

LEGAL

Duty to Warn

Legal cases from state to state have also been addressing the capacity of duty in medication distribution. Many pharmacists may voluntarily assume information, advice or warnings to patients and, therefore, the conclusion is made that pharmacists hold the duty to warn (Gallagher). Many pharmacists use and advertise technology systems that are used to crosscheck allergies, disease states, and other medications (Gallagher). States have continually ruled that pharmacists using such technologies assume the duty to warn patients (Gallagher). The conclusion of many courts is that the addition of new technologies forces the court to raise the expectations regarding duty (Gallagher).

Intel Implications

Because Glimpse is such an innovative product involving health care and medication management, Intel must understand the liability issues created with the prod-

uct. Of particular importance is the notion of duty. As Intel creates technologies to track and monitor medication management, Intel simultaneously assumes the duty to warn patients of improper medication use and/or hazards associated with the consumption of the medication. This liability largely impacts the design of Glimpse applications. As the product is designed to manage the intake of medication, it must include warnings involved with hazardous intake, the absence of taking medication, and the combination of specific medications. To further protect Intel legally, design should include the application of tracking medication

management to inform users of long-term proper or improper intake. Applications connecting the user to outside sources of information such as doctors, pharmacies, and emergency services will further protect Intel's legal liability.

ECONOMICS

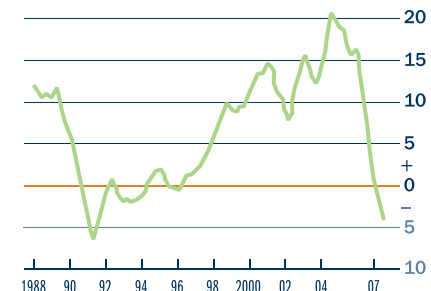
Housing Market

"The U.S. economy is in a state of shock with the recent and sudden plunge of the housing market. Some economists believe new housing developments will decline by 30% and house prices will fall

Fig. 1
The Case-Shiller chiller

The S&P/Case-Shiller home-price index*
% Change on year earlier

Source: Standard & Poor's
*10 city composite



by about 15%. The Economist displays in Figure One the drastic decline of home prices experienced in 2007.” (Wiley)

Consumer Spending

Consumer spending, which accounts for two thirds of the economic activity in the United States, has simultaneously been on the decline as the housing market has cooled (United States). The signs of a weakening economy continue to appear. As of December 2007, consumers increased their spending at the weakest pace in six months and applications for unemployment benefits climbed (Consumer spending). Reported by the Commerce Department, consumer spending rose just 0.2% in December of 2007 (Consumer Spending). According to the Labor Department, applications for unemployment soared by 69,000 to 375,000 (Consumer Spending). Ian Shepherdson, chief U.S. analyst at High Frequency Economics, believes, “the level of jobless claims reflects a deteriorating labor market” (Consumer Spending). The Federal Reserve stepped in on January 30, 2008. In attempt to boost the economy, a key interest rate was cut by a half-point (Consumer Spending). This being the second large move of the Fed in less than a week was a key indicator that the central bank is prepared to combat the weakening economy (Consumer Spending).

SOCIAL Social Programs

Additional strains are crunching the economy as the aging population is exhausting Medicare and Social Security. The retirement of 78 million baby boomers is testing the unstable entitlement programs of the United States (Aversa). Federal Reserve Chairman Ben Bernake said, “As the population ages, the nation will have to choose among higher taxes, less non-entitlement spending by the government, a reduction in spending on entitlement programs, a sharply higher budget deficit or some combination thereof.” (Aversa). “Increases from seven percent of the total economy to almost thirteen percent by 2030 and to more than fifteen percent by 2050,” are expected to be seen in government spending on Social Security and Medicare according to Bernake (Aversa).

Intel Implications

The evidence of a declinging market and the fears of a recsion are highly imprtant for Intel’s development of Glimpse. The turbulence in the U.S. economy resulting in the decline of spending is an imperative issue for a high priced good. The pricing strategy and marketability of Glimpse must be ready to combat decreases in consumer spending and fears of economic colapse. It is crucial for Intel to form strong partnerships within its supply chain to bring a product to market that is of reasonable cost.

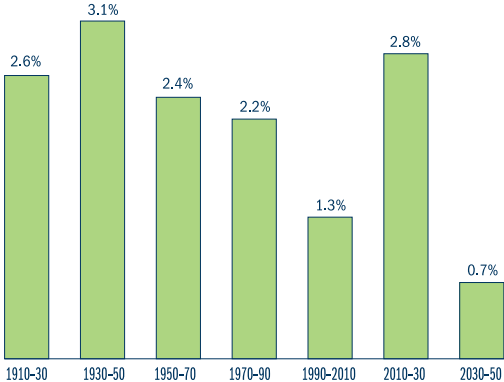
GROWTH OF ELDERLY POPULATION

Increasing life expectancy has resulted in tremendous growth of the elderly population. The Census Bureau reports that the elderly population, “will more than double between now and the year 2050, to 80 million,” making as many as one in five Americans elderly (U.S. Depart-

Fig. 2
Fifteen years from now, elderly population growth will explode

Average annual growth rate (in percentage) of the elderly population: 1910–30 to 2030–50

Source: United States Census Bureau



ment of Commerce). The large portions of the baby boom generation will enter the elderly phase of life between 2010 and 2030 causing much of this growth (U.S. Department of Commerce). Between these years, elderly population growth rates will average 2.8% per year (U.S. Department of Commerce). The Census Bureau has released charted predictions of future growth for this population segment (Figure 2).

ELDERLY DEMOGRAPHICS

The rising population of the elderly has largely impacted two states as elders choose to locate there. Generally states with the greatest proportion of elderly differ from those with the highest population of elderly (U.S. Department of Commerce). However, Florida and Pennsylvania both lead in terms of proportion and population. 19% of Florida residents are elderly and 16% of Pennsylvania residents are elderly (U.S. Department of Commerce). These two states also rank in the top four states numerically for highest total population of elders (U.S. Department of Commerce).

The living arrangements of the elderly are heavily impacted as women outlive men in American society. Elderly women are considered three times as likely as elderly men to be widowed, 48% versus 14% (U.S. Department of Commerce). The chance of elderly women living alone rises from 32% between the ages of 65 and 74 to 57% for those women over the age of 85 (U.S. Department of Com-

merce). As a result, many elderly women lack assistance with health (U.S. Department of Commerce).

Historically, the elderly were synonymously viewed as poor, but this has changed in recent years. While the elderly are no longer coined as poor, various disparities exist within subgroups of the elderly segment (U.S. Department of Commerce). Age, sex, race, ethnicity, marital status, living arrangements, educational attainment, former occupation, and work history are better characteristics for determining significant income differences (U.S. Department of Commerce).

The elderly population will experience higher levels of educational attainment in years to come. The proportion of those elders with a high school education will increase in the near future (U.S. Department of Commerce). This is based on eight to ten persons age 55 to 59 having a high school education in 1993 and nine to ten persons age 45 to 49 reporting the same (U.S. Department of Commerce). Additionally 27% of 45 to 49 year-olds had college degrees in 1993 (U.S. Department of Commerce). This historical data indicates that those that have recently come into their elder years are much better educated.

The rising numbers of elderly Americans are also becoming more ethnically diverse. By 2050, the Census Bureau estimates two in ten elders will be of a race other than white compared to one in ten in 1994 (U.S. Department of Commerce). Within this same period of time,

the proportion of the Hispanic elderly population will rise from 4% to 16% (U.S. Department of Commerce).

Intel Implications

The opportunity is available for Intel to capitalize on products and services that support the aging population. As elders are no longer synonymously known as poor and uneducated, higher priced and more intellectual product offerings have more opportunities to capture the elderly market. The notion of longer life expectancy indicates more experiences with longer lasting health problems that require health management. Intel's production of Glimpse promotes the ease of managing these multiple functions of health.

TECHNOLOGY

Capacitive Touch-Screen Technology

The development of touch screen technologies is not new in industry. Traditionally, there are four major types of touch screen input devices: resistive, capacitive, surface acoustic wave, infrared (Comparative Touch Screen Technologies). These technologies have become commonplace in retail settings, on point of sale systems, on self service technologies, on ATMs and PDAs. Smart Phones, PDAs, portable game consoles, and many information appliances are driving demand for touch screens. Touch screens are popular in environments where a keyboard and mouse do not support satisfactory interaction by the user with the display content.

Touch screen component manufacturing and product design is no longer restricted by royalties and legalities in terms of patents. The manufacturing of touch screen displays on all varieties of devices is widespread as nearly all of the significant technology patents have expired as they were filed during the 1970s and 1980s (Comparative Touch Screen Technologies).

3M Touch Systems has decades of capacitive technology experience. 3M has now created the MicroTouch™ ClearTek™ II Touch Screen. Optimized Optics, facilities display integration, and environmentally friendly designs are found in the MicroTouch™ ClearTek™ II Touch Screen (MicroTouch™ ClearTek™ II Capacitive Touch Screen). This screen was developed on the foundation of MicroTouch™ EX II electronics and robust MicroTouch™ software (MicroTouch™ ClearTek™ II Capacitive Touch Screen). The touch screen offers “high endurance solutions for a multitude of touch applications where exceptional performance, vibrant optics and environmental robustness is mission critical” (MicroTouch™ ClearTek™ II Capacitive Touch Screen).

Intel Implications

As touch screen technology demand rises, the opportunity still exists to transfer these technologies into residential environments and the healthcare sector. The use of these technologies will not hinder potential profitability as significant patent protection has expired. As these

technologies have been in manufacturing for sometime now, the specialization of many firms, such as 3M, provides Intel with reliable sources of touch screen technology supply

INDUSTRY

Health Care Expenditure *

America accounts for a larger share of GDP in health care spending than any other major industrialized country in the world (Health Care Trends). Total health spending in 2006 was 16% of the GDP (Health Care Trends). However, this figure is expected to grow to 18.7% by 2014 (Health Care Trends). The total expenditure associated with U.S. health-care was \$2.17 trillion in 2006, and this is projected to rise to \$2.88 trillion in 2010 with annual increases averaging 7% (Health Care Trends). The U.S. health sector comprising these 2006 figures was composed of physician and clinical services (\$463.3 billion), hospitals (\$662.5 billion), nursing home and home health (\$181.5 billion) and prescription drugs (\$219.2 billion) (Health Care Trends).

Federal Healthcare Programs *

In 2006 42.9 million seniors received health care through the Medicare program (Health Care Trends). This number is projected to reach 78.3 million seniors by 2030 as Baby Boomers enter retirement (Health Care Trends). Medicaid reported

expenditures of 192.3 billion in 2006 as the program supported nursing home seniors, low-income seniors, and the disabled. “In combination, both Medicare and Medicaid programs totaled 589.2 billion in costs in 2006, which was 20% of the entire federal budget for that year” (Wiley). While these programs provide care for many, 15.9% of all Americans (46.6 million) did not have health care coverage (Health Care Trends).

Personal Care Facilities

Residential care facilities comprise the second largest segment of health services in the U.S. (Nursing and Personal). Assisted living facilities employ an estimated 12,878 nursing and personal staff amongst 2,183 locations (Nursing and Personal). Nursing homes employ 166,125 workers over 2,737 facilities (Nursing and Personal). Personal care home facilities that offer health care operate 2,539 facilities with 58,248 employees and revenues of \$3.2 billion (Nursing and Personal).

\$10 billion to \$15 billion is spent annually amongst 1.5 million persons to live in 40,000 assisted living communities in the U.S. (Nursing and Personal). Assisted living on average costs \$60 per day while nursing home costs range from \$80 to \$100 a day (Nursing and Personal). Many states are currently seeking waivers to allow Medicaid to fund a variety of care facilities (Nursing and Personal).

* Adapted from Intel Preliminary Strategic Plan Fall 2007

Assisted living facilities are primarily paid for by private funds as 90% of funds come from private individuals because costs are not covered by Medicare or Medicaid (Nursing and Personal). These healthcare programs do cover costs of nursing homes though (Nursing and Personal). Nursing home expenditures are tight as the programs receive around 68% of funding from Medicaid (Nursing and Personal). However, assisted living facilities have higher operating margins because they are developed with private capital and their clients pay privately, allowing them to adjust charges accordingly (Nursing and Personal).

Outside of nursing homes and assisted living facilities, retirement villages offer another option. These developments offer private homes or town houses often accommodated with services and recreation (Nursing and Personal). Medical backup, medical alert systems and connections to nursing homes are usually included in retirement villages (Nursing and Personal).

Increasingly, care providers in this industry are beginning to offer all three stages of living: retirement village, assisted-living, nursing home (Nursing and Personal). This allows residents to move through the stages of life while in the same continuous community.

Fewer people are ending up in nursing home care than expected, even though the demand for care facilities is rising (Nursing and Personal). Medical technology and lifestyle management has allowed many seniors to recover from

Fig. 3

Source: GE Healthcare

■ Diagnostic imaging

- X-ray systems
- Digital mammography equipment
- Computed Tomography (CT) equipment
- Magnetic Resonance Imaging (MRI) equipment
- Molecular imaging equipment
- Services
- Capital planning
- Financing
- Hospital television programming
- Training

■ Clinical systems

- Anesthesia delivery systems
- Bone densitometers
- Electrocardiographs
- Holter monitoring systems
- Incubators
- Infant warmers
- Patient monitors

■ Life Sciences

- Antibodies and reagents
- Biopharmaceutical purification equipment
- Chromatography systems
- DNA sequencing kits
- Research assays
- Spectrophotometers

■ Medical Diagnostics

- Imaging agents

■ Information technology

- Clinical documentation
- Electronic medical record management
- Image storage and retrieval
- Revenue cycle management

■ Interventional, cardiology and surgery

- Cardiac catheterization lab equipment
- Diagnostic monitoring systems
- Data management systems
- Mobile fluoroscopic imaging systems

health problems without needing the skill of a full nursing facility (Nursing and Personal).

“The “hottest niche for the future,” according to Sandy Lutz in Modern Healthcare, appears to be assisted living and low-intensity medical services housing.” (Nursing and Personal). The U.S. Small Business Administration’s list of fast growing markets, indicated residential care as number one with tremendous growth coming from assisted-living facilities (Nursing and Personal).

Intel Implications

While expenditures are rising in the health care sector, Intel has an opportunity to make profit through product development. A product design that incorporates functionality that would minimize the necessity of a nurse would be an asset to an industry that is so drastically understaffed. Furthermore, product design and distribution chains that support the assisted living environment will promote the success of Glimpse.

Competitive

KEY COMPETITORS
Health Care Competitors

GE Healthcare

GE Healthcare, the primary competitor, is not only a technology giant, but it is also targeting the healthcare sector. It currently services more than 100 countries and

territories (About GE Healthcare). With headquarters in the United Kingdom, GE Healthcare is a unit of GE worth \$17 billion (About GE Healthcare). Worldwide, GE Healthcare employs 46,000 people (About GE Healthcare).

As a technical giant, GE Healthcare works to develop technologies to shape a new age of patient care. The company currently develops technologies with an expertise in imaging and information technologies, medical diagnostics, patient monitoring systems, performance improvement, drug discovery, and biopharmaceutical manufacturing (About GE Healthcare). The vision of GE Healthcare focuses on earlier healthcare: diagnosis, disease detection, disease prevention (About GE Healthcare). To support this vision, the company has developed a

Fig. 4

Source: Toshiba America Medical Systems

- **Aplio (ultrasound)**
- **Aquilion (computed tomography)**
- **Famio (ultrasound)**
- **Infini-x (cardiovascular x-ray)**
- **Kalare (x-ray)**
- **Nemio (ultrasound)**
- **T.RAD Plus (x-ray)**
- **Ultimax (x-ray)**
- **Vantage Atlas (MRI)**
- **Xario (ultrasound)**

Fig. 5

Source: Medtronics

2007 Sales	% of Total
United States	64
Europe	23
Asia Pacific	10
Other Regions	3
Total	100

2007 Sales	% of Total
CDRM	40
Spinal & Navigation	21
Vascular	10
Neurological	9
Diabetes	7
Cardiac Surgery	6
ENT	4
Physio-Control	3
Total	100

wide range of technology products for the health sector (figure three).

GE Healthcare has been fulfilling its mission and competing in industry through an expansion and acquisition strategy. In 2004, GE Healthcare entered the industry of molecular diagnostics through the \$9 billion acquisition of Amerhsam a UK firm (GE Healthcare). This acquisition was built upon through collaboration with Eli Lilly in 2007 creating molecular tests along with investigational cancer compounds (GE Healthcare). Acquisitions of IDX Systems and Biacore International in 2006 also empowered GE Healthcare's growth strategy by expansion in information technology and life sciences (GE Healthcare). Dynamic Imaging, a health care IT firm making web based image archiving and information management software,

was acquired by GE Healthcare in 2007 (GE Healthcare). In 2008, GE Helathcare has agreed to acquire Whatman plc, a UK laboratory equipment firm, for \$713 million to strengthen its life science offering (GE Healthcare).

Toshiba American Medical Systems

Toshiba American Medical Systems is a leading provider of diagnostic imaging systems. The company's products include computed tomography, magnetic resonance, ultrasound, and x-ray imaging (figure four). Toshiba has focused on a cost-cutting strategy and a shift to more profitable segments such as consumer electronics and components (Toshiba Corporation). The strategy has focused on specialty memory products which resulted in Toshiba backing away from the DRAM (Toshiba Corporation).

Outsourcing agreements with Taiwan and China manufacturers has supported cost cutting efforts (Toshiba Corporation).

Product development and cost reduction strategies have included strategic partnerships even with competitors (Toshiba Corporation). Fujitsu and NEC partnerships were made for semiconductor development (Toshiba Corporation).

Medtronic

Medtronic, Inc. competes with Intel as a medical devices company. Medtronic is a leading maker of implantable biomedical devices, defibrillators, and pacemakers (Medtronic, Inc.). Headquartered out of Minnesota, Medtronic operates many subsidiaries in the industry (Medtronic, Inc.). Development and acquisition to support devices that treat chronic disease has been at the center of Medtronic strategy (Medtronic). The company has supported this strategy through the acquisition of MiniMed, Sofamor Danek, and Xomed (Medtronic).

The subsidiary Medtronic Dofamor Danek makes spinal implant devices, neurostimulation devices and products that treat urinary incontinence. Catheters, stents, and surgical ablation technologies are made by the subsidiary Medtronic CardioVascular. As seen in figure five, the primary region comprising Medtronic sales is the United States and cardiac rhythm disease management creates close to half of Medtronic total sales.

Fig. 6

Source: Samsung Electronics

2006 Sales	% of Total
Asia/Pacific	
South Korea	22
Other Countries	31
Europe	25
Americas	21
Africa	1
Total	100

2006 Sales	% of Total
Digital Media	24
Semiconductors	24
Telecommunications	24
Liquid Crystal displays	13
Device appliances	6
Finance	3
Other	6
Total	100

Fig. 7

Source: Toshiba Corporation

2007 Sales	% of Total
Asia	
Japan	51
Other Countries	20
North America	12
Europe	12
Other Regions	2
Total	100

2007 Sales	% of Total
Digital Products	36
Social Infrastructure	27
Electronic Devices	22
Home Appliances	10
Other	5
Total	100

TECHNOLOGY COMPETITORS

Samsung

Headquartered in South Korea, Samsung Electronics is also a key competitor operating primarily in electronic components and semiconductor manufacturing including memory chips and modules (Samsung Electronics). Samsung Electronics is the flagship of Samsung Group.

As another technical giant, Samsung provides consumer devices such as big-screen televisions, digital cameras, computers, monitors, LCD panels, and printers (Samsung Electronics). However, the company also produces semiconductors such as DRAMs, SRAMs, and flash memory along with communication devices (Samsung Electronics). The Asian Pacific countries compose the largest segment of Samsung sales with digital media, semiconductors, and telecommunications equally creating large portions of Samsung sales (figure six).

Beginning in the late 1990s, Samsung has aggressively managed internal reform to cut costs and streamline operations (Samsung Electronics). The company has also exhibited massive focus on brand management through marketing efforts including a prominent sponsorship of the Olympic Games (Samsung Electronics). It is estimates that these efforts contributed to the brand value doubling between 2001 and 2003 to more than \$10 billion (Samsung Electronics).

Samsung also operates an intense differentiation strategy through high end product development (Samsung Electronics). Samsung has focused on high-margin DRAMs for specialized applications (Samsung Electronics). Samsung even powered through the dismal 2001to 2003 slump in the semiconductor industry poring billions into capital improvements and new factories with this strategy (Samsung Electronics).

Samsung strategy has taken a recent focus on memory production lines (Samsung Electronics). \$800 million was committed to expansion and upgrading in this area in 2007 (Samsung Electronics). The recent commitment has outspent Intel on capital expenditure in the chip business (Samsung Electronics).

Strategy has also involved strong alliances with high tech giants. Samsung has aligned with Sony in the production of LCD televisions and IBM Microelectronics to share chip technology (Samsung Electronics).

Toshiba

Toshiba Corporation and operations of the subsidiary Toshiba America Medical Systems, additionally competes with Intel. Toshiba Corporation, headquartered in Tokyo, Japan, develops personal and professional computers, telecommunications and medical equipment, industrial machinery, consumer appliances, electronic components, and semiconductors (Toshiba Corporation). As seen in figure seven, Toshiba Corporation holds a strong sales presence in Asia and a large portion of Toshiba Sales are generated from digital products (Toshiba Corporation).

Toshiba has focused on a cost-cutting strategy and a shift to more profitable segments such as consumer electronics and components (Toshiba Corporation). The strategy has focused on specialty memory products which resulted in Toshiba backing away from the DRAM (Toshiba Corporation). Outsourcing agreements

with Taiwan and China manufacturers has supported cost cutting efforts (Toshiba Corporation).

Product development and cost reduction strategies have included strategic partnerships even with competitors (Toshiba Corporation). Fujitsu and NEC partnerships were made for semiconductor development (Toshiba Corporation).

SUPPLIERS

Upstream Potential Suppliers

While focusing on a product development strategy, Intel can benefit from retaining and building current supplier relations. The most recent supplier relationships formed were for the Core2Duo Processor (Wiley). As a leader in touch screen technologies, 3M, proves to be a vital supplier working to deliver quality and innovation that is highly compatible. The MicroTouch™ ClearTek™ II Touch Screen, made by 3M, provides the capacitive touch screen technologies required in the production of Glimpse. As a world class support and service organization, expert consulting is available whenever 3M products are designed, integrated, or delivered. Samsung is an additional supplier that is necessary for the production of Glimpse. Samsung has a competency in developing LCD screens that compete at the top of the industry. The product quality along with the strong brand presence the company holds within consumer homes creates a supply advantage that should be used.

Intel Implications

It is at Intel's advantage to build upon past supplier relationships that will support the needed internal technology of Glimpse: touch screen microprocessor, pc microprocessor, wireless transmitter. To acquire LCD panels and touch screens, Intel may benefit from exploring alliances with suppliers or even competitors. Strategic alliances with 3M, the leader in touch screens, may provide cost advantages to Intel as competitors begin to enter the market. An additional supplier relationship should be formed with Samsung over other suppliers of the LCD screen as the company provides top quality and strong brand presence.

DISTRIBUTORS AND RETAILERS

As Intel is now focusing on Intel branded products, such as Glimpse, downstream channels must be developed to support the distribution of each Intel branded product line. Glimpse has five distinct distribution channels through which it is distributed downstream as seen in Sales Channels. As the top providers of assisted living care buy direct, downstream distribution will center on direct personal sales. Hotels purchase furniture, fixtures, and equipment through buying agencies. Benjamin West, the buying agency for the hotel targets of Glimpse, will support downstream distribution as Glimpse is directly sold to Benjamin West and then delivered to the firm's clients. Direct Sales will also be employed through trade shows that captivate the attention of

design center buyers that purchase what ultimately is placed in new home developments. The downstream flow of Glimpse to consumers will occur through Insurance companies supplying the product to doctors and health facilities that offer them to patients.

Internal Environment

History & Mission

Intel in Health

"With the development of the Intel Centrino Mobile technology platform, Intel has restructured to approach the healthcare market with its new Digital Health Group division. Taking advantage of its core competency as a technology innovator, Digital Health Group plans to bring Intel's knowledge and technical expertise to improve the healthcare experience not just in United States but throughout the world. The group plans to work on effective computer and communications products and solutions to improve health care, while combining the information technology industry and the health care industry. They have identified 5 key segments opportunities that they hope to pursue: Digital Home, Enterprise, Mobility, Health and Channel." (Wiley). *

"Intel has recognized growth in chronic health conditions and the aging population as two major problems that will burden the health care system in the future. They have narrowed their focus to

3 main categories in the health industry: Healthcare IT, Personal Health Platforms, and Biomed/Life Sciences.” (Wiley).*

Intel at Work

“In Healthcare IT, Intel is planning a two-pronged approach. The first is to infuse technology with existing products. The second approach is to deliver purpose-built products by understanding the customer needs and wants.” (Wiley).

“Intel’s Digital Health Group’s Health Research & Innovation Team is one of the largest teams of social scientists and engineers in the industry. The team addresses unmet healthcare needs by talking to health care professionals such as doctors, nurses, patients, administrators, caregivers etc. They are developing software and hardware along with standards and services to create healthcare platforms that deliver new technology-enabled experiences that meet the needs recognized and identified by the team.” (Wiley).

Financial Condition

Positive Outlook

While there are a number of risks and uncertainties, many forward looking statements provide promise for Intel’s financial future. In the first quarter of 2008, Intel looks to have a strong financial performance. Intel’s first quarter 2008 financial expectations include the following (Business Outlook).

- Revenue: Between \$9.4 billion and \$10 billion.
- Gross margin: 56 percent plus or minus a couple of points.
- Spending (R&D plus MG&A): Between \$2.8 billion and \$2.9 billion.
- Restructuring and asset impairment charges: Approximately \$100 million.
- Net gains from equity investments and interest and other: Approximately \$175 million.
- Tax rate: Approximately 31 percent.
- Depreciation: Approximately \$1.1 billion.

The positive financial expectations of Intel continue throughout the remainder of 2008. The full financial outlook for 2008 includes the following financial expectations made by Intel (Business Outlook).

- Gross margin: 57 percent plus or minus a few points.
- R&D: Approximately \$5.9 billion.
- MG&A: Approximately \$5.5 billion.
- Capital spending: \$5.2 billion plus or minus \$200 million.
- Tax rate: Approximately 31 percent.
- Depreciation: \$4.4 billion plus or minus \$100 million.

Management & Organization Structure

ORGANIZATION & SUCCESSION

Internal reorganization in 2005, has created divisions that enable Intel to focus

on its core platforms (Intel Launches Broad Reorganization). Organizing around platforms instead of products better enables sales success through bundles. This form of organization also supports expansion into new markets, such as health care.

The Digital Health Group, led by corporate vice president Louis Burns, develops products and explores business opportunities in healthcare research, diagnostics and productivity, and personal healthcare (Intel Launches Broad Reorganization). The autonomy of this division will support growth opportunities for Glimpse through the platform products strategy (Intel Launches Broad Reorganization). Paul Otellini, Intel president and COO, noted that this form of organization, “better anticipates and addresses market needs, spending decision making, and ensuring world-class operational excellence”(Intel Launches Broad Reorganization).

Within the Digital Health Group, Glimpse will fall under the second prong of Intel’s Healthcare IT. Glimpse will be a purpose-built product focusing on the customer needs and wants. Intel’s massive Health Research and Innovation Team will combine social scientists and engineers to further research and develop Glimpse.

STRENGTHS

Intel is currently operating under a platform strategy that well suits the development of Glimpse. This avenue not only supports the success of Glimpse, but it

also allows for an expansion opportunity through similar product lines.

Intel's divisional approach allows for emphasis on health while allocating proper resources to the particular division. While Intel operates through multiple divisions, the Digital Health Group is still very well supported internally. The Health Research & Innovation Team, the multi-million dollar research initiative with IDA in Ireland, and the vast amount of university collaboration combines a massive amount of resources to enable the Digital Health Group to successfully fulfill its vision.

IMPROVEMENTS

To ensure that the proper sales functions are in place to support the production of Glimpse, Intel must partner with an outside sales service. During the 2001 economic downturn, Intel opted to use external sales representatives (MRERF). The use of an outside sales representative is more feasible than developing an internal sales function as the outside representative can be established at a lower cost both initially and long term, and the outside representative can provide necessary contacts within the sales channel. The following intangible benefits will be experienced from outsourcing the sales function (MRERF).

- Cash flow benefits realized because the outsourced sales force is not compensated during the gestation of a sale, only when the sale is complete, shipped and paid for
- Reduction in legal expense and

exposures because the outsourced sales organization deals with its own issues of benefits, workman's compensation, sexual harassment, and other employee matters

- Value of the market research/field intelligence available because of the outsourced sales force's being rooted in its geographic territory
- Leverage created by the synergy of multiple-line solutions selling
- Faster market access, penetration, and increased sales
- Product portfolios allow manufacturers' representatives to present broad-based solutions to customer problems, rather than the price-and-delivery responses typical to single-product selling.
- With independent representatives, there is no sales expense until there is a sale

Relationship with outside manufacturing representatives at a 10% commission rate will ultimately be used to support the sales function. Index document A includes detailed information on medical equipment Certified Professional Manufacturers Representatives that have been certified through MRERF.

While the structure of the Digital Health Group is seen with other competitors, such as GE, the vision of this group creates a competitive advantage. By looking beyond the scope of hospitals and diagnostics, Digital Health Group is internally focused to enter markets that other competitors are not directing toward.

Personnel

RIGHT PEOPLE

The large allocation of human resources within the Digital Health Group well supports Glimpse. Particularly the strong research and innovation partnerships, such as IDA and university collaboration, ensure that the necessary social scientists and engineers are in place.

LIMITATIONS & PROBLEMS

The lack of sales personnel requires that adjustments be made to support the sales function. As indicated in Management & Organization Structure Improvements, outsourcing the sales function proves most beneficial. The use of certified professional manufacturer representatives in place of internal personal will most benefit the personnel sales function.

Technical

NEEDS

- Capacitive Touch Screen
- LCD Monitor
- Touch Screen Microprocessor
- Wireless Transmitter
- PC Microprocessor
- Minimized PC

LIMITATIONS & PROBLEMS

Intel does not currently operate with strong competencies in Touch Screen and LCD Monitors. Intel would be attempting

to replicate the work of current market leaders when producing these components. This would likely be a very costly and resource consuming endeavor. Market leaders have decades of experience with these components and are better equipped to support their production.

Touch Screen and LCD technologies are also very commonplace in the market. They no longer differentiate a product nor provide a competitive advantage. The market's leading producers of these products, such as 3M and Samsung, manufacture these products so that they are readily available to many of our competitors.

IMPROVEMENTS

To best support the cost and quality of the Touch Screen and LCD components, Intel should look to buy these components externally rather than make them. This will minimize development costs and resource allocation for Intel while ensuring the maximum value of the components through purchasing from the market's leading producers.

Marketing & Sales

VALUE TO CUSTOMERS

In the B to B framework, personal care living facilities, home builders, and hotels obtain value from Glimpse. Personal care living facilities receive value from the medication management features and tracking options that reduces the need

for nurse assistance and minimizes some aspects of uncertainty in tracking patient care. Value to homebuilders is established as Glimpse provides them with a customizable option that well serves the needs of their home buyers, whether the buyers are baby boomers seeking technology that will help them independently monitor their health or high status buyers looking for social significance. Hotels receive value through medication management features that support large amounts of traveling baby boomers as well as through information sharing features that allow the hotel to further connect with its customers. While there are specific features that deliver value to each of these segments, the primary value to these segments is the ability to provide a better offering for their end customers.

In the B to C framework, baby boomers and those with chronic illness will experience value from Glimpse. Glimpse offers baby boomers the ability to track many areas of health. As baby boomers are looking to be much more personally involved in their health management, this feature provides great value to the segment. Additionally, the schedule organization and product location in the bathroom aids this segment as they experience memory loss. The medication management component eases the mind of baby boomers, offering them security and reassurance. The chronically ill primarily receive value through medication management and tracking. Medication management again provides ease as security

and reassurance are provided along with organization and reminders, eliminating the hassle associated with many medications for long periods of time. The tracking features additionally provide value to the chronically ill as their health experience is easy to identify, monitor, and explain when working with health service providers. The communication features and positive reinforcement design built into Glimpse continues to provide value to both baby boomers and the chronically ill aiding their health recovery through positive relationships.

Service and support are highly important elements of Glimpse that create the existence of ongoing value for all targets. Service is continually offered as the customer is given opportunities to upgrade the product through the installation of software bundles that enable additional features. This service creates a customizable adaptation of the product that ensures that the product's features can be updated overtime to support customer needs. Additionally, the replacement of the internal PC components acts as a service element that enables the customer to update the product's technology without replacing the permanent features such as the mirror and LCD panel, saving the customer money and waste. Support value is consistently delivered through installation services that are included with the price of the product, saving the customer segments time, effort, and money.

HOW DO WE IMPROVE?

The product and service are well designed to continually deliver value to customers. However, Intel must create and manage a timeline for product upgrades and new software bundles. It is suggested to introduce software bundles on an annual basis and PC component upgrades every three years. Additionally it will be necessary to establish a partnership that will enable installation services of the initial product and following upgrades.

Market Opportunity Analysis

POTENTIAL CUSTOMERS

Industry Opportunities

The rapid expansion and growth of the residential care facilities industry offers an abundance of opportunity. As these markets develop to support the rises in the aging population, large abundances of medical technology and devices are in demand particularly those that replace some of the tasks that are currently provided by the understaffed nursing industry. At the core of residential care facilities, assisted living communities are the prime opportunity. These communities are increasing as the aid of technology has allowed many in the aging population to live without the full time nursing care provided in nursing homes.

Additionally, the home development industry provides opportunity. Within this industry many developments are arising that emphasize a retirement community. The targeted population of these communities, the retiring baby boomer generation, is one that finds great value in the proposition of Glimpse. Another home development opportunity exists with developers that provide high end high value home developments. This market provides an avenue for Glimpse to reach consumers that have higher disposable income and that find value in innovative high status technologies.

The hotel industry acts as a tertiary customer of Glimpse. Hotels continue to bring more technologies into the rooms of guests to increase the access to information and communication. Glimpse provides great value to hotels by being able to provide such access in an innovative fashion. This potential customer allows Glimpse an avenue to service the medication management needs of travelers.

KEY ACCOUNTS

Within the U.S market there are ten companies considered to be the Big Ten Providers of assisted living; their assisted living chains stretch across the country (Do the Big Ten Providers). As the largest providers of assisted living care, these ten companies are key accounts for the sale of Glimpse (Do the Big Ten Providers). These ten key accounts all offer high end assisted living facilities.

- American Lifestyles
- Assisted Living Concepts
- Atria Senior Living Group
- Brookdale Senior Living, Inc
- Emeritus
- HCR ManorCare
- Healthstone Assisted Living
- Leisure Care
- Merrill Gardens
- Sunrise Senior Living

The top builders of retirement communities are also essential accounts to develop in the sale of Glimpse. Dell Webb, a division of Pulte Homes, has over fifty years of experience in this industry throughout the United States and is considered the largest of the retirement community builders (Retirement Community Builders). K. Hovnanian Homes has been building retirement communities since 1959 throughout the United States and acts as an industry leader specializing in country club lifestyle (Retirement Community Builders). Brookfield Homes has been building since 1956 and is considered one of the top twenty largest developers in the nation with a focus on customization and design (Retirement Community Builders). Lennar, founded in 1954, develops in twenty states and specializes in luxury adult communities (Retirement Community Builders).

The large hotel chains positioned as upscale and luxury also exist as key accounts for the sale of Glimpse. Within the industry, the top five hotel companies as listed below provide essential accounts (Upscale & Luxury Hotels).

- Marriott International, Inc.
- Hilton Hotels Corporation
- Starwood Hotels & Resorts Worldwide, Inc.
- Alticor Inc.
- Global Hyatt Corporation

The furniture, fixtures, and equipment purchasing for all of these key accounts is managed by Benjamin West, the country's leading purchasing firm within the hospitality industry (Projects). Therefore, Benjamin West would be the crucial account to establish in order to supply the targeted hotels.

TARGET POTENTIAL

Assisted living facilities, as a B to B target prove to have much potential. The ten targeted assisted living facility companies each operate between forty and four hundred communities. Amongst the ten targeted assisted living facility companies, 1,620 communities exist in total. It is additionally assumed that the potential sale of Glimpse would place just one mirror in each unit. It is assumed that on average each of these communities contains two hundred units, thus, 324,000 housing units make up the current potential target market of existing assisted living facilities. It is further assumed that on average each provider will build two new communities a year causing the target market to grow by 4,000 potential housing units.

Assisted living facilities are a primary target in year one and two as the potential of this market is so high. It is

assumed that a reasonable penetration of the currently existing target market in year one is 20%. The potential for year two sales growth is assumed to be 15% resulting in 35% penetration of the assisted living facility currently existing in the target market by the end of year two. The following years three through five have the potential to increase sales by 10% each year in the currently existing target market. The sales potential for new units is 4,000 units a year based on the assumption that on average each top ten provider releases two new communities a year with two-hundred housing units each.

Home builders, as a B to B target, additionally have much potential. The average home builder in the target market produces 35,000 homes a year. If all four target builders produce an average of 35,000 homes a year, 140,000 homes would be produced by the targeted builders. The average home price of these builders is assumed to be 499,000 based on the pricing figures given in appendix document c. It, therefore, is assumed that 20% of the homes produced by each of the target builders are in a price range that supports the sale of Glimpse. Given that the production of 140,000 homes was estimated to come from the combined targeted builders, 20% of their productions would yield 28,000 homes per year that are suited for the sale of Glimpse. Again it is assumed that each housing unit provides for the sale of just one Glimpse, creat-

ing an annual target potential of 28,000 Glimpse sales in the home builder target market.

It is assumed that in year one, Glimpse sales will be able to capture two of the four targeted home builders providing 50% penetration of the market. Placing Glimpse in the top 20% price bracket of the two captured accounts would yield sales of 14,000 units. It is assumed in year two that the accounts captured in year one are continued into year two providing another 14,000 sales units. The addition of a third targeted builder account in year two would bring the total unit sales to 21,000 and the penetration of the targeted market to 75%. An assumption is made that the fourth targeted builder account is not captured in the following years. Years three through five are assumed to experience 5% sales growth as the units produced by each builder account are likely to rise along with the value of homes. As the value of produced homes rises, more homes become feasible sales points for Glimpse.

Mission Statement & Objectives

MISSION STATEMENT

Mantra—Connecting People and Information for Better Health

Tagline—Access Life

“Access Life—these two words drive focus at Intel. Our job is to envision and create the next means to life management—in technology, health management, social responsibility—to continuously encourage our customers, partners, consumers, and businesses to join us as we continue to enhance life spaces.” (Wiley).

CONSUMER MARKETS

Glimpse is designed to sell in two markets: business to business and business to consumer. The B to B framework is the target for years one through five. Following a redesign of the product, Glimpse will be released to the consumer market in year six at a lower cost.

Within the B to B sales framework, personal care facilities are a primary customer target. This includes nursing homes, assisted living communities, and retirement villages. Assisted living will compose the highest sales volume amongst these customers. New home developers an additional primary customers target of the B to B framework. The target developers are those building retirement communities or high end luxury communities. Both personal care facili-

ties and home developers will be targeted in years one and two. A tertiary customer segment exists in the hotel industry as well. This B to B target market will not be penetrated until year three.

The B to C sales framework supports baby boomers as the primary customer. The chronically ill are secondary customers in this framework gaining great value from the freedom of health management. Additionally, high end early adopters of innovative technologies are secondary customers. All consumer markets will be targeted beginning in year five. This will allow for the product to possibly be redesigned and for the product to be offered at a lower cost based on learning curve and economy of scale production cost decreased.

PARTNERSHIPS

It is essential for Intel to foster a strong supply chain building relationships with suppliers and distributors, possibly even competitors. Intel has many existing technology suppliers up stream. A combination of these relationships will need to be maintained to provide the internal technology of Glimpse. New partnerships with 3M as the supplier of touch screens will create a relationship that can be trusted in terms of quality, adaptability, reliability, and support. Samsung’s production of the LCD panel and aggressive expansion and partnership strategies suggest an additionally strong partnership.

MARKETING

The primary marketing objective is to carry out a product diversification strategy. This strategy involves many goals that focus on place and promotion of the product. Additionally, brand strategy must be developed and managed to successfully launch Glimpse branded under the Intel name.

International Builders Show

Objective: Annual attendance in years one through three.

- Year One: 500 square foot booth in Central Hall
 - Cost: \$19,950
- Year Two: 500 square foot booth in Central Hall
 - Cost: \$19,950
- Year Three: 300 square foot booth in Central Hall
 - Cost: \$12,050

Medtrade

Objective: Semiannual attendance in years one through three.

- Year One: Large central location
 - Cost: assumed \$17,000
- Year Two: Large central location
 - Cost: assumed \$17,000
- Year Three: Medium central location
 - Cost: assumed \$10,000

An equally imperative objective is the use of manufacturer representatives. Fostering these relationships must first be addressed. The objective is to use this external sales function to lower cost and

OBJECTIVES

Assisted Living Sales Forecast

	Year One	Year Two	Year Three	Year Four	Year Five	Total
Units Sold	64,800	49,200	33,200	33,600	34,000	214,800
Target Penetration	20%	15%	10%	10%	10%	65%

Assisted Living Sales Forecast

	Year One	Year Two	Year Three	Year Four	Year Five	Total
Units Sold	14,000	21,000	22,050	23,152	24,309	104,511
Target Penetration	50%	25%	5%	5%	5%	90%

advance through synergy. The marketing objectives include specific sales goals for this structure as noted in Financial Objectives.

Marketing objectives focus on maximizing the value of Glimpse perceived by the targeted buyers and users of the product. All marketing and sales efforts must convey the positioning of security, freedom, trust, access, and ease. Marketing efforts should work to minimize costs and maintain market stability capturing large portions of market share.

Glimpse Income Statement

	Year One	Year Two	Year Three	Year Four	Year Five
Revenue					
Total Revenue	197,000,000	175,500,000	138,125,000	141,880,000	145,772,500
COGS					
Manufacturer Supply	157,600,000	126,360,000	89,505,000	82,744,416	76,501,408
Logistics	7,880,000	6,318,000	4,475,250	4,137,221	3,825,070
Distribution	39,400,000	31,590,000	22,376,250	20,686,104	19,125,352
Trade Shows	36,950	36,950	22,050	0	0
Catalogs	14,392	14,392	14,266	14,266	14,140
General Mktg. Materials	200,000	180,000	160,000	140,000	120,000
Total COGS	205,131,342	164,499,342	116,552,816	107,722,007	99,585,970
GROSS PROFIT	(8,131,342)	11,000,658	21,572,184	34,157,993	46,186,530
%	-4.13%	6.27%	15.62%	24.08%	31.68%

	Year One	Year Two	Year Three	Year Four	Year Five
G & A					
Engineer	75,000	75,000	75,000	75,000	75,000
Graphic Designer/ Marketing	40,000	40,000	40,000	40,000	40,000
Design	35,000	35,000	17,500	17,500	17,500
Business Manager	35,000	35,000	35,000	35,000	35,000
Accounting	6,000	6,000	6,000	6,000	6,000
G&A Allocated Rent	30,000	30,000	30,000	30,000	30,000
Travel	15,000	15,000	15,000	7,000	7,000
Insurance	24,000	24,000	24,000	24,000	24,000
Professional Services	12,000	12,000	12,000	12,000	12,000
Office Equipment	6,000	6,000	6,000	6,000	6,000
Total	278,000	278,000	260,500	252,500	252,500
EBITDA	(8,409,342)	10,722,658	21,311,684	33,905,493	45,934,030
Depreciation	0	0	0	0	0
Interest	0	0	0	0	0
Taxes	0	3,645,704	7,245,973	11,527,868	15,617,570
NET INCOME	(8,409,342)	7,076,954	14,065,711	22,377,626	30,316,460

Glimpse Balance Sheet

	Year One	Year Two	Year Three	Year Four	Year Five
Assets					
Cash	(7,109,342)	667,612	15,433,323	38,510,949	69,527,409
Equipment	500,000	500,000	500,000	500,000	500,000
Less Depreciation	0	0	0	0	0
Total Equipment	500,000	500,000	500,000	500,000	500,000
Total Assets	(6,609,342)	1,167,612	15,933,323	39,010,949	70,027,409
Liabilities					
Notes Payable	0	0	0	0	0
Less Principal Paid	0	0	0	0	0
Equity					
Owner's Equity	600,000	650,000	700,000	750,000	800,000
Retained Earnings	(8,409,342)	(1,332,388)	12,733,323	35,110,949	65,427,409
Total Liabilities + Equity	(7,809,342)	(682,388)	13,433,323	35,860,949	66,227,409
Correction	1,200,000	1,850,000	2,500,000	3,150,000	3,800,000

Projections after year five will differ greatly from years one through five. Targeting the consumer market in year six will create forecast differences. Additionally, the offering to consumers will be priced much lower causing variation from the year one through five projections.

Glimpse Cash Flow

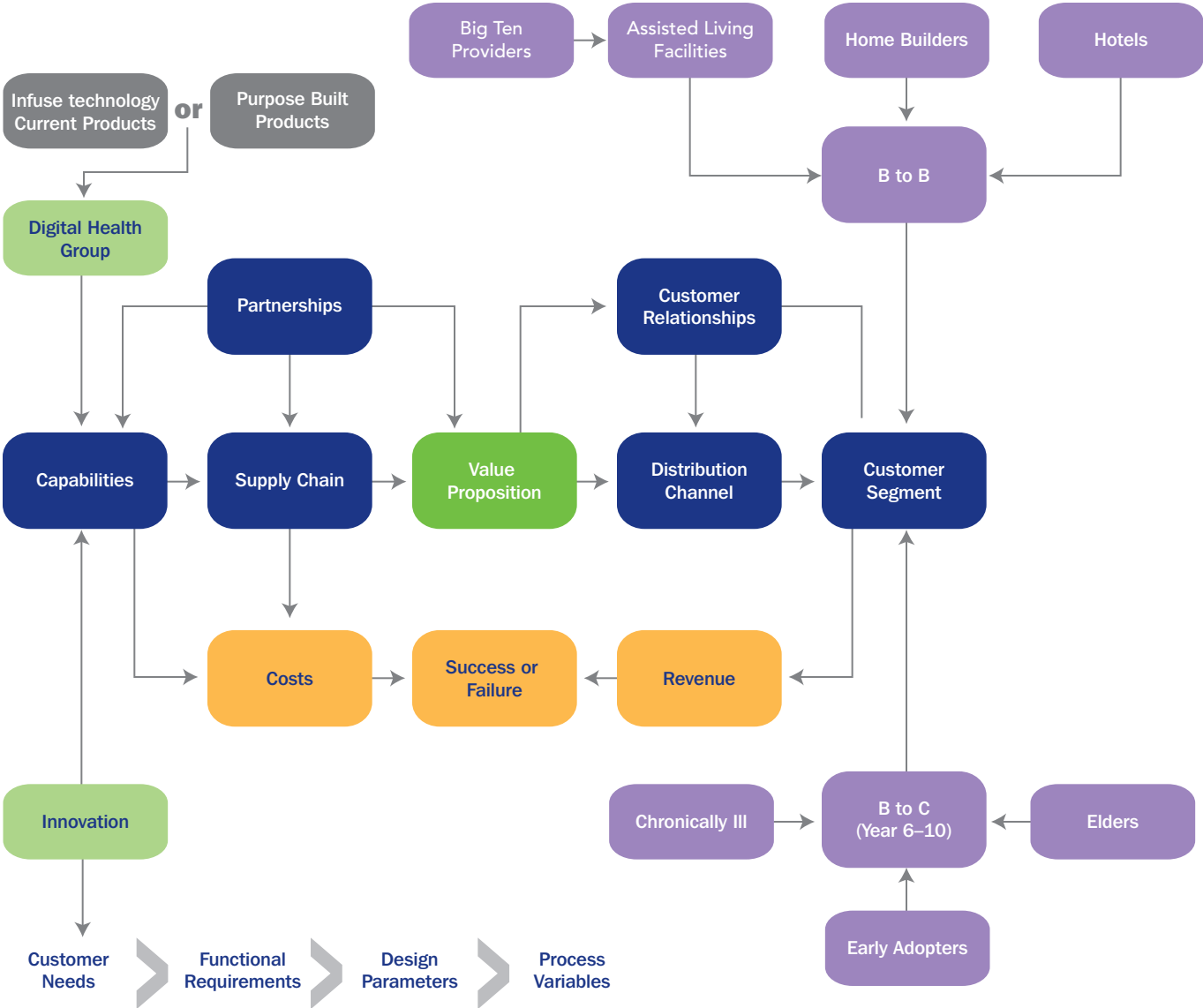
	Year One	Year Two	Year Three	Year Four	Year Five
Cash Flow from Operations					
Income from Operations	(8,409,342)	7,076,954	14,065,711	22,377,626	30,316,460
Add Depreciation	0	0	0	0	0
Net Cash from Operations	(8,409,342)	7,076,954	14,065,711	22,377,626	30,316,460
Cash Flow from Investing					
(Increase) Decrease Machinery	700,000	700,000	700,000	700,000	700,000
Net Cash from Investing	700,000	700,000	700,000	700,000	700,000
Cash Flow from Financing					
(Decrease) Increase LTD	0	0	0	0	0
(Decrease) Increase LTD	0	0	0	0	0
(Redemption) Issuance Common Stock	600,000	0	0	0	0
Net Cash from Financing	600,000	0	0	0	0
Net Increase (Decrease) in Cash	(7,109,342)	7,776,954	14,765,711	23,077,626	31,016,460
Beginning Cash	0	(7,109,342)	667,612	15,433,323	38,510,949
Ending Cash	(7,109,342)	667,612	15,433,323	38,510,949	69,527,409

Strategies & Tactics

BUSINESS MODEL

Glimpse will be produced through an aggressive business model that relies on internal innovation and the platform structure supporting the Digital Health Group. The supply chain processes will heavily depend on existing technologies partnerships along with the creation of new partnerships with 3M and Samsung. The strong brand of Intel, 3M, and Samsung along with the customer oriented innovation will deliver a continual value proposition. Through distribution and customer relationship management, the value will serve three customer targets within the B to B framework as well as three within the B to C framework. However, the B to B framework will be the only target of this business model in years one through five. In year six, Glimpse will be released to consumer targets at a lower price as indicated in the Price section.

Financial Business Model



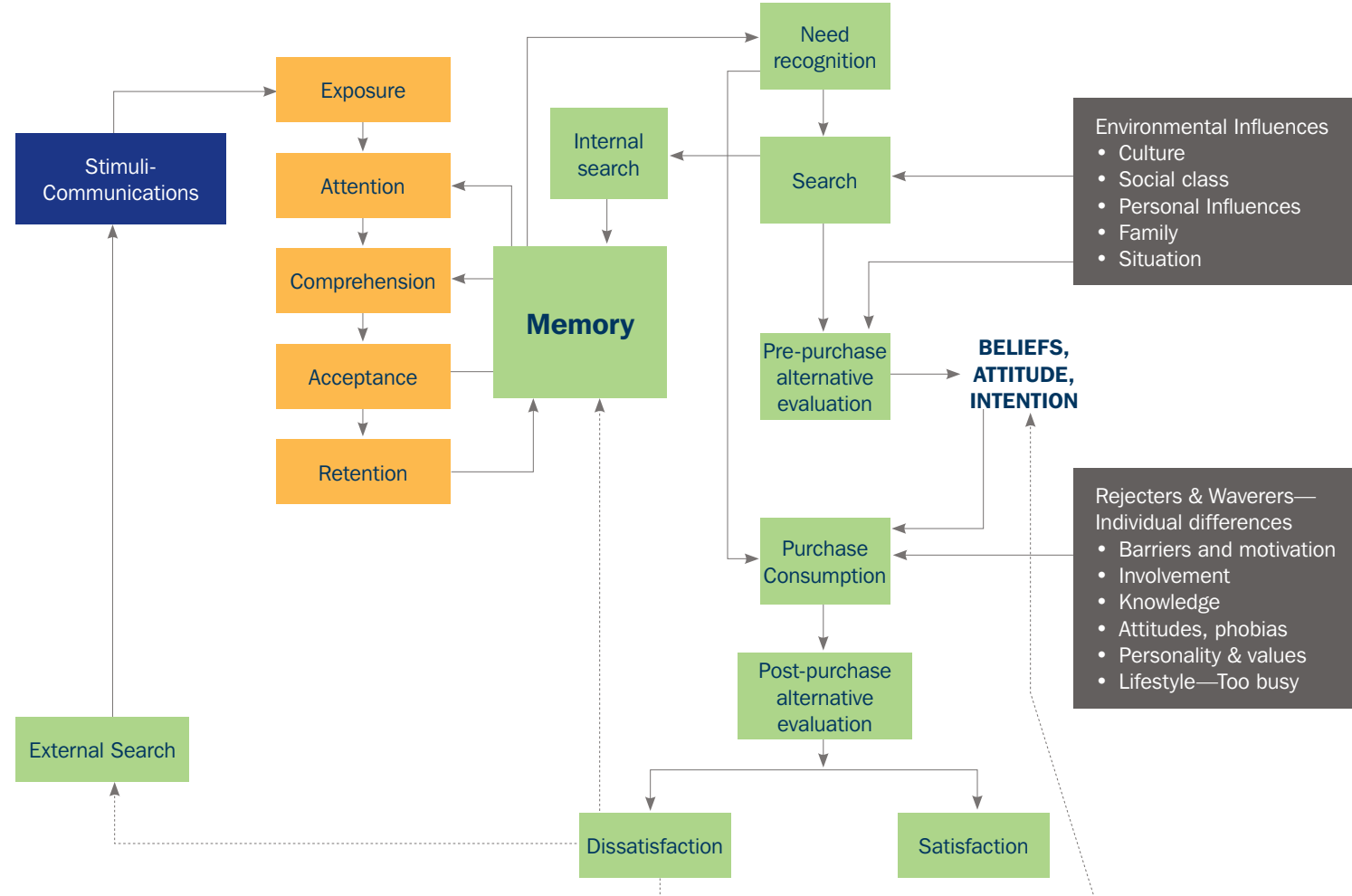
Consumer Behavior Model

COMMUNICATIONS INPUT

INFORMATION PROCESSING

DECISION PROCESS

INFLUENCING VARIABLES



NEED RECOGNITION

Elders' recognition of their need for Glimpse will be established by influencing variables as well as communication input. The influential variables of culture, social class, personal influences, family, and situation will all impact need recognition. However, social class, family, and situation will be the largest influencers. As the product is targeted to high income home builders and assisted living facilities, Glimpse will become a necessary element to convey one's high level of social class in his/her elder years. As research indicates high dependency rates, elders are heavily reliant on and influenced by family, which will influence the recognition of the need for Glimpse. Additionally, situation will influence need recognition as often recognition will occur as a result of problems that are associated with medication management.

SEARCH

The internal search for information will heavily involve the existing memory network along with external sources of information. Any previously seen advertising, promotions, and word-of-mouth that have progressed through the elders information processing will be stored through memory retention. As communications of Glimpse incorporates the elements of high social class, security for the family, and the absence of medication errors, internal links will be established between the idea of Glimpse and these elements of need recognition. Therefore, as the

need is recognized through the three primary categories of social class, family, and situation, the internal memory links will work through an internal retrieval process that connects Glimpse to the problem recognition.

Elders will likely conduct an external search for information. As Glimpse is categorized as a health product, elders will likely visit a doctor, pharmacist, and/or health publications to find further information as to how to solve the problem established during need recognition.

PRE-PURCHASE ALTERNATIVE EVALUATION

The evaluation of alternatives when addressing the need will again be influenced by environmental influences and will involve an internal and external search for information. Ultimately, Glimpse must align well with the beliefs, attitudes, and intentions of the purchaser in order for it to be the resulting purchase decision.

The primary alternatives that will be evaluated in the purchase decision will compare Glimpse to traditional hand held pill boxes, medication monitors worn on the wrist, and hand held pill dispensers.

PURCHASE CONSUMPTION

Ultimately, the perceptions associated with the purchase and consumption of Glimpse are formed based on how the user ties Glimpse back to the initial need recognition. Barriers & motivation, involvement, knowledge, attitude & phobias, personality & values, and lifestyle

all impact how the user values Glimpse based on its perceived performance compared to the expected performance established through need recognition and pre-purchase alternative evaluation.

POST PURCHASE ALTERNATIVE EVALUATION

Barriers, knowledge, and attitude will all be the primary influencing variables that will create satisfaction or dissatisfaction as Glimpse relies heavily on elders' use of technology.

Management & Organization

OPERATIONAL STRUCTURE

Glimpse operates under Intel's core competency in advanced technologies for health care. The Digital Health Group, being the primary organizational structure Glimpse functions within, works to support four sectors. The four sectors of Enterprise, Mobility, Digital Home, and Health & Channel will combine to create Glimpse through the Personal Health Platform over the additional Healthcare It and Biomed/Life Sciences focuses.

As the purpose of Digital Health Group through the Personal Health Platform is to create either current products that are infused with new technologies or purpose built products that emphasize innovation, Glimpse will be developed through the combination of both these ideologies.

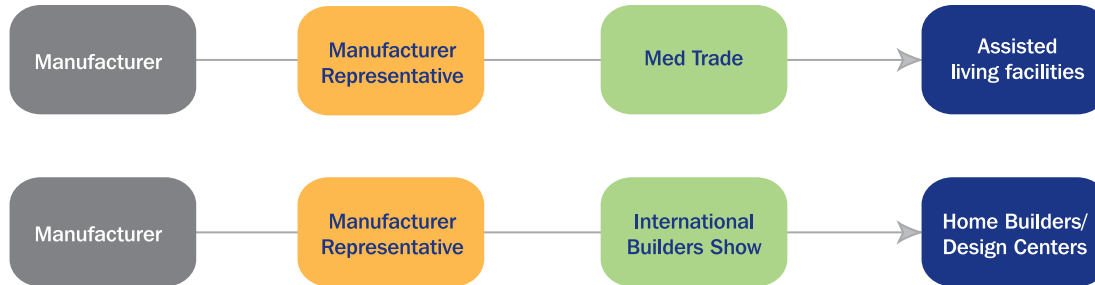
CHANNEL STRUCTURES

In years one through five the channel structure focus is on delivering Glimpse to assisted living facilities and home builders. Manufacturer representatives are used as an external sales force to regionally promote and sell Glimpse. Those selling to assisted living facilities will use

MedTrade as a convention to conduct sales through. The placement of Glimpse at MedTrade will also create preliminary promotion in regards to the potential of selling Glimpse in consumer markets following the completion of year five. Manufacturer representatives delivering Glimpse to home builders will promote the product through the International Builders Show.

Further work is necessary to establish the proper consumer sales channel for Glimpse. The channel would again use manufacturer representatives and MedTrade as the primary promotion of Glimpse sales. However, sales would be

Year One through Five Sales Channel

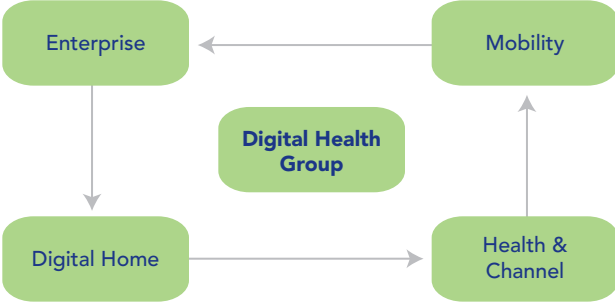


Potential Sales Channel following Year Five





Advanced Technology For



directed to insurance providers who then offer coverage of the product, ultimately enabling doctors to prescribe Glimpse as a consumer product to be picked up through medical supply stores.

PEOPLE

A large amount of human resources will be initially placed in building relations. Work must be conducted to ensure that past technology suppliers will be on board with the new product development. Additionally, partnerships must be fostered and secured with 3M and Samsung. Resources must also be allocated to developing legal protections for the product, for limiting liability, and for securing product insurance coverage. Further work must be conducted to establish strong B to B connections. Targeted B to B customers are essential to capture as they will help convey the positioning of Glimpse through its initial launch years. Securing manufacturer representatives is additionally essential to support the sales function

Marketing & Sales

PRODUCT

Glimpse will be sold as a product service bundle. The initial product purchase is for an interactive touch screen mirror. The product manages medication and organization as its primary function. Along with this purchase installation services

are included at no additional charge. The product is then serviced through software bundle upgrades that can be purchased by individual consumers to provide selected applications. The product is further serviced as component upgrades can be ordered to replace the internal elements as they become outdated or faulty.

PROMOTION

Promotion in years one and two will heavily focus on the tradeshow experience. Prior to attending the trade show, a list of registered attendees can be obtained. Promotional kits will be extended to these visitors offering them product information literature and the opportunity to schedule a meeting for the trade show. Setting appointments with visitors prior to the launch of the show is essential.

The product will continually be offered with an incentive program that targets the B to B framework. The purchase of twenty units earns the donation of one unit. It will also be encouraged to return used pill bottles to Intel, in prepaid packaging, to receive discounts on future products or services.

PLACE

The key accounts selected from the industry of assisted living facilities are all large national companies that manage their own purchasing. Therefore, the product delivery will primarily be handled through an outside manufacturer representative. However, industry endorsements will also be vital to the placement of the product.

Within the home building industry the key accounts send the purchasing department to trade shows or out-source purchasing to design centers that purchase at the same trade shows. It is necessary for the product to be placed at such shows to increase the exposure of the product to these targets. The Association of Home Builders Show is a necessary annual placement for the product to capture these key accounts as it is the largest show in the industry.

The hotel industry uses purchasing firms to acquire furniture, fixtures, and equipment. Therefore, it is necessary for the product to be placed in accordance with such purchasing firms. Benjamin West, being the key account to tackle in hotel purchasing, would primarily be managed through a personal sales force.

Overall, when targeting the B to B framework, Glimpse will be placed through personal selling and tradeshow exhibits. Glimpse will debut in this framework as an exhibit at the International Builders Show and Medtrade. Additionally working with Benjamin West, will allow the product to be placed at a highly publicized hotel opening. Glimpse will also be placed in consumer advertising to support a pull through effect to promote sales in the B to B framework. Industry endorsement from the Center for Assisted Living Facilities will also be utilized. Further details of these placements are available in Appendix Document K.

PRICE

The technology, features, and positioning of Glimpse create an atmosphere that would support a premium priced price product. However, as Glimpse works to replace traditional bathroom mirrors and medication tracking devices that are priced much lower, a premium price for Glimpse becomes less attractive. Glimpse will be priced at \$2,500 to support its customers' motivations and abilities to purchase and to position itself as a reasonable replacement for traditional competitors. This price is set for years one through five. The price is ultimately placed to ensure that Glimpse will be competitive with the market alternatives as well as financially feasible for its primary targets.

As production costs decrease over time and sales of Glimpse begin to target the consumer market, the price of Glimpse will lower. By year six, Glimpse should sell for an estimated \$700.

PEOPLE

Securing manufacturer representatives is essential to support the sales function.

Richard Taylor, Director of Human Resources, will work in conjunction with Brian Krzanich, General Manager of Manufacturing and Supply Chain, to secure these representatives. As the product is sold primarily through tradeshow personal contact, these representatives will be highly involved with the sale of the product.

PHYSICAL EVIDENCE

The actual product will be placed or the product will be placed with scale adjustments at tradeshow events. Therefore, the physical evidence that the consumer comes in contact with will be accurate to the product they will purchase and bring home. The products will be placed in areas that are very clean and secure, where the physical evidence creates a sense of assurance while the consumers interact with the product as it is placed in an advertisement.

The sales of the B to B framework lead to the product being placed in environments where consumers will come into contact with them: hotels, assisted living facilities, home development sites. While the physical evidence of these locations can not be heavily controlled, the selection of targeted B to B customers will ensure that the product is placed in proper physical evidence. Initially targeting high status B to B customers in this framework that build a reputation on reliability and security will place the products in physical evidence that conveys reliability and security which are crucial for the sale of Glimpse

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