

## Service Innovation Plan

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Service Innovation Management

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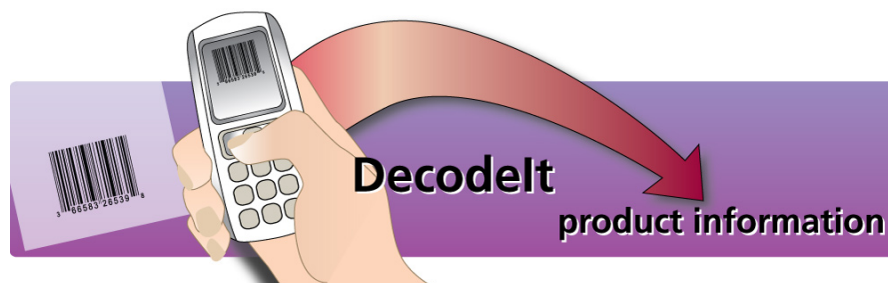
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## EXECUTIVE SUMMARY

The Decodelt project began with the simple question: What do you do if you need more information to make an in-store product purchase? Using a cell phone with integrated camera, our service will connect consumers, products, and related information.

Utilizing various Service Innovation methods and tools gathered from the University of Michigan's Ross School of Business course "Service Innovation Management" taught by Professor Nigel Melville, this basic concept is developed during the course of this paper. Innovative tools such as persona development, service blue printing, blue ocean strategy, and user-centered design were combined with standard business approaches such as Porter's Five Forces Analysis, basic marketing development, and revenue model exploration to come up with a starting point for what could potentially become a highly viable service. In addition, basic developments of the technical aspects of this service innovation were addressed through interface sketches and data flow diagrams.

True to the iterative design process, this multidisciplinary exploration of an idea culminates with yet more brainstorming, inquiry sets for further in-depth research, infinite potentials for diversification, and need for prototypical user testing. The question this service will bring about as part of its addition to the ubiquitous computing cloud is "How can Decodelt simplify your life?"



## INTRODUCTION

### Initial Pitch

This project began with the simple question: What do you do if you need more information to make an in-store product purchase? Using a cell phone with integrated camera, our service will connect consumers, products, and related information. Product information can include manufacturer information, product reviews, recall information, coupons, price comparisons, and more. Our hunt statement: How can we utilize emerging cell phone based barcode scanning technology to make life easier?

### Group Members

Gaurav Anand is a graduate student of Human-Computer Interaction at School of Information (SI), and joined the team because he "finds this service very cool!" To the Decodelt project, he brings prior experience in improving user experience of SMS-based social networking service and management of web and user experience of a large e-learning portal. Clearly, Gaurav has a passion for developing innovative design solutions for customers' needs.

Sunny Beach is a School of Information graduate student specializing in human computer interaction. His interests include user interface design, programming, and social uses of computers. Sunny brings leadership and an excellent background in graphic design to the project. This whole idea came from Sunny's observation of an ad in *Wired* magazine, and since then he has been functioning as the CEO of Decodelt. This project represents an opportunity to investigate the feasibility of a seemingly "simple" idea.

Jessica DuVerneay, a Tailored student at the School of Information, joined the group after seeing the ad from which the initial pitch was derived and thinking "Wow, that's neat!" She brings organization, time management, user centered design, empathy, librarian-strength research capabilities, a little bit of business sense, and document formatting skills to the Decodelt team.

Michael McGregory, an MBA student, was interested in the Decodelt concept from the initial pitch. He's worked with barcode based information systems used in hospitals and was intrigued by the possibility of adapting that technology for consumer use. As an "IT Pharmacist", Mike brings knowledge of barcode technologies, databases, and healthcare information to the group.

Beilei Zhang is a graduate student of School of Information specializing both in Human Computer Interaction (HCI) and Information Economic and Management Policy (IEMP). She joined the team because her great interest in mobile service and the relationship to her another current project the Google Map for Mobile (GMM). She brings Information Seeking and Retrieval Processes (IS&R), computer science, user centered design, social networking and a little sense of management into the group.



## SERVICE OUTLINE

### Research

#### *Methods*

Before narrowing the plan to a concrete project, research had to be done to evaluate the current technology, applications of the product, competitors, intellectual property rights, potential uses, and potential users for Decodelt. Using a multitude of resources including internet searches, informal interviews, brainstorming, class readings, patent research, and scholarly publication inquiry, our team gathered about 30 resources which we archived collectively on our group managed wiki. (See APPENDIX A and the Works Referenced page for select research and brainstorming artifacts)

#### *Findings*

From informal interviews we found that users would most likely want to use this technology for health related objectives, as described in the Problem Definition section below. We interviewed about 6 technical and non technical users, and found that we should ensure that the applications designed for the phone should be cross-platform and employ a “black box” strategy where the user has little to no knowledge of the workings, and simply scans a bar code and receives information.

Our literature review includes primary press releases and industry reports highlighting the prevalence of scanning technologies in global markets, specifically in Japan and Europe. Through our reviews of current material and web sites, it appears as if ScanBuy and ScanLife are two companies with strongholds on the intellectual property with which this concept is developed. According to ScanBuy’s web site, they have patents on the broad category of using barcodes and cell phones together. However, at this point this technology is being used primarily for commercial interests and activities, such as buying train tickets via phone, as is being piloted in London right now.

#### *Analysis: Porter's Five Forces*

We completed a rudimentary five forces analysis to further narrow our project based on market forces. At this point, the supplier power in the industry places downward pressure on its economic attractiveness, but the potential to tap into a blue ocean and quickly raise entry barriers with licensing and partnership deals make this a reasonable space to enter. We note that once Decodelt is launched and gains any momentum this analysis will need to be revised. Having recognized the potential issues and identifying strategies to keep Decodelt in a strong position, we have a better change to succeed with this new service.

##### 1. Rivalry (Moderate)

Currently the rivals are other services that offer up to date information on product warning, nutrition, and safety recalls. WebMD and HealthLine websites are the most clear information portals. These firms generally compete on reliability, approachability, and brand recognition. However, because there are no services for average consumers that provide this type of data at the point-of-purchase this is an area where the advantage is clearly set for Decodelt to avoid direct competition in a blue ocean.

##### 2. Threat of Substitutes (Low to Moderate)

At this point, there are information substitutes like web information portals and technology substitutes for delivering content to a cell phone, but these are poor alternatives to the specific value provided by Decodelt.

### 3. Buyer Power (Moderate)

Buyers of this service have a lot to say and because of this we need complete buy in from our target demographics for this to work. The added value of the information must weigh out the time it takes for the customer to use the service, so it will not be effective. The information provided on the phone must also be authoritative; if initial high levels of trust are not established, the buyer will have no interest in this service. Still, as Decodelt will be a first mover in this point-of-purchase information market there are few 'true' substitutes for a consumer to switch to. This lessens their buyer to some extent as it is unlikely they would switch to a competitor and force prices down, only that they would exit the market.

### 4. Supplier Power (Strong)

Decodelt will require a licensing deal or partnership with ScanBuy and may face pressure from wireless service providers to share revenue in addition to the standard text messaging rates for consumers. Given the relative size of these suppliers to Decodelt and a lack of alternative channels to deliver SMS messages to cell phones, Decodelt is in a weak position with respect to supplier power.

### 5. Barrier to Entry (Low to Moderate)

Government policy on the privacy and security of patient health information and the need to build a perception of authoritative/reliable information may prove to be a modest threat to entry. This is especially true for firms that have had publicized problems with protects other types of consumer data (like wireless providers) but may want to enter this space. At this point there few other barriers for new entrants, however since there are relatively few suppliers (ScanBuy, Wireless providers) there is an opportunity to raise new barriers if Decodelt can obtain exclusive licenses to use the existing infrastructure.

## *Analysis: Blue Ocean Strategy* APPENDIX B

There are several driving forces behind an imperative to create Decodelt Blue Ocean. Established Internet-based services, such as WebMD and HealthLine, have substantially improved people's access to health-related information. While supply of such services has been on the rise, there is no clear evidence that people are easily able to search and consume and derive a tangible value from the medical information provided by such sites in the spontaneous and authoritative way provided by Decodelt. Companies have tried to come up with numerous features such as medical blogs, discussion forums, chats, ask-us services, specialized search engines, or even open access medical databases, but they all have resulted in accelerated commoditization of medical information. The result has been increasing competition among the suppliers, but no great value for the customers at the point of service.

In sharp contrast to companies providing traditional competition-based medical information, the Decodelt blue ocean does not at all consider the existing competition as the benchmark. Instead our service makes it irrelevant by introducing the value of 'information at point-of-purchase' to the customer. From what is described as the *reconstructionist* view (Kim, 108) therefore, the Decodelt Blue Ocean does not take industry structure as given, but creates greater value for customer (of medical information) at a reasonable, per-SMS, cost structure.

The Decodelt strategy canvas gave us a diagnostic framework for building a compelling service. It well captures the state of medical information in the current Internet-based market space. It helped us identify the factors the internet-based medical information industry currently competes on, and what customers receive from the existing competitive offering in the market.

As is evident from Appendix B, the horizontal axis captures the range of factors that industry competes on, and what new factors the Decodelt service introduces, some of which are as follows:

- Wide variety of information
- Time it takes to search and get exactly what the customer wants
- Trustworthiness/ authoritativeness of the information source
- Information mobility
- Ease of search
- Conciseness and relevance of information
- Customized response

The vertical axis of the strategy canvas captures the offering level that customers receive across all of the above key competing factors. The *value curve*, the basic component of the strategy canvas, is a graphical depiction of Decodelt's (Blue Color) relative performance across industry's (Internet, Red Color) factors of competing. A high score means that Decodelt offers customers more than the Internet can offer.

## Problem Definition

### *Description*

While our initial brainstorming revealed countless ways this idea could be developed, we have decided to focus on providing consumer health and safety information. First, there is a clear demand for this type information as it consistently ranks among the most searched for data on the internet. But more importantly, health and safety information consistently resonated in our interviews as a point-of-purchase need. A mother may be aware of a lead warning on toys, but usually doesn't have a list of affected model numbers when shopping with her children. Those who adhere to strict diets due to medical conditions shy away from new things until they can confirm it is safe to use a new product through research. A patient who just had a heart attack knows he should improve his diet, but has trouble making sense of the complex ingredient lists and product marketing. Empowering these individuals with relevant, accurate health and safety information at the point-of-purchase is what Decodelt is all about.

### *Prototype Uses*

The Decodelt concept of providing product information at the point-of-purchase has clear applications in the realm of consumer health and safety. The initial Decodelt prototype will focus on three types of information. Allergies or intolerances to food and medication, dietary advice, and product recalls.

The first two information types would require users to provide initial profile information to Decodelt. While this might deter customers looking for more general product information such as a review for a DVD player, we feel that consumers with specific dietary needs will value this service enough to make user profiles a viable option. The profiles would outline which allergies or medical conditions that user might have wants to check their products against. Additionally, users could request advice for various types of diets (e.g. heart healthy, diabetes friendly, vegan, etc) and their preferred type of advice (e.g. tough-love, gentle reminders, just the facts). Once the profiles are configured, it's time to shop where Decodelt will provide product information tailored to the user based on their profile. Product recall information can be provided without a pre defined profile.

Additional value is provided via the Decodelt web interface. If users wish, they can use their scan history to search for more information when they get home or be alerted if recalls or other new information becomes available on a previously scanned product.

## INTENDED AUDIENCE

### Key Markets

Based on a pool of informal talking with potential users, self-experiences and brainstorming, we extracted a massive amount of key ideas related to this innovation service and design ideas for building a versatile Universal Product Code shopping platform.

To better analyze the patterns in the behavior to use our Universal Product Code shopping service, we decided to focus on the users who have a need for more information about the product they want to purchase. By identifying similarities and differences in users based on variable scales of product information need, we finally nail down our users to those who care more about allergy, medication, nutrition and want to receive product recall information. This seems to be a sensible plan based on the current focus of this technology on commercial applications, and is a small enough niche to be considered a possible blue ocean that other competitors will avoid in favor of other niche markets utilizing the same technology.

### Personas (APPENDIX C)

The primary goal of developing several personas for our service is to get a detailed understanding of our key market users' behavior. We focused on their needs instead of relying on our opinions with the intent of designing a tool that better serves the end users.

A secondary goal of creating personas was to encourage each group member to brainstorm and share diverse ideas so that we could get a better understanding of the target users and decide which ones were most important influences in our service design. We wanted to not only answer "What do these people have in common?", but also identify the relationships between problems they encountered and explore needs that they'd like addressed.

## PRODUCT DEVELOPMENT

### Interface, Interactions, and Technical Scenarios

#### *Overview*

By keeping our users (personas) at the heart of our design activities, we brainstormed numerous possibilities of the breadth and depth of Decodelt service. All of our team members had innovative ideas and vision about the service, but we found it difficult to achieve a common ground of exactly how we all envisioned the service will work. We had numerous 'design' sessions wherein we encouraged all team members to come up with as many wild ideas of the user scenarios as possible. Team members also came up with lot of interesting 'hunt' statements, making it hard to focus on one idea.

As we gathered ideas, our goal was to integrate the patterns of ideas. We confronted various questions about available technologies, phone subscription services, personas' level of comfort and willingness in using them, and the design of interaction that would imply the minimum monetary subscription-like costs for users, among others. We also explicitly considered how we could integrate the design elements that we had discussed in the class (Melville):

- Motion
- Space
- Time

- Appearance
- Texture
- Sound
- Idiot-proof
- Manipulation
- Feed-back
- Feed-forward

We discovered that in-store mobile-based interaction certainly requires high user-engagement on issues of concise and information appearance, quick feedback and -forward. We also brainstormed how a third-party mash-up algorithm could work well in producing the concise information display we desired. We also decided that the service should be minimal on information manipulation. However, if required, each manipulation will cost user an SMS. Issue of texture was also relevant for our project, as there are innumerable mobile phone models and browsers available in the market. We explicitly decided that we will develop our service to work on not only on high-end 3G phones but also traditional 2G devices. If we were given more time, we had thought of developing different versions of service, wherein different users with different phones and browsers (e.g. iPhone) will experience different surface-level experience with the service.

While all of our team members had great divergent ideas (one can be seen in the raw sketch in APPENDIX A), we had to integrate these thoughts along with the limitations of currently prevalent technologies. Our thoughts on what we finally zeroed-in on can be best represented in the form of following artifacts (made by different team members):

*Interface Sketch: APPENDIX D*

The diagram has two panes. The upper pane shows Steve Thompson's camera phone that clicks the picture of the bar code present on in-store medical products. The lower pane represents how Steve sends this barcode information to the Decodelt server. Each yellow box represents system state/ phone screen at each level of interaction. The service starts by Steve sending the bar code picture via MMS to the Decodelt server. The Decodelt server has been implemented to aggregate information from various third party product databases. The server can also recognize Steve based on his Subscriber Identity Module (SIM) number. Based on Steve's identity, the server mashes up Steve's personal profile and medical history with the third-party product information (Tylenol in this example,) and creates and presents very relevant, customized medical information for Steve. Steve's main value from the service ends at this point, but he has various options. For instance, he may opt to save this information on the phone, send to a friend, or even view more details on the web to make a purchase decision later-on. If Steve opts to send see information on the web, he starts off another SMS-based interaction by sending another request to Decodelt server.

*Data Flow Diagram: APPENDIX E*

A data flow diagram is a graphical representation of data flow between system and outside entities. The primary goal of using data flow diagram in our analysis of this Decodelt service is to provide a clear representation of the business function. The ellipse shows the source or destination of a data flow. The line arrow shows the flow direction of information from its source to its destination. The rectangle is a holding place for information within the system.

*Service Blueprint: APPENDIX F*

The service blueprint model was modified from the original model developed in the Bitner article "Service Blue Printing" because as a technologically heavy service with little or no human interaction from the user end the described blueprint model made little sense. Once modified, and technology aspects were exchanged for human counterparts, the team found the service blue print a good way to

narrow down their huge field of brainstorming given the interaction the user would hypothetically have with the service.

## **Revenue Model Options**

The Decodelt service presents several methods for generating revenue. Once users have begun to develop usage patterns and the system has been enhanced, the revenue model can be refined and further developed utilizing one of the following options:

### *Ad Supported*

Decodelt provides an ideal method to market products directly to clients. Firms have the ability to influence the purchasing habits of users at the moment of decision-making. By providing ads related to products being searched, advertisers are able to find customers that are ready to buy. Ads could be placed by product manufacturers or by retailers. These ads could focus on product differentiation based on quality, price, or performance. Manufacturers and retailers would also have incentive to increase the amount of data available on their products, increasing the likelihood that their products would be purchased.

### *Market Research Driven*

Firms who do user research would potentially be customers for the Decodelt search logs. Similar to the information that supermarkets already collect on shoppers, this data could be used to indicate shopping preferences and patterns. This would rely on consumers scanning most or all of their potential purchases, then indicating which ones were purchased. This revenue model has the potential to alienate users and may prevent users from using the service.

### *User Subscription Model*

In order to avoid privacy issues related to selling searches to market researchers, users could subscribe to the use of the system for a nominal fee. This fee could be related to the number of searches they perform or could be a flat fee for access to the system. It would also be interesting to investigate providing a one level of detail for subscribers and another level of information for non-subscribers.

### *Grant Funded*

Decodelt could be supported by grants through the National Institutes of Health or a similar organization. The service would operate in a mode to assist consumers make decisions to support specific dietary programs. Users would have free access to critical information to support their purchases without the burden of integrated ads and without the fear that their purchase information would be sold to outside parties. Decodelt as outlined in this proposal has clear public benefits, and most likely would be run as a not for profit organization.

### *Cellular Provider Partnerships*

Decodelt could also partner with cellular providers to entice consumers to upgrade their phones and phone plans. The service relies heavily on photo and data transmission to and from consumers. This arrangement could be in the form of discounted access to the cellular networks or a portion of the revenue generated from consumer multi media connections. As a potential heavy user of next generation cellular connections, carriers are important partners for Decodelt.

## FURTHER RESEARCH

Two other areas of research that need to be investigated prior to developing a prototype are patient privacy and medico-legal information. The Healthcare Insurance Portability and Accountability Act (HIPAA) protects a patient's medical information. Since some Decodelt profile information will likely fall under this law we will need to comply with data privacy and security standards. Fortunately, there are other consumer driven repositories of protected health information on the web such as web-based personal health records (PHRs) so there is a precedent to follow.

Legal liability for the healthcare information provided is another area that must be explored fully. Again, there are established precedents for providing this type of information outside of a traditional patient-to-provider interaction. The main distinction to explore is that we are offering a 'tailored' service which might open us up to additional legal concerns. At any rate, we will need to look into a medical information review board and healthcare information quality certifications like HonCode.

From a technical view, cellular phone camera technology is not currently optimized for taking close-up detailed photos, leading to a photo that cannot be decoded by computer. The number of phone and PDA devices that contain integrated bar code readers remains a small percentage of devices. In order to achieve a fully functional service as we originally envisioned, several technological problems must be addressed, and therefore more research and development is necessary.

At this point, technology exists to complete this process, but only with the two dimensional barcodes – meaning the barcodes that appear to be in a variegated checkerboard pattern. With Decodelt, we envision developing the technology to complete this task using existing line bar codes, or UPC symbols as this infrastructure is already in place and changing the barcode infrastructure seems, while not implausible, certainly improbable.

Finally, as Decodelt is a Cell 2 Controllable Convenience (i.e.: delivery is important, location is not) service per the MIT Sloan Taxonomy of Service Innovation, we will also need to invest much time, research, and thought into allowing customers a truly customizable experience. This can "...enable customers to reach and use a service more easily – and can open up untapped markets." (Berry, 59)

## NEXT STEPS

Decodelt represents a relatively novel idea – providing authoritative information during the physical product purchase process. This intervention has several repercussions and represents changes in the consumer, retailer, and manufacturer status quo. Some potential ideas and markets outside of the medical scenario we researched for this iteration of Decodelt we developed in the brainstorming process include:

- Scan a DVD player or other electronic device at Circuit City to read a review and check pricing from other sources (Pricewatch or Best Buy)
- Scan item A and get a list of additional products scanned by others users who also looked at item A; a "you might like these..." recommendation feature
- Check for recalls
- Check for new models or updated versions (to prevent getting last year's model)
- Upload list of electronic products (home theater or computer related) and scan an item at the store to check compatibility with current devices
- Upload list of medications (need to be HIPAA compliant) and then scan over-the-counter products or food to check for drug-drug or drug-food interactions or questions to ask a health care provider
- Scan a weird or new ingredient at the store and get a list of recipes
- Create a gift registry without having to figure out each store's scanners or wait for help

- "What is it for...?": scan unfamiliar items at Home Depot or any store for that matter to figure out what something is/does
- Cross reference a product's maker with a list of "green" companies or look up a brand's parent company to see if they are part of an 'evil' conglomerate

To determine potential usage patterns our group plans to build a functional web version of the service outlined and test users in the target demographic. Users would be able to use a mobile or a computer based browser to find product information. Our group plans to conduct user tests as and make interface and interaction improvements. This phase would also test the reactions and wants of retailers as consumers become more educated about products that they purchase.

Besides honing our idea, completing more technical research, and executing prototype research with actual users, Decodelt would also have to employ some standard business tools. These include but are not limited to activities such as developing a marketing campaign, gathering financial forecasts to attract investors, possibly developing relationships and partnerships with cellular phone companies, and completing patent negotiations with ScanBuy and any other holders of intellectual property salient to this service innovation.

Concretely, this idea will be presented by the team in March 2008 at the School of Information's *expoStition* – a venue in which like-minded technology and service innovation enthusiasts will be able to learn about our idea thus far, and hop on board if interested. Team member Sunny Beach is currently developing a web site, marketing campaign, and a prototypical database to illustrate this idea to potential collaborators.

## CONCLUSION

This endeavor began with an interesting technology concept- scanning bar codes to receive more authoritative information on a phone. At first much of our energy was focused around gathering information on companies doing this already, and what was behind the technology. After investing possibly too much time into the research about existing technology and trying to figure out how the technology works, we moved onto brainstorming ideas.

At this point, we became stuck in the process of brainstorming – after all, what *couldn't* this service provide? Full of energy, we embarked on the task of including the user as the focus of our service design and development. Though our research was not by any means comprehensive, we found through service blue printing, interviews, and interface prototyping that narrowing it to health and safety needs would be the most useful at this stage in the game. In sum, using service innovation methods helped us moved from marveling at a technology to designing with people in mind.

While we have covered quite a bit of ground in seven weeks, there are vast gaps in our process thus far: we have missed entirely business basics such as concrete marketing schemes, legitimate financial forecasts to provide to angel investors, SWOT analysis and so on. Furthermore, there are several service innovation tools and strategies that we (while they were in the back of our minds and evident in our process), did not fully exploit during this process. The big "take home" for the members of the group is that traditional business models can and must be supplemented with innovation techniques and tools if a robust service is to be developed. Additionally, we are engaged in our work and hope to continue researching, supporting, and developing Decodelt.



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### Relevant Web Sites

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<http://www.scanbuy.com>

<http://www.scanlife.com/index.html>

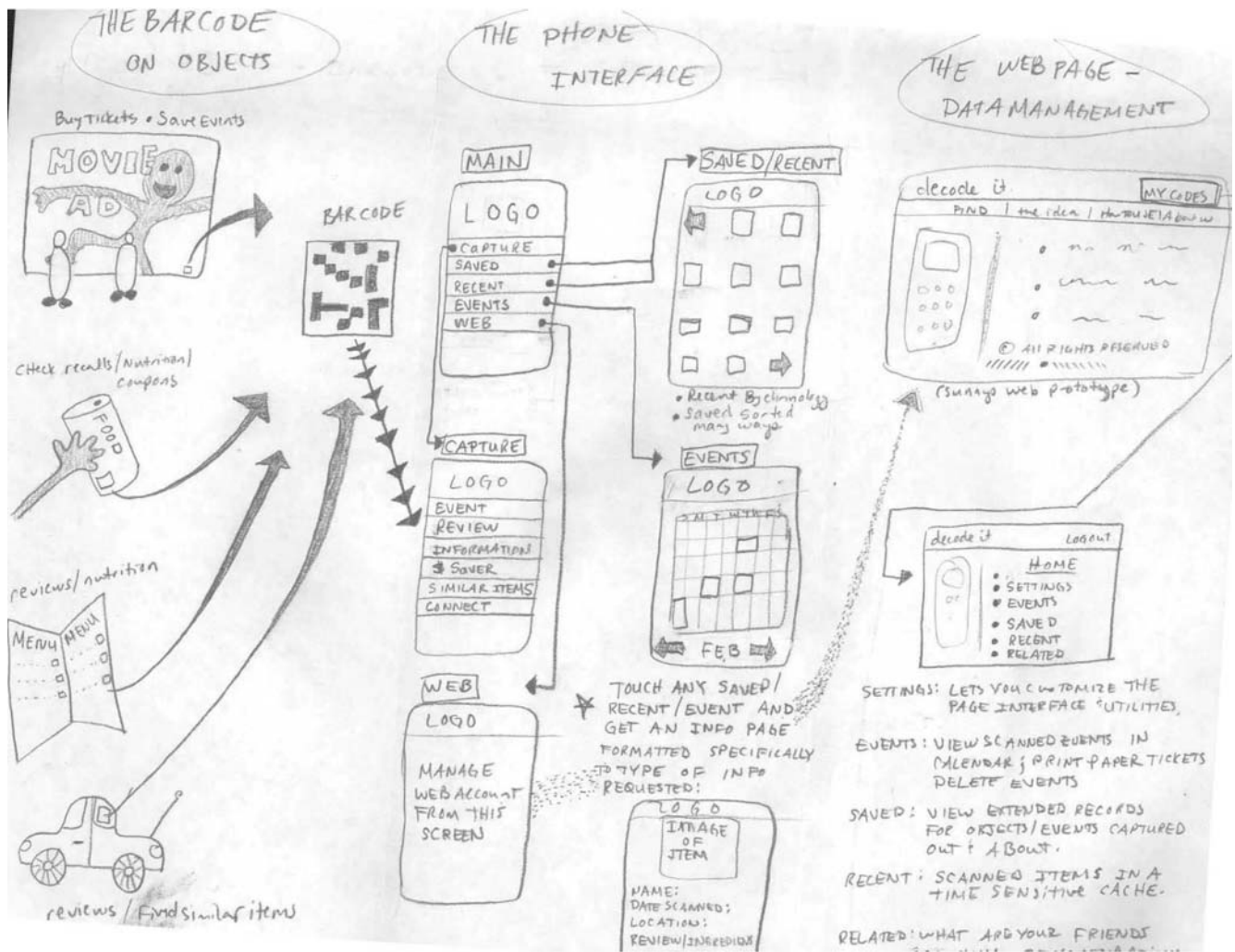
<http://theponderingprimate.blogspot.com/2007/12/sprint-promotes-scanlife-mobile-bar.html>

<http://www.upcdatabase.com/>

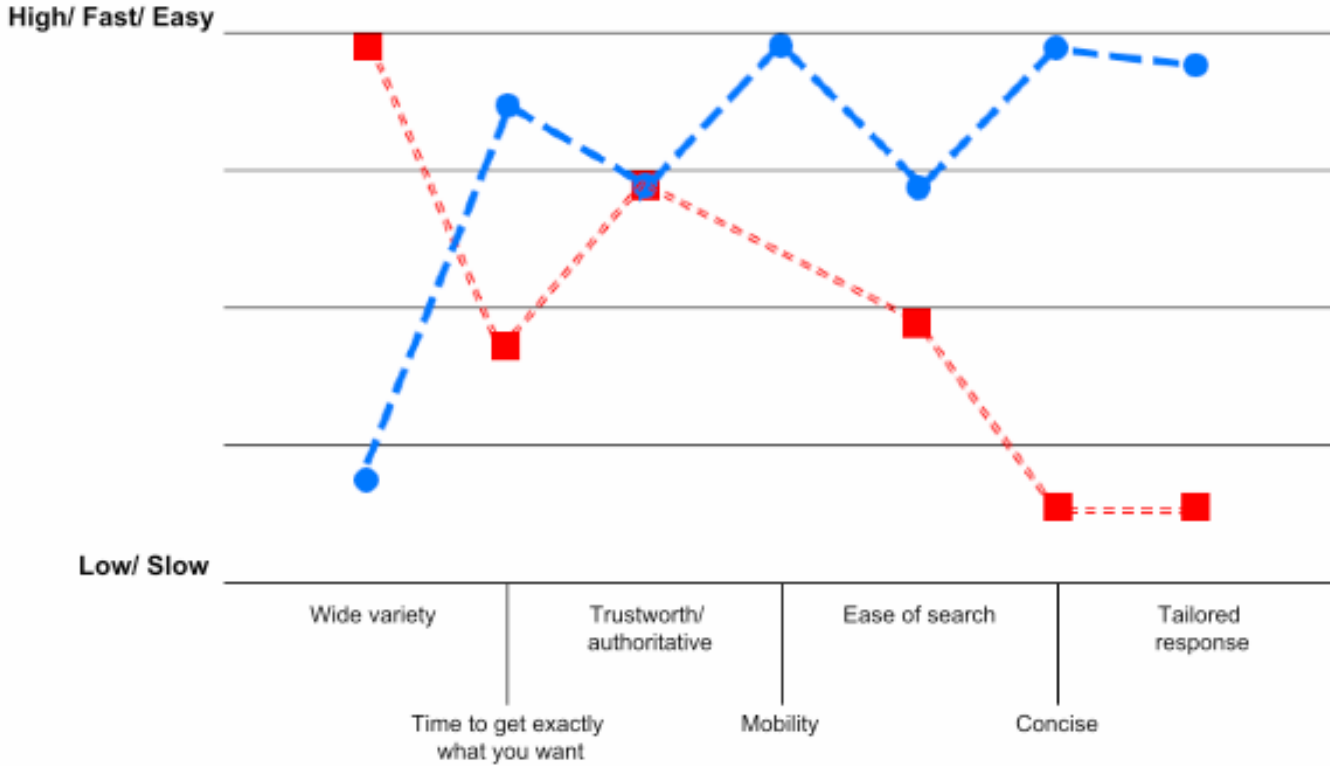
### Video

[http://www.youtube.com/watch?v=87kj4t\\_vQb8](http://www.youtube.com/watch?v=87kj4t_vQb8)

# APPENDIX A: BRAINSTORMING ARTIFACT



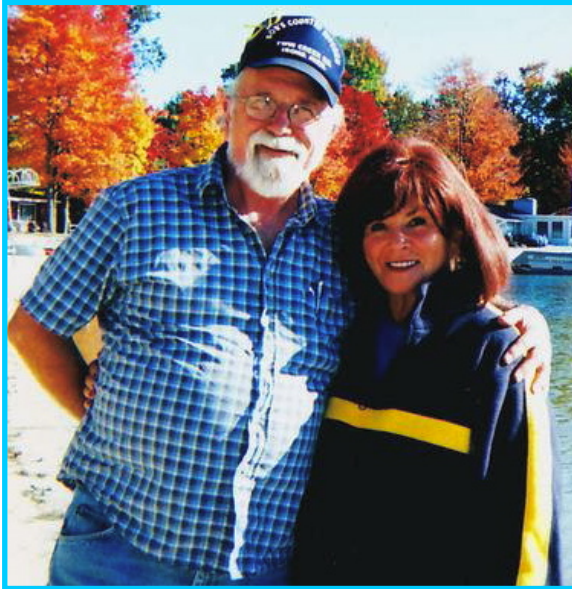
**APPENDIX B: BLUE OCEAN STRATEGY CANVAS**



**The Strategy Canvas of Decode/it Service, February 2008**

## APPENDIX C: PERSONAS

### Bill and Sandy



*"We wouldn't even have this phone if it wasn't for our grandkids, and all their emergencies. Well, that and I guess our health."*

Married Couple  
Male and Female  
Ages 68 & 71  
Bill is a retired auto factory worker  
Sandy works part time at a day care  
5 kids  
15 grandkids  
Income: 30K per year, included social security  
Cars: Chevy Tahoe 99, Chevy Lumina 02

### Life Style

**Hometown:** Lansing, MI

**Living Situation:** Homeowners – children often stay with them on and off

**Traits:** Loving, Disorganized, Busy, Active, Social, Continuing Education, Youthful

**Values:** Republican Party, Family, Christian-Baptist, Saving money, Care Taking

**Hobbies:** Antique shows, camping, cooking, eating out, road tripping, home renovation

**Health Issues of concern:** *Bill:* High Blood Pressure, Stroke, Heart Attack, Emphysema *Sandy:* Type 2 diabetes, chronic pain, injured knee, back problems. *Kids/ Grandkids:* Peanut allergies, asthma, Chronic Fatigue Syndrome, Medical Allergies, ADHD

### Technology Habits

**Technology Proficiencies:** Owns and uses one shared cell phone for calls and as a phone book, can use a digital camera, little computing experience but can use public library computers for email access and web browsing. Mainly use the internet to do medical research about prescriptions and self-diagnoses

**Technology Attitudes:** Likes technology, but hasn't had the time or money to learn about it lately. Somewhat skeptical of technology that offers a "quick fix" or is not immediately intuitive, but will ask grandchildren for help or clarification of technology's benefit or use when needed.

### Interaction with "Decode-It"

Bill and Sandy report that they would most likely use "Decode-It" to look up nutrition information on food for help with management of Sandy's diabetes and the grand children's allergies. This is always a problem whenever they go out to eat, which is frequent. Bill said he might use it while shopping for big-ticket items- he frequently finds himself "needing" to buy garden equipment like riding lawn mowers with little or no prior research, and said this seems like a "neat option" given that it is very important to him to buy American made products. The would be willing to pay up to 25 cents for information given to them over their phone, and would prefer to have this cost rolled into their monthly phone bill. They do not see any benefit to the online account side to "Decode-It" as they don't use the internet regularly, and are more interested in instant authoritative information access.

## Jeff and Gwen



*"When it comes to my baby's safety, there's no such thing as too much information."*

Married Couple  
Male and Female  
Ages 33 & 42  
Jeff is a mechanical engineer  
Gwen is professional pastry chef  
1 kid – 1-year-old Molly  
Income: 100K per year  
Cars: Honda CRV 2007, Volkswagen Jetta 2002

## Life Style

**Hometown:** Ann Arbor, MI

**Living Situation:** Homeowners

**Traits:** Overworked, Homebodies

**Values:** Republican Party, Family, Christian-Methodist, Trying to save but still paying off student loans

**Hobbies:** Motorcycles, shopping, video games

**Health Issues of concern:** *Jeff:* Seasonal Allergies *Gwen:* Migraine Headaches

## Technology Habits

**Technology Proficiencies:** Both have current model cell phones that they replace every two years and will occasionally send a text or picture message. Between the two them they have 3 iPods (3G, shuffle, mini) and are ready for new modes. They have a desktop computer at home that is primarily for web browsing and on-line shopping. Other PC uses include posting baby pictures via Picasa, on-line banking and bill pay, and doing their taxes.

**Technology Attitudes:** Both prefer technology that is easy to use / low maintenance. Jeff used to be a do-it-yourself computer guy but doesn't have the time anymore, though he still has a thing for gadgets.

## Interaction with "Decode-It"

Jeff and Gwen has different reactions to a health & safety focused "Decode-It". Jeff thought it would be cool to try out a few times but didn't see himself being a long-term user. Gwen, however, lit up at the thought of getting current recall and safety information for baby products and toys. She listed off several items she's had to return due to lead paint warnings and fully expected to scan every item intended for Molly. She also liked the thought of a "Decode-It" web application that would let her know if any of the items she bought had product recalls or warnings issued after she purchased them.

## Steve Thompson



*"Decode-it is a time saver for my life."*

- 45 years old male
- Some college
- IT manager @ PWB Marketing communications for 7 years
- Works 9 hours a day and spend an hour commute form home to working place
- Income range is 40,000 to 60,000

### Life Style

**Hometown:** Ann Arbor, MI

**Living Situation:** Married with Mary 10 years ago. Has triplets and a four-year-old girl.

**Traits:** Crazy busy, Knowledgeable.

**Values:** Various, from quiet to hectic

**Hobbies:** Before has triplets is a big fan of online computer games.

**Health Issues of concern:** He often has headaches (and blames it on the kids). He is a very picky eater.

### Technology Habits

**Technology Proficiencies:** Steve has an apple iBook for a year, a Dell laptop for 3 years and an old iMac for 6 years. He is comfortable with using both Windows and Mac. He gets most of news form NPR which is an local Radio station in Michigan. He is now using Palm Treo 650 as his cell phone with a data plan and with GMaps installed.

**Technology Attitudes:** Feels comfortable with almost all kinds of digital technologies. Before he has the triplets, tends to spend lots of time playing computer games. Now this fun is always interrupted by his litter kids, so he give up and stay more time with children.

### Interaction with "Decode-It"

Steve concerns about both his health and the kids'. Steve thought it is really a cool idea of this "Decode-it" application. Though he had never used before, he'd like to have a try as soon as possible. He is also excited about the future using the "Decode-it". It is so convenient that easily scan every items intended to buy and the platform will return with lots of detail information about the item, for example, the expiration data, nutrition face and so on. It is really a time saver when you have to stand in front of the shelf in a super market and with four little kids teasing around you.

## Susan Gray



*"I am a calculator of total percentages of everyday intake."*

- 26 years old female
- Is now getting Master degree in Public Health
- Work @ an IT project for Bronson Hospital in Kalamazoo.
- Single
- Income: 10-30 thousand.
- Lives in Ann Arbor and she is original from L.A.
- She has a pretty fast-paced life.
- Her work and life blur together and she works 3-4 hours a day.

### Life Style

**Hometown:** Oak Lake, IL

**Living Situation:** Single, living by herself.

**Traits:** Busy, Active, And Social.

**Values:** Fast-paced, risk taker. Frequent traveler.

**Hobbies:** shopping, singing, skating, and skiing, hanging out with friends, movies, photography, graphic design

**Health Issues of concern:** School of public health students. Do not have health issues right now. But would be more careful about prevent.

### Technology Habits

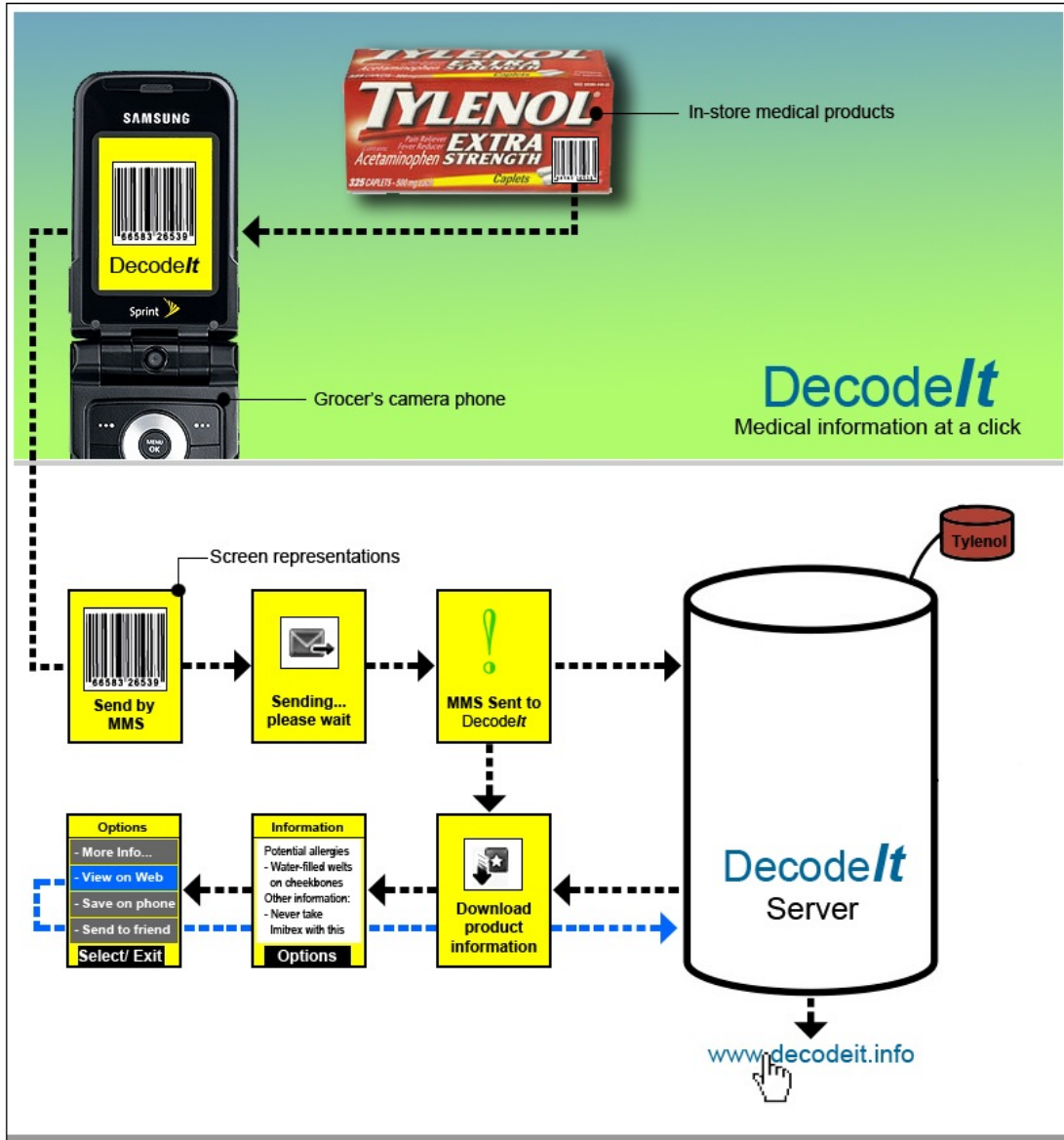
**Technology Proficiencies:** Uses an ASUS A6000 laptop, she's had it for two years. She feels not comfortable at all to use Mac but she prefers PC. Susan has a Palm 8800 cell phone; she uses the function of calling, alarm, camera, and sometimes texts. She doesn't have data plan on her cell phone right now.

**Technology Attitudes:** She uses both computer and cell phone as necessary; she is not the kind of surfing or browsing person. She doesn't want to spend lots of time wondering without exact purpose.

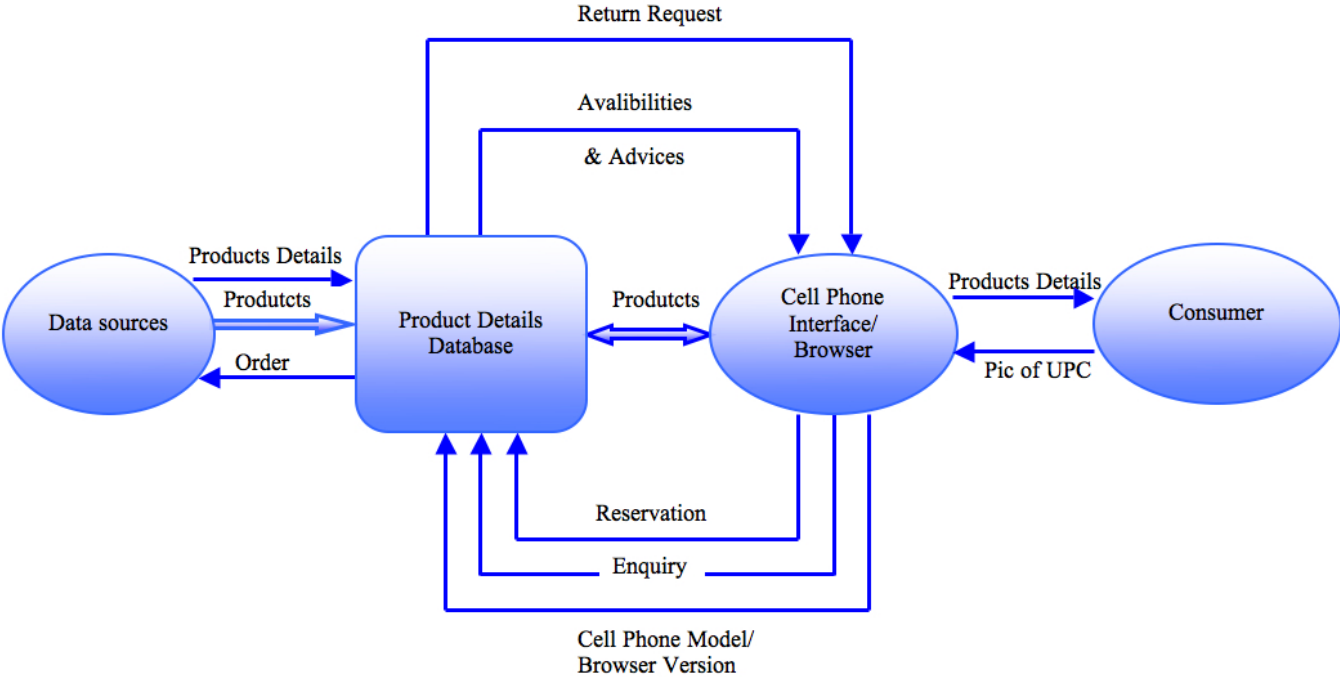
### Interaction with "Decode-It"

Susan self-describes that she mostly like use "Decode-it" to look up the percentage of nutrition facts in the total amount of every intake. Because she is school of public health student, she'd more prefer to eat healthy. It's really a big problem when she looks for favorite food in the supermarket, and most of the items you bought turn out to be high in fat and sugar. The total amount of fat and sugar double or triple the time of healthy intake everyday, while lack of vitamins. She uses "decode-it" to calculate the total percentage of various nutrition facts.

# APPENDIX D: INTERFACE SKETCH



APPENDIX E: DATA FLOW DIAGRAM



## F: SERVICE BLUEPRINT

### SERVICE BLUEPRINT: "DECODEIT" HEALTH AND SAFETY INFORMATION MANAGEMENT SYSTEM

CUSTOMER	Need	Information on product	Decode barcode for information	Receive info from decode it service	Save info for use later	Access info later	Access expanded info
	Action	Look at the product	1) Capture barcode image with camera phone 2) Send to "Decodeit" via phone	1) Access sent info 2) User interprets data	Save on phone	Look online at "Decodeit" web account or on phone	Look online at "Decodeit" data management website
PHYSICAL EVIDENCE	Artifact of Technology (Hardware)	Barcode on item	1) Image captured on phone 2) Sending notification on phone	Information on phone	Saved information on phone	Saved information on phone or online	Saved information online, expanded information screens
BACK STAGE EMPLOYEE INTERACTION	User-end Technology (Software)		Decodeit receives photo *processes image *sends info back to phone of user	"Decodeit" app embedded in phone displays info	"Decodeit" app on phone  "Decodeit" online data management website		
SUPPORT PROCESS	Provider-End Technology	Barcode Placed there by manufacturer	"Decodeit" Application developers				
			"Decodeit" database			ISP	
		Cellular phone system					
(time)							

