

Wireless Services Business Plan

by

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B.A., Economics
Yale University, 1998

Submitted to the MIT Sloan School of Management
in Partial Fulfillment of the Requirements for the Degree of

Master of Business Administration

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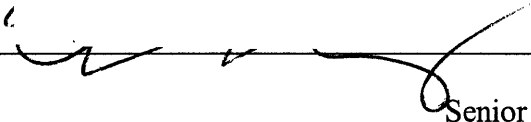
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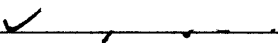
June 2005

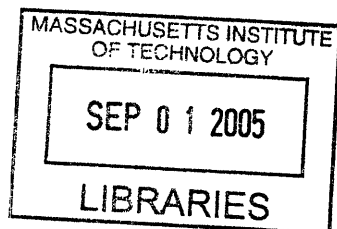
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Abstract

The primary goals of this thesis were to analyze the market for wireless applications/services and create a business plan for a viable wireless application. There has been tremendous hype relating to wireless data services in the past few years with significant venture investment not yielding many commercially successful companies. In reviewing the wireless services market, there appears to be significant opportunity for the right wireless application/service to gain significant traction in the marketplace and spawn a successful startup. It was my assertion that one could create a service that allows users to find information from a community of users on a variety of technology platform that would prove to be the basis for a commercially viable startup. In writing the business plan for this startup, <ihufs>, I believe that there is a business justification for creating a company that will offer this service solving a specific consumer need. I hope to pursue this opportunity post graduation and further explore the creation of <ihufs> and the <ihufs> platform and service.

Thesis Supervisor: Shari Loessberg
Senior Lecturer

<ihufs> Business Plan

Version 5.1

May 5, 2005

<ihufs> has prepared this business plan for internal planning and financing purposes. It is a working draft prepared for information purposes only. It is not an offer to sell or a solicitation of an offer to buy any security.

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Introduction

The process by which I ultimately created the <ihufs> business plan was a methodical approach in which I analyzed a number of possible areas before ultimately deciding to pursue the <ihufs> opportunity. I decided to focus on the wireless market for a number of different reasons including:

- Previous background in wireless applications, this was probably most critical to me for I wanted to try and start a company after graduate school
- Macroeconomic growth trends:
 - Carriers are now implementing next generation networks which will allow wireless data usage to grow
 - Changing demographic trends, those first generation users who embraced SMS are now entering the work force and generating disposable income which will allow for adoption of new wireless data services
 - Adoption of wireless data services abroad particularly in Asia, consumers have shown a willingness to use phones for non voice applications
 - Continued growth and penetration of wireless adoption in the U.S. Penetration in 2003 was 57% which was an increase from 42% in 2002.¹ New users are continuing to embrace wireless and current users have an average mobile phone life of only 2-3 years.
- Continued interest in wireless applications from venture investors and industry experts

After deciding to focus on the wireless application market, I went through a market segmentation to ultimately choose the <ihufs> concept. I talked with a number of individuals in the wireless app space including those at VCs, startups and large tech companies. In addition, I conducted significant secondary research using such research services as Yankee Group, Jupiter and Gartner.

I segmented the market into areas including community/networking, information finding services, advertising, location based services, content delivery, MVNO, wireless portals, ethnic and age based wireless services, gaming, personal information management and W-VoIP and looked at variables including different startup ideas, industry research available in the space, companies, VC investment, potential market size, ability to differentiate as a startup and potential challenges for creating a startup in the space. After doing an assessment of these variables, I prioritized those areas that warranted additional consideration. These included community/networking, information finding services, advertising and location based services.

In further analyzing these spaces, there a number of reasons that I thought it would be difficult to start a stand alone company in any of these sectors. For example, in the community/networking space, there are already a number of entities such as friendster who have a significant user base and are rolling out mobile extensions of their current service offering. Likewise for pure mobile search, companies such as Google clearly

¹ Entner, Roger. "The 2004 State of the Wireless Union." The Yankee Group. June 2004.

have a large competitive advantage to leverage their core platform. For wireless advertising, I thought there was a huge opportunity for advertisers to create targeted ads but there needed to be a platform by which users would demand such advertisements. There needed to be a compelling application to create a user base that would embrace wireless ads. Finally, for location based services there has been continued hype in the space without positive return. In addition, for pure LBS, carriers will have a significant advantage in rolling out apps since they control the handset.

By going through this analysis, I realized that there was no service offering currently that married these segments together. This epiphany served as the genesis for creating the <ihufs> idea. By creating a service that allows users to find information from a community of users, you could create a differentiated platform that would have a sustainable advantage (its user base) that would have a sound business model (supported by advertising). The <ihufs> service would, in theory, be able to have a competitive advantage by:

- Creating a user base that will be difficult to replicate
- Providing targeted search results that are specific to geography, demographics, etc.
- Focusing exclusively on search by community which will create a best in class service

In the rest of the business plan, I discuss the various aspects of actually creating <ihufs> from the financials and service offering to the sales and marketing approach. In addition, I analyze the market for specific apps as well as provide support for the <ihufs> premise. Finally, I discuss potential issues that may act as an impediment to <ihufs> ultimate success.

Executive Summary

Background and Service Offering

With the proliferation of wireless devices in the United States and the evolution to next generation networks, there exists opportunities to create compelling services on mobile platforms. While there has been significant hype regarding the wireless data space, now is the time to capitalize on macro trends including this evolution to next generation networks, the changing demographics of wireless data users and the widespread adoption of data service usage in Europe and Asia. <ihufs> intends on capitalizing on this space by providing a platform for individuals to access real time information anywhere from like minded individuals within their communities.

The rationale for creating such a service, beyond the macro trends, is that there is currently no good method by which to find information anywhere and anytime. Current service offerings such as Google SMS, directory assistance, calling friends, 422, etc. all have shortcomings and can not deliver targeted information for user queries.

The <ihufs> service allows users to use a variety of platforms such as IM and SMS to find information real-time with zero cost to the user. Users are assured of receiving relevant responses due to the fact that real people are answering the questions. This is not a search engine where answers are often times not relevant (and even less relevant when it comes to local search). <ihufs> is built on a community of users that have expertise and knowledge of local geographies, demographics, etc.

Business Model

<ihufs> business model will be based on advertising (including search and sponsorship) and longer term licensing. Advertisers will pay to provide targeted ads to both the Questioners and the Answerers. Based on a gmail like approach where the search engine will filter queries and responses based on keywords, advertisers will be able to provide targeted ads. These targeted ads will be able to command a price premium based on the expected conversion of such ads. In addition, advertisers will be able to sponsor specific communities, geographies, etc. and based on user preferences may be able to send broader email ads to users (based on demographic information as opposed to specific words like in the queries).

In addition, longer term there will be an opportunity to license the <ihufs> platform to enterprises, universities, governments, etc. who wish to create a closed network but reap the benefits of the <ihufs> model.

<ihufs> intends on having positive gross margins in 3rd Quarter of Year 2. <ihufs> will have positive net income and will become cash flow positive in the 4th Quarter of Year 3. <ihufs> anticipates total funding necessary of \$13 million in 3 rounds: a \$1 million angel/founder round at its inception, a \$4,000,000 Series A round 6 months into the company's development and an \$8,000,000 Series B round during Q1 of Year 2.

Income Statement

	Year 1	Year 2	Year 3
Income Statement Summary			
Total Revenue	20,774	851,098	5,060,586
COGS	(491,540)	(844,239)	(1,293,312)
Gross Profit	(470,766)	6,860	3,767,273
Gross Margin	-2266%	1%	74%
Total operating costs	(2,828,000)	(5,665,000)	(6,420,000)
Net income	(3,306,932)	(5,663,918)	(2,658,504)

Timeline and Key Milestones

Development work for beta release should take approximately 6 months. With an anticipated ramp up to a 44,000 person user base in approximately 6 more months, Version 1 should be released at the end of Year 1. After Year 1 development, much of the effort will revolve around increasing the user base culminating in a self sustaining enterprise by the end of Year 3.

Corporate

<ihufs> will be based in Santa Monica, CA and will initially roll out service in Los Angeles, San Francisco and New York. After initial service rollout and build of critical mass of users, <ihufs> may pursue partnership opportunities with social/other networking and (friendster, linkedin, etc.) other community based sites (ebay, expertexchange, etc.) to further build the user base as well as create targeted user groups. <ihufs> will employ best practices in all aspects including recruiting, culture, sales emulating such respected organizations including Google, ebay, salesforce.com, etc.

Management Team

<ihufs> original team will be comprised of Bong Koh, AA, BB, CC and [TBD]. Bios later in the business plan.

Market Research

In analyzing the market for potential <ihufs> services, it is important to have a sense of key macro and micro trends in key sectors including:

Macro trends -the overall wireless data market, demographic information for users in the wireless data market, decision making process for consumers in choosing wireless data services and international precedents for using wireless data services

Micro trends- specific desire to use applications including location based services, search, instant message (IM) and social networking.

Macro environment for wireless data services

Wireless data services has been an area that has had great potential for a number of years. Millions of dollars of venture funding have been sunk in this sector over the past year with mixed results. While voice adoption and revenues for carriers has increased significantly accompanying services has not kept pace. It is only recently that wireless data adoption has accelerated. The Yankee Group estimates that wireless data users totaled 47 million at the end of Q2 2004 and states that wireless data revenue in this quarter approached \$1 billion which is an increase of 160% since Q2 2003.² As one can see below, all the major carriers have a significant number of both subscribers and ARPU for wireless data:

Exhibit 1.
Big Six Carrier Performance and Focus in Consumer Wireless Data, Second Quarter of 2004

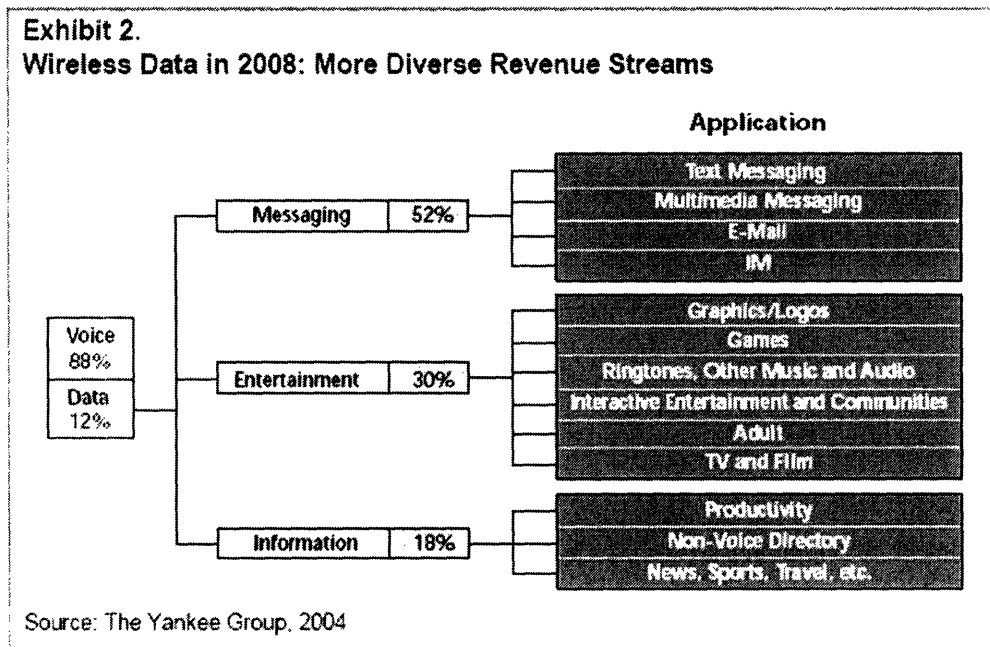
Carrier	Wireless Data Subs (in Millions)	Wireless Data Subs (Percent of Total)	Blended Wireless Data ARPU (Total Base)	Wireless Data ARPU (Data Users)	Wireless Data Contribution to Total ARPU (in Percent)	Areas of Focus
Verizon Wireless*	2Q: 12.7 3Q: 14.6	2Q: 31% 3Q: 35%	2Q: \$2.14 3Q: \$2.42	2Q: \$6.87 3Q: \$6.99	2Q: 4.2% 3Q: 4.7%	Messaging, downloads (early lead in games)
Sprint*	2Q: 6.9 3Q: 7.3	2Q: 41% 3Q: 42%	2Q: \$4.50 3Q: \$5.00	2Q: \$10.98 3Q: \$11.85	2Q: 7.2% 3Q: 8.0%	Visual communications (picture/video mail), multimedia (MobTV), iKTV and Sprint TV), downloads (ringtones, screen-savers)
Cingular	2Q: 8.4	2Q: 26%	2Q: \$1.47	2Q: \$5.75	2Q: 2.9%	Messaging, ringtone downloads
AT&T Wireless	2Q: 6.4	2Q: 29%	2Q: \$2.50	2Q: \$8.52	2Q: 4.1%	Messaging including interactive TV, voting/pooling
T-Mobile	2Q: 7.5	2Q: 49%	2Q: \$2.48	2Q: \$3.10	2Q: 4.5%	Messaging including mobile IM
Nextel	2Q: 4.4	2Q: 32%	2Q: \$1.70	2Q: \$5.33	2Q: 2.4%	Messaging, business applications (including productivity)
Total Market	2Q: 46.6	2Q: 27%+	2Q: \$1.66	2Q: \$6.75	2Q: 3.4%	N/A

Source: Company reports and the Yankee Group, 2004
 Notes = Yankee Group estimates
 N/A = Not applicable
 *Although most of the Big Six carriers (now Big Five) have reported 3Q04 results, Verizon Wireless and Sprint were the only two carriers that released comprehensive wireless data figures for inclusion at this time.

² Barrabee, Linda. "So Far, So Good for Wireless Data in 2004". The Yankee Group. November 9, 2004.

In trying to drive adoption of wireless data usage, carriers need to stress a value proposition as well as offer reasonable pricing and availability. This value proposition has not yet been clearly defined as there is no single killer application yet (email while instrumental to the business segment is not as widely embraced wirelessly by consumers yet).

However, the Yankee Group predicts that the consumer data services market will reach \$14 billion in 2008 with much of the growth coming from information and entertainment services (see below). <ihufs> will be targeting this information services market using messaging as a platform.³



The Yankee Group’s studies determined that currently (and in the near future) email and location based services were the most widely desired (see chart on next page). The wireless web and picture/video messaging resonated lower with only 11% expressing interest in this survey.⁴ This may be due to partly to the fact that early experiences with wireless web (e.g. WAP sites) were less than compelling. In addition, picture/video messaging in the past few years could not have been implemented properly due to slow data networks. Only with the advent of 2.5 and 3G network rollouts by many carriers in the past few years has picture/video messaging become feasible. Although there are no killer apps yet, survey respondents to Yankee Group mentioned a few key value propositions such as communications, contextual information, personalization and timeliness as to why they would use wireless data services.⁵ We would guess that (with

³ Barrabee, Linda. “So Far, So Good for Wireless Data in 2004”. The Yankee Group. November 9, 2004.

⁴ Barrabee, Linda. “So Far, So Good for Wireless Data in 2004”. The Yankee Group. November 9, 2004.

⁵ Barrabee, Linda. “2004 Mobile User Surveys Underscore a Good Year in Wireless Data.” The Yankee Group. November 2004.

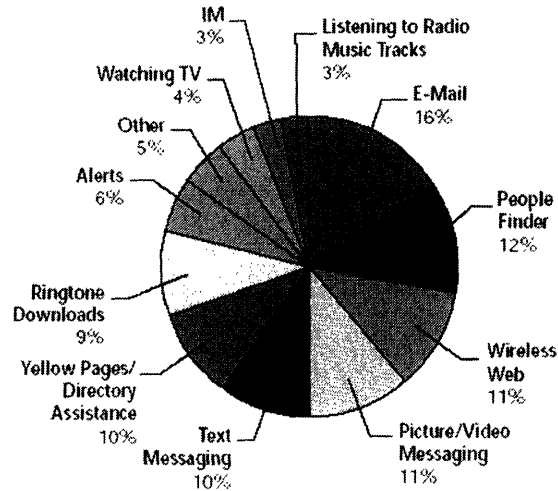
the exception of location based services) that these value propositions would be similar to those desired on the Internet.

Exhibit 6.

There Is No Killer App in Wireless Data

Source: The Yankee Group 2004 Mobile User Survey

If you had an additional \$5 to \$10 to spend each month on services for your wireless phone, what would be the top feature you would spend it on?



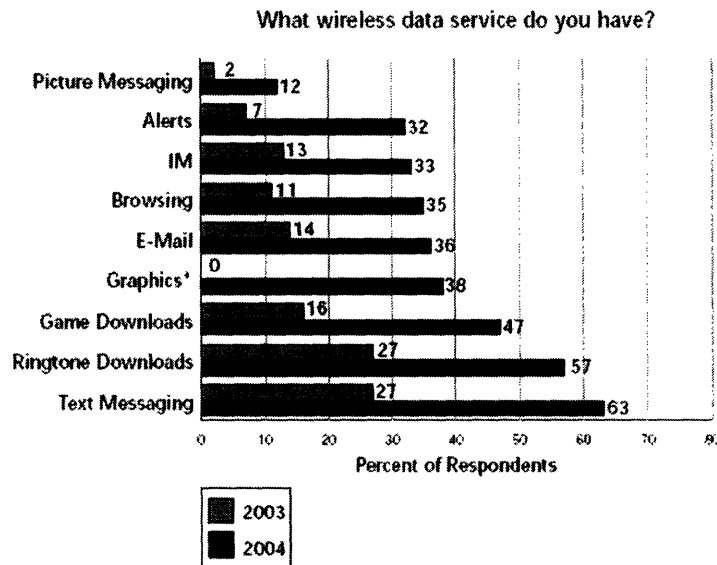
According to the Yankee Group, demand for wireless data services has increased from 2003-2004 and portends significant growth in years to come (see next page).⁶

⁶ Barrabee, Linda. "2004 Mobile User Surveys Underscore a Good Year in Wireless Data." The Yankee Group. November 2004.

Exhibit 1.

Awareness Around Wireless Data Takes Quantum Leap

Source: The Yankee Group 2003 and 2004 Mobile User Surveys



Note: *Represents new category in 2004

Demographic information

There are clear differences in the spending habits of different demographics that we need to be aware of in identifying market opportunities for <ihufs>. The consumer data services market is segmented with older adults differing significantly in service desires from teenagers. Older adults are more interested in productive applications such as email, web browsing whereas teenagers are interested in text messaging, pictures messaging, ringtones, etc.⁷ Teens are early adopters of wireless data services according to the Yankee Group. While teenagers do not have the highest ARPU (due primarily to the fact that they are using their parents' spending dollars and have low/no income themselves), they are in the years to come going to drive wireless data usage. As a result, services from carriers and other application developers must be focused on this market segment or be relevant for this age group. Teenagers are more forward in thinking embracing new services including text messaging. Approximately 40% of teenagers send and receive more than 5 text messages a week.⁸ This is especially crucial for the <ihufs> model to work as teenagers and young adults are already acclimated to using SMS and are core target users for <ihufs>.

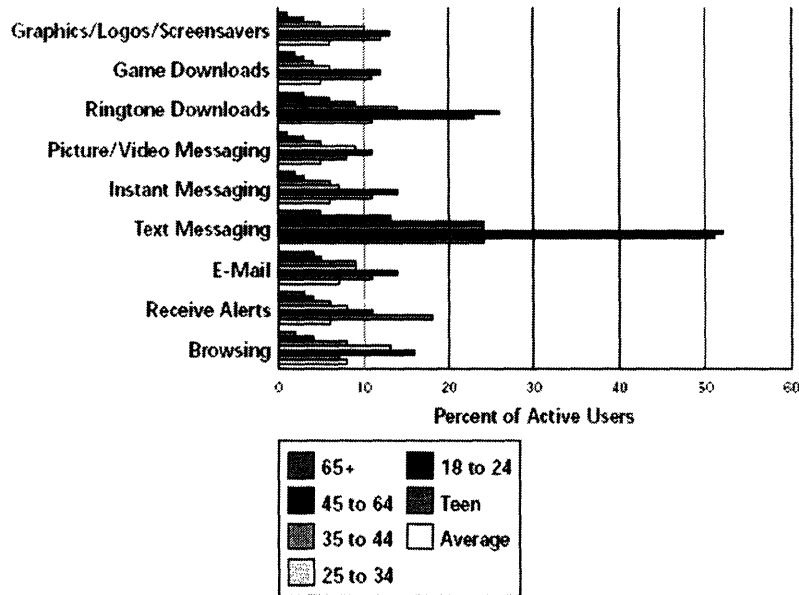
⁷ Barrabee, Linda. "So Far, So Good for Wireless Data in 2004". The Yankee Group. November 9, 2004.

⁸ Barrabee, Linda. "So Far, So Good for Wireless Data in 2004". The Yankee Group. November 9, 2004.

Exhibit 3.

No Big Surprises: Youth Still Trailblazing in Wireless Data Use

Source: The Yankee Group 2004 Mobile User Survey



Note: Active users are defined as those using the service or feature at least once a month.

The biggest disparities in wireless data usage appear to be age based but it is worth noting a couple of other trends. Men and women use wireless data services in equal numbers according to the Yankee Group.⁹ This is especially pertinent given the proclivity of men to traditionally be earlier adopters of technology as it opens an entirely new demographic that <ihufs> could/should focus on. The <ihufs> service should appeal to women and more analysis should be done to determine their interest level in specific applications. There does appear to be a difference in the spending habits of higher income households with those in the \$75,000 bracket spending 20-30% more on wireless data. In addition, minority groups are currently more active users than Whites which is also interesting due to the fact that there are not currently many services geared towards ethnic groups (e.g. very few Spanish data services available) and may present an opportunity for <ihufs> to have ethnic/multi lingual community groups.¹⁰

International Trends

Given the fact that many European and Asian countries are generally perceived to be a few years ahead in wireless technologies and consumer adoption of such technologies, it makes sense to examine trends in a couple of them to try and predict future US conditions and how they will impact <ihufs>. In speaking with Omar Javaid, Head of International

⁹ Barrabee, Linda. "2004 Mobile User Surveys Underscore a Good Year in Wireless Data." The Yankee Group. November 2004.

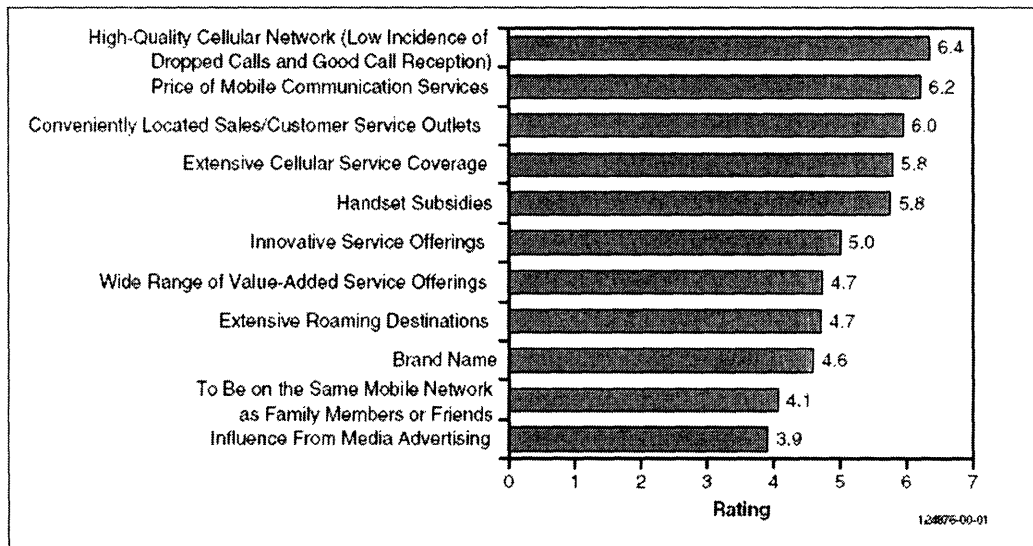
¹⁰ Barrabee, Linda. "2004 Mobile User Surveys Underscore a Good Year in Wireless Data." The Yankee Group. November 2004.

Business Development for Qualcomm MediaFLO, he noted the wide disparity between wireless data usage here in U.S. as compared to Asian countries specifically Japan and Korea.¹¹

Research Group Gartner has surveyed South Korean customers who ranked high quality network, service price and conveniently located sales and customer service outlets as the top 3 factors in choosing mobile operators (see next page). Innovative service offerings was only fifth in ranking by the Gartner survey.¹² This is especially striking as South Korea is often discussed as one of the models for advanced wireless services. Perhaps this is due to the fact that in the wireless ecosystem for services in Korea, operators have maintained strong control over the value chain and entry barriers are quite high thereby stifling potentially innovative service offerings.¹³ Again this may demonstrate the difficulty in being able to sell/license the <ihufs> model to carriers in the US and why <ihufs> should not focus all resources to carrier relationship development. This is due to the fact that even in a more advanced market for wireless data services like Korea it is notoriously difficult for application creators to develop strong relationships with carriers.

Where Gartner does see potential opportunity for wireless data services in Korea is in mobile instant messaging, music, personalization, gaming, mobile payments and banking.¹⁴ While mobile instant messaging and personalization is relevant to the <ihufs> model, the other services would not be focused on by <ihufs>.

Figure 1
Ranking of Operator Selection Factors in South Korea



Note: Ratings are based on the Likert scale of 1 to 7, in which 1 is "not important at all" and 7 is "extremely important."
 Source: Gartner Dataquest (September 2004)

¹¹ Javaid, Omar. Personal interviews. February-April 2005.

¹² Shen, Sandy. "South Korean Mobile Operators Should Exploit 'Triple Play'." Gartner Dataquest. November 19, 2004.

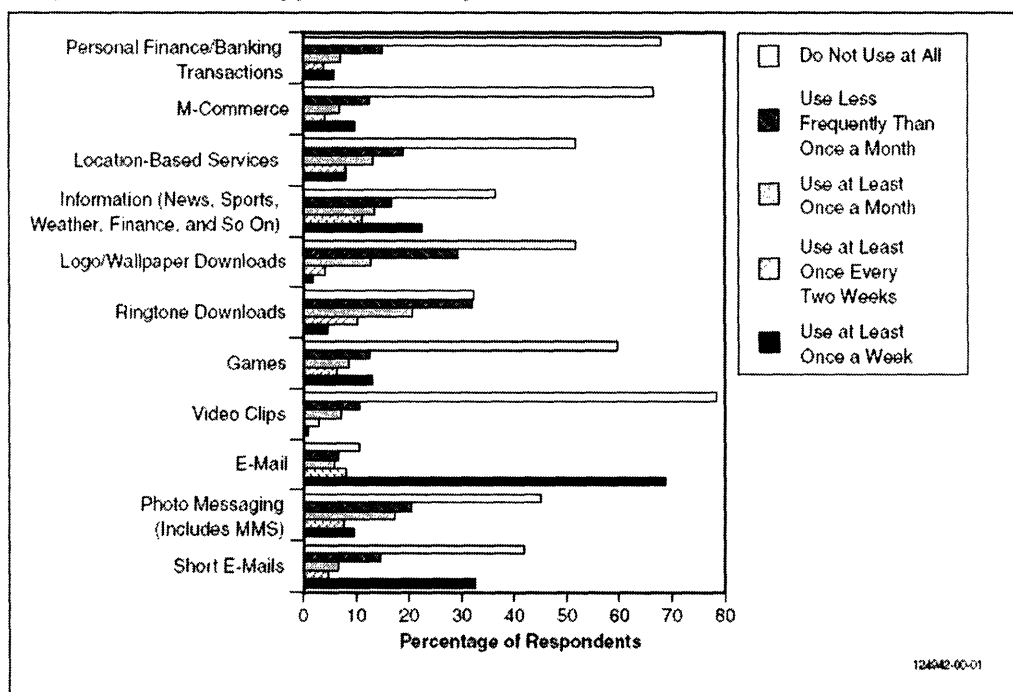
¹³ Shen, Sandy. "South Korean Mobile Operators Should Exploit 'Triple Play'." Gartner Dataquest. November 19, 2004.

¹⁴ Shen, Sandy. "South Korean Mobile Operators Should Exploit 'Triple Play'." Gartner Dataquest. November 19, 2004.

Japan is also often cited as a country (along with Korea) where mobile data services are much more advanced (NTT DoCoMo's early successes are often mentioned here in the US). In Japan the most frequently used mobile data service is email (services are offered by Vodafone K.K., KDDI and DoCoMo as well) which may indicate that mobile email adoption in the US will increase soon. Email is more prevalent than text messaging which is striking as this may foreshadow the evolution of mobile communication services in the U.S. What is also interesting about the use of mobile services in Japan is the fact that usage is evenly distributed among all age groups. This differs significantly from the U.S. and should be examined further to understand how Japanese carriers are able to appeal to those in an older demographic.¹⁵

Second most widely used in Japan is information retrieval services according to Gartner. The age of users for these information retrieval services is typically lower than 30 years which is more in line with the age of U.S. users of wireless data services. Information that is typically desired includes weather, sports, directory assistance or social networking¹⁶ This bodes well for information finding services such as <ihufs>.

Usage of Mobile Data Applications in Japan



Source: Gartner Dataquest (October 2004)

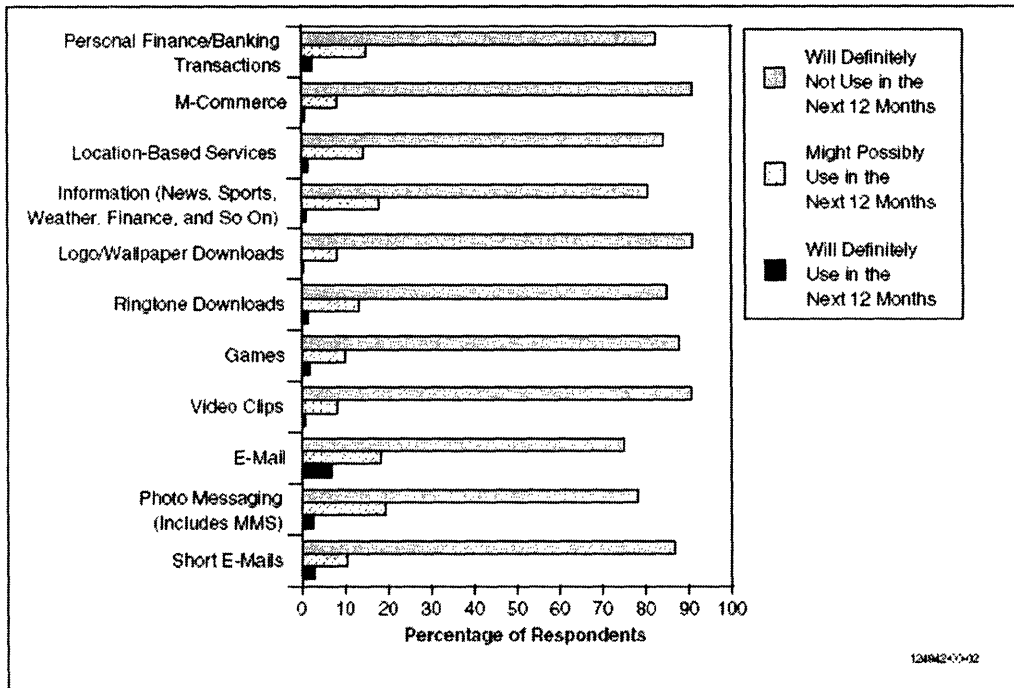
What is less encouraging for services such as <ihufs> is the fact that those who do not use wireless data services currently do not anticipate using such services in the next year.¹⁷ Services such as <ihufs> must create demand for such services by clearly defining the value proposition to the end users.

¹⁵ "Knowing Customers is Key for Mobile Data Services in Japan." Gartner Dataquest. December 2004.

¹⁶ "Knowing Customers is Key for Mobile Data Services in Japan." Gartner Dataquest. December 2004.

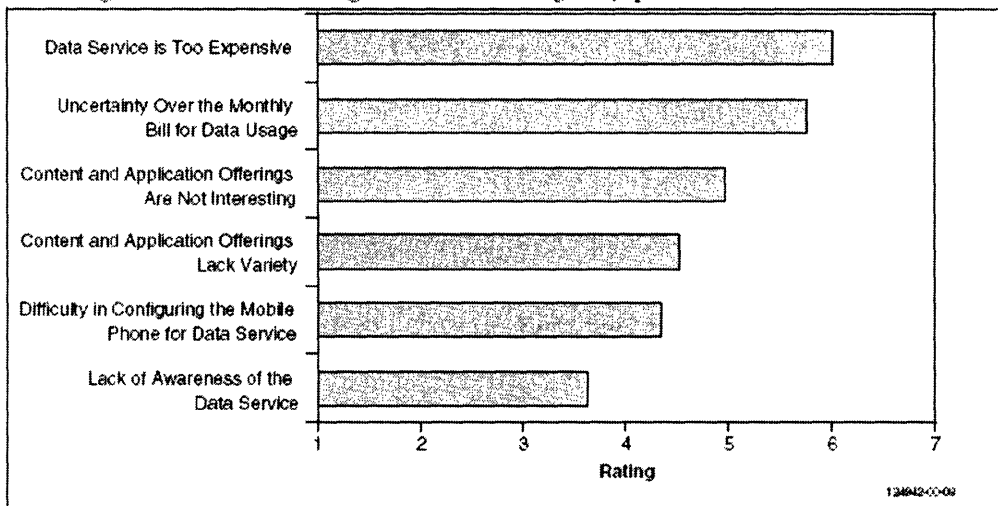
¹⁷ "Knowing Customers is Key for Mobile Data Services in Japan." Gartner Dataquest. December 2004.

Figure 2
Interest in Using Mobile Data Services During the Next 12 Months



Although cost is the greatest obstacle for users to adopt wireless data usage in Japan, <ihufs> should not be as concerned with this factor due to the fact that the <ihufs> service is free to end users. Again, <ihufs> must focus on making sure that the service works well and demonstrates clearly how it is differentiated from other information finding services.

Figure 3
Ranking of Factors Prohibiting Mobile Data Usage in Japan



Micro-trends

Location Based Services

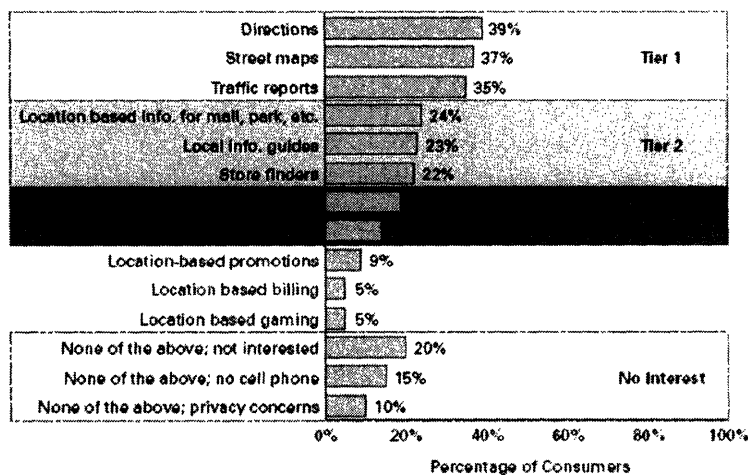
Location based services (LBS) are applications that make use of where the user is currently geographically located. LBS make use of a number of technologies such as GPS or E911.¹⁸ The uses of LBS are varied and can include such services as directory assistance, people finders, targeted advertising, gaming and mobile commerce. Location based services have been heralded as the application that will spur wireless data usage for years but is only now being implemented. For LBS, the greatest interest appears to be in those services that aid in navigation (services such as directions, maps and traffic reports) according to Jupiter. In addition, there is secondary interest in finding local information such as maps and information for malls.¹⁹ <i>ihufs</i> will be targeting these markets with its services.

Fig. 2 Consumer Interest in Wireless Location-Based Services

Question: Your cell phone carrier may be able to track where your cell phone is located in order to send help when you dial 911 (a government requirement). However, carriers could also use this ability to offer you other services based on your location. Which of the following services would you be interested in, if offered by your cell phone carrier? (select all that apply.)

Source: Jupiter Research/peos-Insight Consumer Survey (10/03), n = 2,765 (US only)

© 2003 Jupiter Research, a division of Jupitermedia Corporation



Search

Jupiter forecasts paid search spending will reach \$4.3 billion in 2008.²⁰ This growth is predicated on the continued improvement of the relevance of search results for users leading to an increased click through rates. A recent trend in search spending is broad matching in paid searches which allows ads for advertisers to come up when keywords appear in a search string that is not exactly as dictated.²¹ Overture and Google offer different pricing for relevance matching: exact, broad and phrase. With broad matching

¹⁸ www.whatis.com. 2005.

¹⁹ Greengart, Avi. "Location-Based Applications. Seeking Signs of Demand or Supply." Jupiter Research. November 17, 2003.

²⁰ Stein, Gary. "Paid Search: Tactics for Managing Keyword Broad Matching." Jupiter Research. October 21, 2004.

²¹ Stein, Gary. "Paid Search: Tactics for Managing Keyword Broad Matching." Jupiter Research. October 21, 2004.

search, advertisers must pay particular attention to the management of irrelevant words according to Jupiter. By the time that the <ihufs> platform rolls out (targeted within a year) advertisers will be able to track these search metrics or will have hired placement agencies which will allow <ihufs> to offer broad matching to potential advertisers.²²

Management Will Quickly Rise in Importance

Fig. 1 Four Strategic Scenarios Using Broad Matching

Constituents	Advertiser A	Advertiser B	Advertiser C	Advertiser D
Bid-on phrase	"New York hotels"	"New York hotels"	"New York hotels"	"Inexpensive hotels"
Opted in to broad match?	Yes	No	Yes	Yes
Words excluded	None	None	"Inexpensive"	None
Will ad be served?	Yes	No	No	Yes
Value	High: opportunity to present offer to prospect	Missed: no opportunity to present offer	Avoided: offer not shown to unqualified traffic	Low: opportunity exists, only if consumer wants "New York"

Note: Search phrase is "inexpensive hotels in New York."
 Source: Jupiter Research (10/03)
 © 2003 Jupiter Research, a division of Jupitermedia Corporation

Instant Message

The IM space is dominated by 3 large players, AOL, Microsoft and Yahoo! which account for 96% of frequently used IM clients²³. IM has grown exponentially due to its cost (free), ubiquity and the fact that it is real time in nature. Of relevance to <ihufs> is the fact that IM is increasingly becoming integrated with SMS/MMS. This drives data usage for the carriers which will then push these services.²⁴ In addition, customers are becoming more used to that integration which is a key component of <ihufs> model.

Most IM services are walled gardens which does not allow for integration using AOL, MSN and Yahoo! However, firms such as Jabber, Trillian and Gain have created platforms that allow for IM interoperability. We would expect that the <ihufs> IM platform would either build similar software or license their software to allow for users to only have one IM product.²⁵

²² Stein, Gary. "Paid Search: Tactics for Managing Keyword Broad Matching." Jupiter Research. October 21, 2004.

²³ Mahoney, Patrick and Nathan Dyer. "IM: Instant Messaging or Instant Media." The Yankee Group. December 2, 2004.

²⁴ Mahoney, Patrick and Nathan Dyer. "IM: Instant Messaging or Instant Media." The Yankee Group. December 2, 2004.

²⁵ Mahoney, Patrick and Nathan Dyer. "IM: Instant Messaging or Instant Media." The Yankee Group. December 2, 2004.

At the BREW Developer's Conference in June 2004, Verizon announced that since the launch of its BREW IM client, billable IM messages reached 125 million (see chart)²⁶. The focus of Verizon in utilizing BREW (Binary Runtime Environment Window) is to make the mobile IM experience as close to the desktop experience as possible which should allow for the migration of desktop IM users to handset IM. With the exception of location based services (that fundamentally differ on desktop computers), many applications/services on mobile devices seem to try to emulate the desktop experience (albeit often at much more primitive levels) which will allow for seamless integration on the <ihufs> platform of multiple media.²⁷

Exhibit 1.
Verizon Wireless: BREW by the Numbers

	September 2002 to Year-End 2003*	January to May 2004
Total BREW Downloads	36 Million	34 million-plus
Game Downloads	18 Million	12 million
IM Downloads	Not Available	464,000
IM Traffic	Not Available	125 million billable messages
Installed Base of BREW-Capable Handsets	7.7 million (approximately one out of five customers)	13.3 million (approximately one out of three customers)

*Note: *Brew launched in September 2002. Italics are Yankee Group estimates.*

Source: Verizon Wireless, QUALCOMM, and the Yankee Group, 2004

Online networking

Online networking is a recent phenomenon that has experienced exponential growth with the introduction of social networking sites like friendster and business networking sites such as linkedin. This business model purports to facilitate virtual networking among individuals across the globe eliminating the limitations of geography and time. It provides a platform for hosting personal networking (or in the case of linkedin, business networking) and sharing of information among existing and new contacts made which mimics some of the functionality and features of <ihufs> service. Transferring social networking to an online platform enables firms like friendster to provide enhanced value

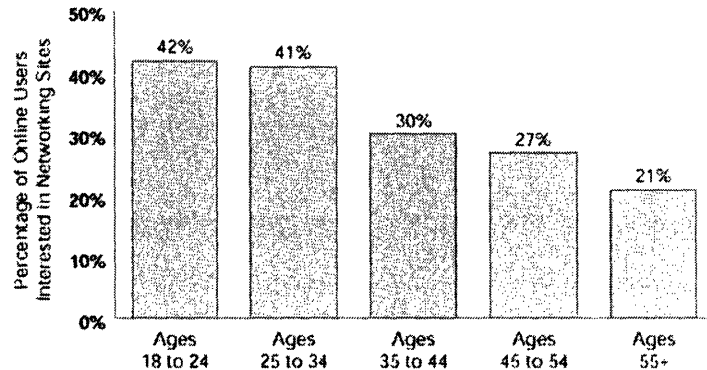
²⁶ Barrabee, Linda. "Mobile IM: More Compelling Offers Drive Consumer Adoption." The Yankee Group. August 5, 2004.

²⁷ Barrabee, Linda. "Mobile IM: More Compelling Offers Drive Consumer Adoption." The Yankee Group. August 5, 2004.

to individuals including interaction with otherwise inaccessible people, enhanced efficiency or lower costs of face-to-face networking, and increased counterpart information.²⁸ All of these benefits are very relevant for the <ihufs> service.

In terms of demand, the greatest amount of interest in networking services include the two youngest age demographics (from 18-34) representing over 80% of the users (see below from Jupiter) which is alignment with the backgrounds of those who use wireless data services.

Fig. 1 Percentage of Online Users Interested in Social and Business Networking Sites by Age



Question: For what purposes would you be interested in using social and business networking sites? (Select all that apply.)
Source: JupiterResearch/Ipsos-Insight Consumer Survey (1/04), n = 720 (users interested in networking sites, US only)
© 2004 JupiterResearch, a division of Jupitermedia Corporation

As friendster has demonstrated by registering ~16 million users, there is definitely a large potential market for users in the online networking category which bodes well for the <ihufs> service. <ihufs> intends on emulating friendster's growth by using a referral system and by word of mouth. friendster was able to build a user base of over 40,000 six months after service rollout and 7 million plus users within 2 years.^{29 30}

²⁸ Elliott, Nate. "Social and Business Networks: A Phenomenon in Search of a Business Model." Jupiter Research. May 2004.

²⁹ Koh, Bong & Alice Park. "Comparative Case Study between ebay and friendster." MIT. May, 2004.

³⁰ Elliott, Nate. "Social and Business Networks: A Phenomenon in Search of a Business Model." Jupiter Research. May 2004.

Service Offering

As mentioned previously, <ihufs> will provide a platform for individuals to access real time information anywhere from like-minded individuals within their communities. <ihufs> will be able to do this by allowing users to find information through a variety of media including the desktop, voice, SMS, J2ME/BREW app and instant messenger client. The <ihufs> platform routes the user requests for information through a search algorithm that identifies relevant members of the community who are best positioned to answer the user queries. The platform pings X number of users (dependent on type of query) within the desired demographic composition through the community users' desired media. The community users answer the query as applicable and the answer is routed back through the <ihufs> platform to ensure that the user receives an applicable answer within a timely fashion (actual length will vary depending on type of query). There may also be a mechanism by which users can continue discussions in the event that additional information is needed/ the conversation needs to be continued but this will be defined in the development process.

Types of Information Desired

Initially, we expect that location based information will be in highest demand. This includes finding restaurants, bars, shops, coffee shops, gas stations, etc. Also, we believe that time sensitive data will be in high demand such as movie listings, sales/coupons, weather forecasts, etc. We anticipate that another area of great interest will be consumer reviews such as electronics reviews, restaurant/bar reviews, etc. Finally, general trivia may also be information that is desired such as sports stats, entertainment, etc.

User Information

The <ihufs> platform is predicated on the creation and subsequent population of the <ihufs> community. There will exist a general <ihufs> community that can then be segmented according to such factors such as geography, lifestyle, interests, age, etc. Users will be acquired primarily through viral marketing, like how social networking sites such as Friendster have built its community through user invitations. Through this invitation based approach, there will also exist degrees of separation that will allow users to segment based on personal networks.

When users download and sign up for an <ihufs> user account, the user will have a chance to express preferences for services including media most used, demographic groups, personal network, geographic information, etc. We are currently evaluating methods for users to immediately use the service on download and signup and will be further defined in development.

Answerers

Answerers are able to decide through preferences when and where they are contacted for queries. They may decide to be contacted via the desktop client (most likely), IM, SMS,

J2ME/BREW app or voice (voice is probably the least likely given types of queries that we initially expect to be asked) and may decide who to receive queries from based on their group and personal network preferences that they establish on their profile.

Answerers will choose to respond to queries for a variety of reasons:

- Online forums have created an environment where complete strangers answer questions honestly and accurately without any incentives; this form of altruism is crucial to building a community where users can trust query results
- Answerers who are prolific in response quality and quantity may be recognized as gurus with prestige as a reward (also prevalent in online forums)
- Answerers may be rated (like in the ebay model) and may accrue points or rewards that <ihufs> and selected advertisers may sponsor
- Answerers will be eligible to receive promotions/freebies from advertisers based on their responses (quality, quantity and areas of expertise)

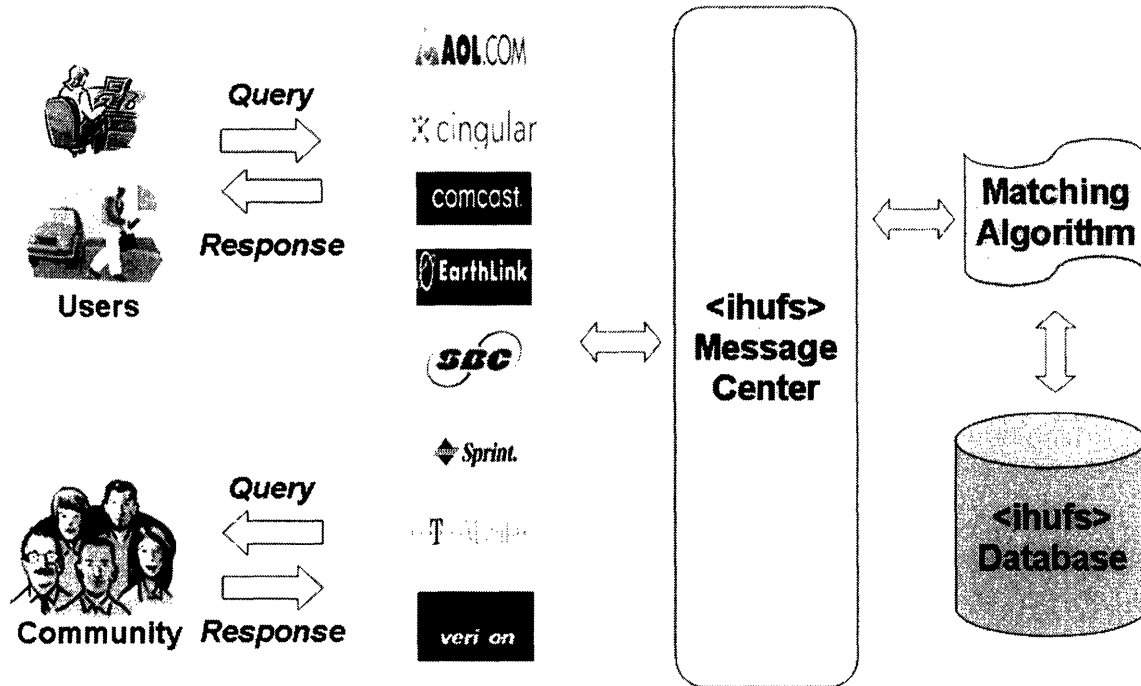
In addition, <ihufs> will initially staff college students in cities with initial service rollout to answer all queries until such time as the community has been established.

<ihufs> will also keep a database of all queries and responses in order to have an FAQ that will allow for quick query response in the event a response within the desired time can not be returned and to generate secondary responses.

Finally, what differentiates <ihufs> from competitors is the focus on providing **real time** information that answers questions specifically from a network of users that is related directly to you. This **community** allows you to get **information anywhere** from other people.

Use Case Scenarios

Generic Use Case Scenario



Location Based Scenario 1

John, a 25 year old professional and an ihufs community member, lives in Santa Monica. He has previously set up a user account and entered his preferences on the ihufs website. He is driving around looking for a hip lounge that caters to young professionals and not college kids or married couples and plays chill music.

Step 1: John flips open his SMS enabled phone mobile phone and keys in "santa monica.lounge.yuppie.chill" and sends to <ihufs> SMS code 44837.

Step 2: <ihufs> message center receives SMS from carrier and filters key words and then sends to matching algorithm

Step 3: As specified by John's pre-set query preferences, <ihufs> matching algorithm selects members that are up to 3 degrees of separation in John's personal community network

Step 4: Message Center contacts and queries those users (up to 5) who are within 3 degrees of separation and who have expressed a willingness to answer questions from a user of John's preferences via IM, email and other communication media.

Step 5: Stephanie M is the 3rd user who is pinged. She is at her laptop and receives the IM via the <ihufs> messenger client. She quickly responds via IM “Cinch.Wilshire/15.Prettypeople.no cover”

Step 6: Message center sends response to John’s cell phone. Response: “Stephanie M: Cinch.Wilshire/15.Prettypeople.no cover” Elapsed time 45 seconds.

Location Based Scenario 2

A group of 30 year old housewives, Sophia, Naomi and Carrie have just finished shopping on 40th and 5th in Manhattan. They would like to take a break and find a nice coffee house in the vicinity. Sophia has recently signed up as an <ihufs> community member and has downloaded the J2ME/BREW app when she signed up as a member.

Step 1: Sophia uses mobile phone with downloaded app and hotkeys to the <ihufs> J2ME/BREW app and keys in “manhattan.40&5ave.coffeehouse” and hits enter.

Step 2: <ihufs> app server receives query and filters key words and then sends to matching algorithm

Step 3: Matching algorithm compiles short list of 300 individuals from community (database) that lives around 5th and 50th and that have designated themselves as high knowledge of services within base geographic location.

Step 4: Message Center contacts and queries short list of 15 via IM who are currently known to be logged on and active.

Step 5: Angela receives IM and responds with “Starbucks.New York Public Library terrace.42&5th”

Step 6: <ihufs> Message Center sends the response via J2ME/BREW to Sofia’s cell phone

Response: “Starbucks. New York Public Library Terrace. 42nd & 5th Street. -- Use Coupon Code: AJG55004 to receive a free Grand Mocha at Starbucks.” Elapsed time 15 seconds (Should the user desire to specifically exclude Starbucks the parsing agent in the search algorithm should be able to recognize this and return non Starbuck responses. To facilitate such searches <ihufs> will create a “how to” tutorial that will demonstrate query structure that should yield better results).

Product Review Scenario

Gerri, a graphic designer, is shopping in Best Buy for a tablet PC. Sales Person has just finished explaining pros and cons of 3 models. Gerri really likes the motion m1400 but before making a final decision she would like to find out opinions of other graphic designers or related professionals who have tablet PCs to get better sense of ease of use, reliability, battery power, etc.

Step 1: Gerri uses T-mobile Sidekick and uses <ihufs> IM client and keys in “Review.motion m1400” and sends to<ihufs> handle.

Step 2: <ihufs> message center receives IM and filters key words and then sends to matching algorithm

Step 3: <ihufs> matching algorithm compiles short list of 1,000 individuals from community (database) who owns tablet pcs and list of 10,000 individuals who are in related fields. Algorithm cross references lists and identifies 427 people who fit both criteria. 27 are on desktop IM.

Step 4: Message Center contacts and queries short list of 27 via IM (only X% will respond within desired time frame with a relevant response).

Step 5: Brian receives IM and responds with summarizing his personal experience using the tablet pc. Matching algorithm also searches query/response database to search for previous responses on tablet pcs and identifies 1 relevant response.

Step 6: <ihufs> Message Center sends the 2 responses via IM to Gerri’s Sidekick:

Response 1: “Pro: It runs WindowsXP Pro without crashing, and can run FPS like Doom 3. The internal slots are great for expanding capability PDA-style, too. Con: Battery runs out tad quick. Real-life usage is somewhere between 2 to 3 hours”

Response 2: “Motion m1400:pro: great viewing range, excellent handwriting recognition, great security with biometric fingerprint reader, built in WI-FI and Bluetooth work flawlessly!!! Con: when plugged into hardtop Keyboard other inputs are hard to get at and use.”

Sales and Marketing

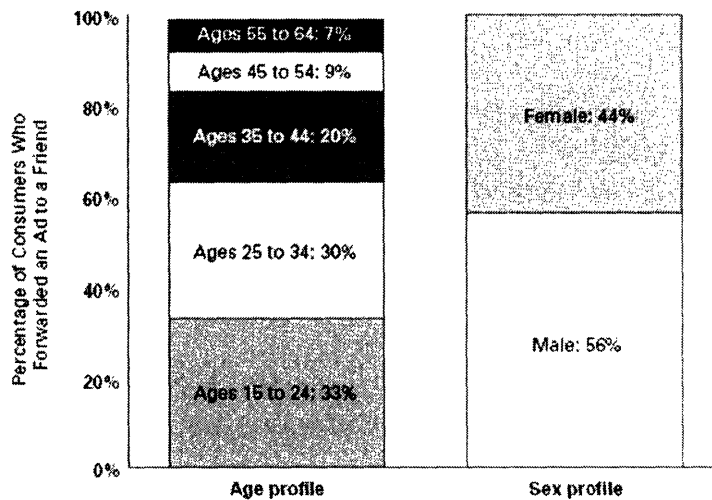
Marketing

<ihufs> initially will use a viral marketing and aggressive PR campaign to build a community base of users. This creation and subsequent population of a community base is the single most important aspect in creating a successful business. While it is difficult to predict the likelihood of success in using a viral marketing campaign, we have previously used PR to great effectiveness in prior startups. In Mobilocity's creation, we focused on getting our constituents (such as founders, senior management and engineers) into press rags which yielded tangible benefits from sales leads to employment requests. In addition, by aggressively partnering with a variety of solution providers, we were further able to increase our footprint with minimal expenditures. <ihufs> will employ a similar approach and given some of our previous work in dealing with the press should be able to garner coverage. Furthermore, depending on the nature and extent to which we utilize partnerships there may be opportunity to piggyback on these partners' campaigns.

With regards to the viral marketing campaign to build a user base, there are a number of key reasons that this type of campaign is compelling for <ihufs>. First and probably most attractive is the cost effectiveness of such campaigns. Furthermore, a viral marketing campaign allows for a multiplier effect and helps augment the brand creation.³¹ In addition, the demographics of those who are more likely to forward email advertisements, of which <ihufs> service may be included in this description, are those that we would ideally to populate our service with; those who skew a bit younger.

Fig. 1 Profiles of Those Who Have Forwarded Advertisements to Friends

Question: Which of the following have you done as a result of seeing an advertising message online?
Source: Jupiter Research European Consumer Survey (11/03), n = 182 (those who have forwarded an advertisement to a friend, UK, France, Germany, Sweden, Spain, and Italy only)
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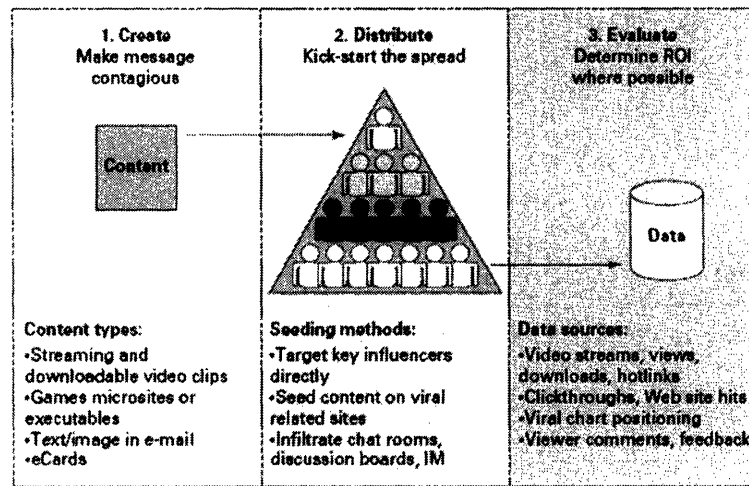
³¹ Smith, Julian. "Viral Marketing: Creating a Self-Propelling Online Campaign." Jupiter Research. February 20, 2004.

Finally, email forwards to friends and those in your network allow <ihufs> to circumvent spam filters.³²

After creating a compelling product and extensive testing with selected users, it is crucial that initial real users of the <ihufs> service have a positive experience. To that end in our testing process, we will actively engage those bloggers and tech luminaries that can have a profound impact on our success to incorporate their feedback in our development process (will need to further research on who should be targeted). In targeting bloggers, we can use online monitoring tools such as PubSub and BlogLines. We will not only try to solicit their feedback but also build deeper relationships by providing content or promotional items.³³ After this initial testing and rollout, we will encourage satisfied users to invite others to join the <ihufs> service. This invite only method of recruiting users has proven quite effective for services such as friendster and orkut. We, as founders and management, will, of course, be inviting those within our respective networks to join the <ihufs> service. We will pay particular attention to disseminating the service to academic institutions (e.g. UCLA, Stanford, MIT, Berkeley, NYU, etc.), tech leaders (bloggers, visionaries, VCs), entertainment individuals (those associated with young people) and key seeding sites (www.viralbank.com).

Jupiter provides an example of potential viral marketing campaign process below that mirrors certain aspects of our thinking:

Fig. 2 Viral Marketing Campaign Overview



Source: Jupiter Research (2/04)
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Sales

³² Smith, Julian. "Viral Marketing: Creating a Self-Propelling Online Campaign." Jupiter Research. February 20, 2004.

³³ Stein, Gary. "Mastering Viral Marketing: Achieving Success Through Small, Interconnected Groups of Consumers." Jupiter Research. October 24, 2004.

Sales for an organization like <i>ihufs</i> is largely dependent on having an attractive user base for potential advertisers with such factors as number, demographics and geography of users having a significant role in determining advertising placement. Advertisement, search keywords, sponsorship for local merchants and organizations will be handled mainly through a web based interface that should decrease direct sales costs significantly (will still need sales people to oversee the process and respond to client queries). Only for larger national advertisers will we target direct sales resources in a significant fashion (although the number of sales people dedicated to both local and national accounts will be similar though the local sales people will have significantly more accounts to cover). In addition, there will be one salesperson dedicated to covering wireless carriers as creating and maintaining those relationships may drive short code creation as well as the level of support from those carriers.

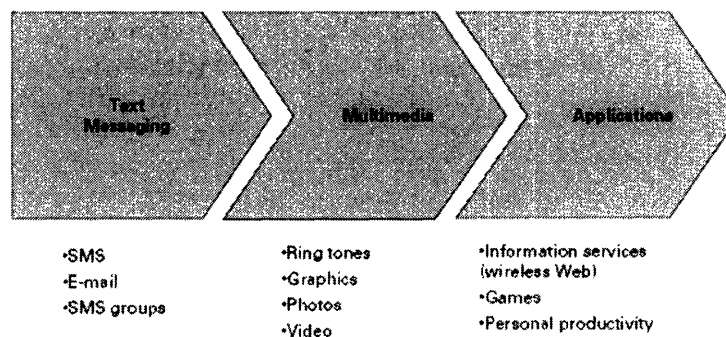
³⁵Brooks, Dylan. "Mobile Marketing: Attracting CPG Advertisers." Jupiter Research. 2002.

Business Model and Financials

During the last few years, advertisers have begun to realize that mobile and wireless devices are viable platforms to reach potential customers. While there have been success stories using mobile advertising the dollar amounts are still insignificant. European mobile advertising is estimated to have only been \$53 million (in U.S. dollars) in 2002.³⁵ In spite of this current lack of dollars, companies are pushing into the mobile advertising space and the area will experience significant growth in the next few years. For example, Yahoo! sent bulk SMS to AT&T Wireless users to drive traffic to their wireless sites. SMS will be the preferred medium (as it is already used much more frequently than wireless web browsing).³⁶ Other examples have included sweepstakes replacements (e.g. Cadbury Schweppes put SMS codes on 65 million candy wrappers and had 5 million of these codes redeemed; the cost of campaign [not including prizes] was only \$100,000).³⁷

Jupiter breaks down the value chain for wireless marketing below and <ihufs> will be targeting SMS, SMS groups and information services:³⁸

Fig. 2 Categories of Wireless Technology Suitable for Marketing by Adoption Rate



Note: Bullets are listed in order of market adoption within each category.
 Source: JupiterResearch (9/04)
 © 2004 JupiterResearch, a division of Jupitermedia Corporation

In addition to understanding the market for wireless advertising, we also considered the greater market for local online advertising. In speaking with Marcus Lopez, part of the founding team of kimo, he talked very positively about the exploding market for local online advertising.³⁹ With the recent focus on local search which <ihufs> will address to a certain extent it is worth noting that the market for local ad spending this year will approach \$3.0 billion and almost 30% of that will be on the internet (see next page):⁴⁰

³⁶ Brooks, Dylan. "Mobile Marketing: Attracting CPG Advertisers." Jupiter Research. 2002.

³⁷ Brooks, Dylan. "Mobile Marketing: Attracting CPG Advertisers." Jupiter Research. 2002.

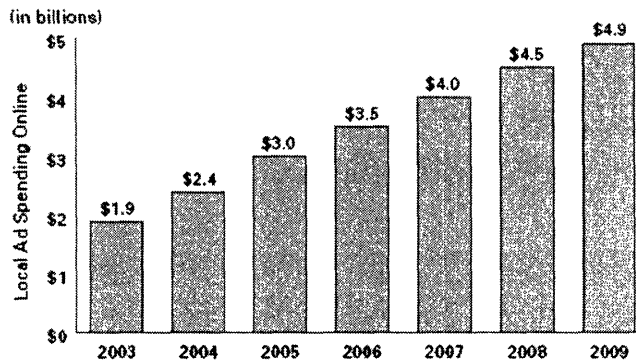
³⁸ Greengart, Avi. "New Technologies Only Provide Limited Wireless Marketing Opportunities." Jupiter Research. September 22, 2004.

³⁹ Lopez, Marcus. Personal Interviews. February-April 2005.

⁴⁰ Jupiter Internet Research. July, 2004.

Local Online Advertising Keeps Pace With Total Online Ad Spend

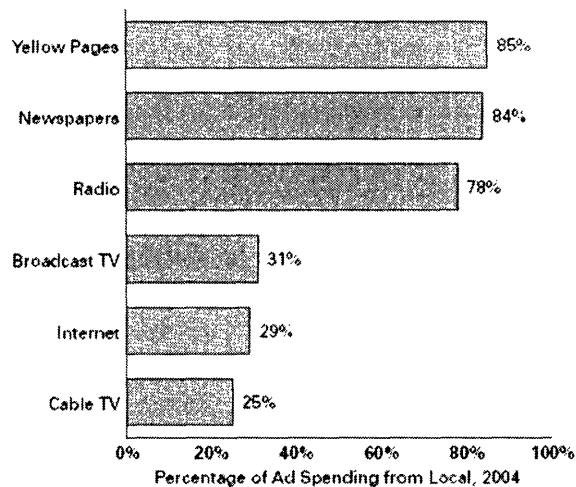
Fig. 1 Local Ad Spending Online, 2003 to 2009



Source: JupiterResearch Internet Advertising Model, 7/04 (US only)
 © 2004 JupiterResearch, a division of Jupitermedia Corporation

Online Advertising Fundamentally Not a Local Channel

Fig. 2 Percentage of Spending from Local by Medium, 2004



Source: JupiterResearch Internet Advertising Model, 7/04 (US only)
 © 2004 JupiterResearch, a division of Jupitermedia Corporation

Business Model

The <ihufs> business model will incorporate search, sponsorship and (in the future) licensing revenue streams. The <ihufs> model will be focused on providing advertising to users that is relevant based on geographic, demographic, community understanding of the end user. The search engine revenue stream will be based on the number of searches that users conduct on a daily basis divided into such verticals as consumer services, consumer travel/hospitality and consumer retail. Based on the number of searches, <ihufs> will be able to fill or match a certain percentage of the emails with targeted ads that are sent to the end user. The success of such filled ads will be measured using an average click through rate (using email as a comparable) since it is currently impossible to measure any meaningful click through and paid for based on standard search keyword pricing. The unfilled or generic ads will be based on generic cost per impressions. The data that we used for the <ihufs> model can be found in the model as well as in the appendix portion.

The sponsorship revenue stream is based solely on email advertisements. It was decided not to incorporate paid web site sponsorship due to the possibility that there may not exist significant stickiness on the <ihufs> web site. In creating this revenue stream, we used consumers' preferences for number of emails desired from advertisers and broke that number into specific verticals including financial services, consumer products, travel, retail and catalog, publisher-consumer and consumer services. We then isolated the relevant email open rates for each vertical and assigned a conversion rate based on a 8% clickthrough rate and an average email open rate of 32.6%. Using the average cost per click of \$.40 we were then able to compute this revenue stream. Again the data that we used for the <ihufs> model can be found in the model as well as in the appendix portion.

Finally, as previously mentioned we anticipate that in the future there may be a licensing revenue stream but that we would currently not model that into our projections. Pricing would be based on a per user subscription but until we gain significant traction and adoption of the consumer based <ihufs> platform it does not make sense to build this into our forecasts. In addition, other consumer companies like Google have not proved successful in monetizing their strong brands and platforms to make sales to corporations.

Financials

<ihufs> has created an income statement, balance sheet and cash flow for the next 3 years (see appendices). We have addressed key considerations including:

Business model

Revenue streams (including search, sponsorship and licensing)

Cost of goods sold

Sales and marketing expenses

General and administrative expenses

Product development

Staffing

Capital requirements

Key assumptions in the business model:

1. Revenue is broken down into search, sponsorship and licensing
2. Licensing fees will not be relevant the first 3 years
3. Product version 1.0 will take approximately 6 months to roll out
4. Wireless carrier fees are 10% of search revenues
5. User ramp up will mirror networking sites with ~40k by end of first 6 months with aggressive growth culminating in a few million at the end of the first 3 years (similar to friendster)
6. Generic Cost per thousand impressions \$4.00 (from discussions with Clark Landry, Co-founder of Santa Monica Networks)
7. Per user daily vertical breakdown based on Jupiter Research
8. Fill % based on discussions with Clark Landry
9. Keyword search prices based on emarketer research

10. Conversion rate based on clickthrough of 8%/32.6% (DoubleClick 03/05)
11. Email open rates based Doubleclick 03/05 data
12. No web site sponsorship first 3 years
13. \$.40 cost per click through based on Jupiter Research, July 04
14. Initial office space will be free incubator space in Santa Monica
15. 6,000 sq ft then rented at \$20 per foot
16. Office equipment is leased not purchased (expensed)
17. R&D costs are expensed not capitalized
18. Product development costs continue to increase due to consistent addition of headcount (product will be continually refined and augmented during the first 3 years of launch- rollout in new markets, additional functionality, new platforms, etc.)
19. Sales and marketing costs are not constant due to multiple one time charges such as purchase of subscription lists, print advertisements, etc.

Corporate and Timeline

<ihufs> will be based in Santa Monica, CA and will initially roll out service in Los Angeles, San Francisco and New York. Partnerships will be an integral component of the <ihufs> long term strategy. After initial rollout and adoption by a critical mass of users, <ihufs> will pursue a multi pronged partnership strategy by focusing on:

Networking sites (e.g. friendster): to capitalize on more extensive user base and potentially set up company for acquisition

Community based sites (e.g. ebay): to reach a community of users that may not be in the core demographics of the typical <ihufs> user

Portals (e.g. Yahoo!): to further enrich users experience as well as set up company for possible acquisition

Carriers/handset manufacturers: to secure prime real estate on default browsers and operating systems and set up company for acquisition

Timeline

Key Year 1 + 1 Quarter Milestones

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Secure Seed Funding															
Secure Series A															
Beta Development															
Beta Release															
Version 1 Development															
Rollout to other cities															
Secure Series B															
Hire CEO															
Hire Salespeople															

Hiring Plan

Headcount Table

	01 Y1	02 Y1	03 Y1	04 Y1	Year 1				Year 2				04 Y3
					Q1 Y2	Q2 Y2	Q3 Y2	Q4 Y2	Q1 Y3	Q2 Y3	Q3 Y3	Q4 Y3	04 Y3
COGS													
Customer Service	0	0	2	2	2	2	2	2	2	2	2	2	2
Software Engineers	2	2	2	3	3	3	3	3	3	3	3	3	3
Researchers	0	10	10	10	10	10	10	10	10	10	10	10	10
Total	2	12	14	15	15	15	15	15	15	15	15	15	15
Product Development													
Prod mgmt	1	1	1	1	1	1	2	2	2	2	2	2	2
IT admin	2	2	2	3	3	3	3	3	3	3	3	3	3
DB admin	1	1	1	1	1	1	1	1	1	1	1	1	1
App Dev	3	3	3	3	3	3	4	4	4	4	4	4	4
Software Architect	0	4	4	4	4	4	3	3	3	3	3	3	3
QA	1	1	2	3	3	3	3	3	3	3	3	3	3
Total	8	12	13	15	15	15	16	16	16	16	16	16	16
G&A													
CEO					1	1	1	1	1	1	1	1	1
CFO					1	1	1	1	1	1	1	1	1
Admin		1	1	1	1	1	1	1	1	1	1	1	1
Total	0	1	1	1	3	3	3	3	3	3	3	3	3
S&M													
Salespeople (Direct-national account)	0	1	4	4	4	4	5	5	6	6	8	8	8
Salespeople (Internet-local accounts)	0	1	4	4	4	4	5	5	6	6	8	8	8
Salespeople (Wireless Carriers)	1	1	3	3	4	4	5	5	6	6	6	6	6
Head Sales people	1	1	2	2	2	2	2	2	2	2	2	2	2
PR Person	0	1	1	1	1	1	1	1	1	1	1	1	1
Marketing Person	0	0	1	2	2	2	2	3	3	3	3	3	3
Total	2	5	15	16	17	17	20	21	24	24	28	28	28
Total Headcount	12	30	43	47	50	50	54	55	58	58	62	62	62

Please note that 5 founders are embedded in Q1 Y1 as the 2 initial sales people, product management, app development and software architect.

Technical Overview and Key Technical Issues

Introduction

The following document provides a high-level overview of the technical design and specifications of the <ihufs> system, to enable functionality as described in the service offering.

Technical Overview

The <ihufs> system allows users to query information from within an information “network”, taking advantage of time-specific and locale-specific knowledge from within a personalized “database” of friends, family, and acquaintances. This information networks offers 3 distinct benefits to users:

- Speed of response
- Relevance and accuracy of information
- Location-independent access to service

Use Cases

The following section describes the possible use cases of the <ihufs> system from a technical perspective.

Location-specific Query Use Case

Intelligent Query Interpretation Use Case

Assumptions:

1. User has registered with <ihufs> system
2. User is currently within wireless access network range (cell phone carrier hub)
3. <ihufs> system servers are operational and providing real-time processing

Use Case:

1. User sends query via <ihufs> system. Query contains:
 - a. Location identifier (e.g. – zip code); automated LBS tracking
 - b. Natural language based inquiry (e.g. “Where can I go for Chinese?”)
2. <ihufs> system software parses query for recognizable strings (e.g. “where” & “Chinese”)
3. <ihufs> system software queries continuously updating database (receives content from local vendors willing to provide information, users’ recommendations and comments, partnered search engines such as Yahoo)
4. <ihufs> returns list of possible solutions to User

System Overview

The <ihufs> system will consist of several key components:

- <ihufs> client- An application or interface that allows an <ihufs> user to perform client-side functions, such as: Send a query to the <ihufs> network
 - Provide multiple levels of query construction; Basic and Advanced
 - Keyword identification; Structured queries for faster transmission and searching; Result memory or history
 - There will be dual modes of interaction:
 - Human network directed queries
 - Database directed queries
 - Receive a query from the <ihufs> network
 - Reconstruct data into intelligible forms
 - Apply user specific filters and formatting customizations
 - Respond to a query received from the <ihufs> network
 - Prioritize incoming requests
 - Provide security and adherence to various user states

Further requirements will determine other features of the system, such as:

- Whether the client is software that runs on a platform (e.g. BREW/J2ME app on phone, software on a PC, or web application) or simply a transparent application via an existing interface (e.g. via SMS on a mobile, email or IM via a PC)
 - Advantages of an in-house software interface:
 - More adept customization
 - Better security; Easier encapsulation and encryption
 - Automatic update control
 - Module sales
 - Advantages of piggy backing:
 - Recognizable format
 - Ease of user use
- The level of detail of information that is included in an <ihufs> query or response (e.g. maps, photos, directions, audio)
 - Data compression for large types such as pictures or audio
 - Vector graphic based maps or downloadable map packages
- <ihufs> server- A server system responsible for
 - Routing <ihufs> queries to appropriate Answerers
 - Receiving and processing Answerer responses (e.g. Based on criteria, such as response time, message content, the server may filter out inappropriate responses, accept only certain answers, etc.)
 - “Smart linking” in user responses and recommendations provide ample sources of advertisements

- Maintain user preferences in searches such as favorite “friends”, food choices, frequented locales, direction searches, rating priorities, etc.
- An intelligent search agent capable of utilizing various inputs such as preferences, priorities, history, etc to customize responses

Key Technical Issues:

Client vs. Server side parsing and processing of query string:

- Will clients be capable of maintaining an updated database that is large enough to sufficiently parse the query?
- Will such clients have enough processing power to identify applicable strings quickly?
- Can a server or the application software handle multiple user transactions?
- What sort of processors will be required to handle intelligent parsing and searching?

Client Advantages:

Query parsing and results reconstruction on client limits necessary network access and reduces transmission speed bottleneck;

<ihufs> physical network – The method of transmission must provide:

- Ample data rates for time-critical transmissions
- Security to protect both the <ihufs> system contents and users
- Point to point connections, local networks, or centralized administration

Further requirements will determine the necessary interfaces to and from the system, such as:

- Receiving/Sending incoming queries and responses: Is it via an SMSC on the carrier side, is it IP-based?

Competitive Analysis

In analyzing the competitive landscape, there does not appear, to the best of my knowledge, any direct competitors to the proposed <ihufs> service. There are, however, a number of competitors in related fields that <ihufs> must be aware of. Broadly speaking competitors can be divided into these categories: mobile search and directory assistance, desktop search and information finding services, mobile networking and online networking and LBS services. Each of these categories presents different threats to <ihufs> (please see competitive matrix in Appendices for more detailed competitive information).

Mobile search and directory assistance:

Startups such as 422 and 4info have recently entered this space and have gotten funded. The model is based on online search engines with users entering (mostly through SMS) queries and results are returned generated through search databases. These competitors (and those online desktop search engines such as Google) present the greatest threat to <ihufs>. Given widespread adoption of search engines, users are accustomed to using search engines and may quickly embrace mobile search engines. Where <ihufs> is able to differentiate its service is on the premise that queries answered by a community of users will prove more relevant than search engines. These mobile search engines though do not need to build a community of users which may hasten the adoption of such services.

Desktop search and information finding services:

Firms such as Google and Yahoo! have deep experience in search and information finding services. Given their strong platforms, they have been able to quickly introducing offerings in the mobile search (e.g. Google SMS) with robust functionality. In addition, with their strong brand names and user loyalty, they should be able to gain users quickly. Again, the only way for <ihufs> to succeed against such firms is in its ability to provide more targeted answers to queries and quickly build up a user base.

Mobile and online networking:

Companies such as friendster and orkut have created large communities for online networking that they could leverage into the mobile space. In fact, friendster has already rolled out a mobile offering in Asia that replicates some of the functionality its online platform. The key challenge for such firms to compete with <ihufs> service is that users do not use networking services to find information. In order to migrate the friendster user base to use such services would necessitate a significant shift in strategy and brand that would prove very difficult. In addition, networking firms do not necessarily possess the technology platforms for robust search functionality. <ihufs> believes that networking firms present viable partners as opposed to true competitors.

LBS services:

Services such as earthcomber and crunkie (offered by Wavemarket) take advantage of location based technologies that allow users to identify areas, people and interact with the environment. These services are not explicitly focused on finding information nor do they appear to have engines that would allow for search capabilities. In addition, LBS are still in its infancy and it will be interesting to see which services have the right business model and can build a user base to weather the ramp to widespread usage of search services. <ihufs> does not view these services as viable high threats given these factors.

Key Questions and Possible Resolutions

These are additional questions that will be answered once further development work is undertaken (but with proposed current answers):

1. What are the possible locations an <ihufs> user can ask a query from? (e.g. mobile, pc, web?) What about an Answerer?

-Questioner can ask question from mobile (phone, wireless pda, etc.), pc (im client), browser, phone (voice based)

-Answerer can answer anywhere as well but would be more likely to answer via desktop IM

-Voice is not likely to be used in initial phases of rollout due to types of queries that we initially anticipate (e.g. no need for a phone call when all you are looking for is the nearest coffee shop)

2. How does the <ihufs> system know how to route to the Answerer (if we are supporting multiple <ihufs> interfaces?)

-Based on default preferences of the answerer, answerer status on different platforms (e.g. away, here, etc.), ranking (desktop then mobile then voice, etc.)

3. How complex can the query get? What if the user, for instance, wants "a wine bar, that is inexpensive, and has a low-key vibe"? Can this be communicated in a simple enough (i.e. minimal transactions) query?

-Can be as complex as questioner desires, a more detailed query may limit number of responses but may provide for a more targeted answer. Also may provide for additional data points such that FAQ database can reference

4. What if the user wants to continue a "conversation" with the <ihufs> Answerer (e.g. the initial response was not clear enough or inaccurate)?

-Default will be blind im (no user information given unless within the same community)

5. What kind of criteria are used to route to appropriate <ihufs> Answerers?

-Answer preferences and user demographic information. Initially the default will be to route based on answerer demographic information and X degrees of separation within the answerer network.

6. What kind of criteria are used to select an appropriate <ihufs> answer? Is it only time-based, or should there be smart filtering or processing (e.g. spelling correction, blank answers, etc)? Is there a priority list? How are answers queued?

-Time based will be the initial filter (with college students used as a plug if the query is not answered in X seconds)

-There may be a numeric system by which points are allocated to a given answer based on degrees of separation, end user satisfaction with previous query results and purported industry expertise. The answer(s) with the highest number of points in X seconds would be returned

-Will be able to receive multiple answers based on platform used (e.g. may be easy to receive multiple responses using a J2ME app but not voice)
-All answers (even those not returned) are stored in the FAQ so that should a questioner want additional responses, they will be readily available (e.g. with initial response to query, there will be an option to get additional responses)

7. How many Answerers receive queries? Is this dynamic?

-Answerers will express a preference for number of queries but the default will be 1 a day
Will be dynamic

8. What are the expected types/formats of answers given by Answerers? (e.g. addresses? Directions? Descriptions? Free form text? Images, pictures? Map?)

-Free form will recommend templates based on type of question (e.g. directions should be answered with 123 Main St., cross St. is Broadway)
Probably not images right away (for maps maybe a partnership with mapquest?)

9. What if the user receives an answer that is unsatisfactory? How do we envision the use case afterwards (i.e. Receive other answers)?

-Yes can respond via hot key (e.g. *11 want a different answer and whatever answers were queued next will be automatically routed). Can also clarify and build on question

10. Are all queries treated the same? (e.g. location based versus customer reviews)

-There must an algorithm that recognizes the complexity of the query as well as the desired response time (e.g. if you are driving and looking for the closest fast food restaurant that is much more time sensitive then if you are in Best Buy waiting for a review of a DVD player)

11. How will the FAQ database work?

-All queries and results will be tagged (including date) and stored in a FAQ database. The search algorithm must be robust enough to simultaneously search the FAQ database as well as ping users. In the event there is high percentage match along a number of variables (e.g. greater than 90% match), one of the results presented will be from this stock database

12. What types of information are more likely to be desired?

-We anticipate that location based information will be desired the most due to both primary and secondary research. We will be pushing these types of services in our positioning as we believe that the value proposition to end users is clearly defined and that end users are able to relate to the services.

13. How will <ihufs> account for queries that are exclusionary in nature?

-<ihufs> will employ a logic tree that should be able to parse specific queries such as “coffee shop but not Starbucks” and will also use the FAQ to augment answers.

-In the <ihufs> “how to” section, there will be examples of different types of queries that will provide suggested query structure

Key Challenges

There are a number of key challenges that may impede the ultimate success of <ihufs>. They include:

1. If competitors gain traction more quickly than <ihufs>. If one of competitors (either startup or established player) in the search market is able to become the entrenched leader in mobile information finding, users may be hesitant to embrace the <ihufs> service even though the offering differs from mobile search.
2. <ihufs> can not build a large enough user that actively makes queries. The economics of this model only work when <ihufs> has a number of users that make queries that can be advertising supported.
3. <ihufs> users are not willing or able to provide answers to the community. While there will be researchers and a FAQ database, these are last resort measures. In order for <ihufs> to work, users feel connected to community and answer questions.
4. <ihufs> is not a able to create a search algorithm and logic process that allows for quick forward of queries to applicant potential answerers thereby limiting the effectiveness of the service.
5. Pricing for advertising drops. This is less of a concern given that we used the lowest possible price points for assumptions which we believe may be low given the potential significant benefits to advertisers.
6. Advertisers are not able to measure effectiveness of ad placements. While this is not likely in the event that there is no way to judge ROI, advertisers may delay rolling out mobile ad placement for some time.
7. <ihufs> is not able to partner with and establish reasonable terms with carriers regarding revenue sharing on SMS. Since SMS will be the initial service usage, it is critical that <ihufs> lock in these relationships. This is not a significant concern as many other companies have been able to create SMS codes.

Management Team

Bong's background is as an entrepreneur, investment banker, management consultant and venture capitalist. He was a co-founder of Mobilocity where he raised over \$20 million in venture funding from Morgan Stanley and JP Morgan, built the organization to over 100 employees and sold its assets to Qualcomm's Enterprise Software and Services Group and to Omnicom's Agency. He has also worked at McKinsey & Company in the High Tech Practice, Salomon Smith Barney in M&A and Walnut Venture Associates. He holds a BA from Yale University and is currently completing his SM at MIT.

AA's background is as an entrepreneur, operator and consultant. He was previously Head of Qualcomm's Enterprise Services Group and also ran international business development in Qualcomm's MediaFLO Group. He joined Qualcomm through its acquisition of Mobilocity where he was a co-founder and CTO and worked with clients including HP, BP and Merrill Lynch. AA has also started and worked in startup organizations that were successfully acquired by Time Warner and US Web. He was also Consultant of Year at Deloitte helping to launch their MidWest Solutions Group. Omar holds a BS from the University of Michigan.

BB's background is as an engineer, product manager and consultant. Prior to starting <ihufs>, BB ran AP's mobile group spearheading a number of initiatives to get content distributed on a variety of devices and platforms. Prior to joining AP, BB was at New York Life Insurance and Ramp in engineering roles and worked with Bong and AA as a Senior Engineer at Mobilocity. He began his career at Lucent where he worked on building Yahoo's initial mobile IM platform. BB holds a BS from the University of Michigan and an MBA from NYU Stern.

CC's background is as an entrepreneur, marketing manager and product manager. Prior to starting <ihufs>, CC was at ebay where he helped develop its international marketing strategy. He also worked at Yahoo! running their Asian SMS and mobile campaigns. He joined Yahoo! through the acquisition of kimo.com for \$200 million where he was part of the founding team. He also worked at Morgan Stanley in investment banking. CC holds a BA from the University of California, Berkeley.

[TBD] Search Engine Engineer- Database and search algorithm engineer. Experience at Yahoo! (Overture) or Google desired.

Appendices

Competitive Matrix

Company	Space/Background/team	Offering	Partners	Business Model	Investors	Test	Notes
422 www.422.info	-mobile directory assistance	-dial 422		-pay per query?	-DFJ	-	-web site is devoid of any information
4info www.4info.net	-mobile information finding service	-uses SMS short code 44636 (4info) -promises answer w/in 10 seconds -directory -weather -sports -stock prices -flight updates -movie times		-advertising?	-raised \$8 m from USVP and DFJ	-02139 korean resulted Korea Garden (which does not exist) and no advertising and another message for a Korean church (with a reply 1 for more info)	-Forums to post information -No apparent use of community website -registration at future date
AQA http://www.issuebits.com/ (Any Question Answered)	-Information finding service -UK based -former CEO of symbian	-uses SMS code 63336 -promises answer within a couple of minutes -employs 100 researchers to answer your question		-cost per query			-
Dodgeball www.dodgeball.com	-mobile social networking	-will help you find people in		-location based			

Company	Space/Background/team	Offering	Partners	Business Model	Investors	Test	Notes
	-founded in 2000	your network who are geographically close -find venue location if you know name		advertising platform -based on date/time, geography, weather			
Earthcomber www.earthcomber.com	-mobile place finder	-based on city list and type of place to find will find -mobile yellow pages (businesses must opt in)		-business supported			-allows you to create map logs (plog) and mark your own spots
Evite www.evite.com	-social planning -expanding into social networking	-initially used to help people coordinate parties -expanding into service that allows users to recommend restaurants, bars, etc.		-advertising	-part of IAC/Interactive Corp (IACI)		
Friendster www.friendster.com	-social networking -founded 2002	-allows users to build and search and contact a network of users -friendster mobile is just a mobile extension of friendster		-advertising supported	-Kleiner -Battery -Benchmark		-not US based
Google www.google.com	-search engine -Google SMS	-uses short code 46645 (googl)		-advertising based	-Publicly traded	-02139 korean	

Company	Space/Background/team	Offering	Partners	Business Model	Investors	Test	Notes
	-Google Hello -Google Search	-local business listings -movie show times -weather -stock quotes -product prices -dictionary definitions			corporation	resulted in shilla, Korean church and another Korean restaurant in Somerville	
Insiderpages www.insiderpages.com	-local search	-yellow pages written by friends -categories include automotive, career, health, entertainment, etc. -most popular searches included dentist, restaurant, plumber, hair stylist, sushi			-idealab		
Microsoft							
Orkut www.orkut.com	-social networking		-Google				-by invitation only
ScanSoft www.scansoft.com (acquired Lobby7)	-speech and imaging solutions	-x mode multimodal server -enterprise focus			-publicly traded corporation		

Company	Space/Background/team	Offering	Partners	Business Model	Investors	Test	Notes
Socialight http://www.socialight.com/	-mobile social networking	-location based messages known as sticky shadows (allow for users to know if a member in their network is nearby)					-community of users that place sticky shadows
Upoc www.upoc.com	-mobile community -founded 1999	-a number of communities including arts, sports, shopping, etc. -different short codes for different groups - can also send via email		-business service offerings including integrated mobile marketing campaigns		-Advent International -Patricof -Tribune Ventures	-member registration
Wavemarket www.wavemarket.com	-alert/trigger locations services and location blogging on mobile handsets -Crunkie	-waveIQ enables mobile handsets to spot and broadcast text to peers -crunkie location based blogging			-DFJ -Bluerun (formerly Nokia Ventures)		
Yahoo							

Potential User Survey

Background information:

1. Gender
 - a. Male
 - b. Female
2. Age
 - a. 18-25
 - b. 26-35
 - c. 36-45
 - d. 46+
3. Income
 - a. <\$20,000
 - b. \$20,000<\$50,000
 - c. \$50,000<\$100,000
 - d. >\$100,000
4. Do you have a cell phone?
 - a. Yes
 - b. No

Wireless Questions for people with cell phones

If you answered “yes” to question 4 of having a cell phone, please answer these questions:

5. What wireless data services do you have and use?
 - a. Picture messaging
 - i. Have
 - ii. Use
 - b. Alerts
 - i. Have
 - ii. Use
 - c. IM
 - i. Have
 - ii. Use
 - d. Browsing
 - i. Have
 - ii. Use
 - e. Email
 - i. Have
 - ii. Use
 - f. Graphic download capabilities
 - i. Have
 - ii. Use

- g. Game download capabilities
 - i. Have
 - ii. Use
 - h. Ringtone download capabilities
 - i. Have
 - ii. Use
 - i. Text messaging
 - i. Have
 - ii. Use
6. What are the top 3 features you use (or would like to use if available on your phone)?
- a. IM
 - b. Music
 - c. Email
 - d. People finder
 - e. Wireless web
 - f. Picture/video messaging
 - g. Text messaging
 - h. Yellow pages/directory assistance
 - i. Ringtone downloads
 - j. Alerts
 - k. TV
 - l. Other
7. Would you specifically be interested in a service that allows users to find information (such as restaurant listings) from a mobile phone?
- a. Yes
 - b. No
8. What types of information would you like to find using your mobile phone?
- a. [open ended]

Other questions

9. Do you use any type of search engines (e.g. Google, yahoo, orbitz, sidestep)?
- a. Yes
 - b. No
10. If you answered “yes” to question 9 how often do you use search engines?
- a. <1 a day
 - b. Once a day
 - c. 2-5 times a day
 - d. >5 times a day
11. Do you use any networking sites (e.g. friendster, linkedin)?
- a. Yes
 - b. No
12. If you answered “yes” to question 11 how often do you use networking sites?
- a. Every day
 - b. Once a week

- c. Once a month
 - d. Very rarely
13. Do you use online forums/message boards to find information?
- a. Yes
 - b. No
14. If you answered “yes” to question 13 how often do you use online forums/message boards to find information?
- a. Every day
 - b. Once a week
 - c. Once a month
 - d. Very rarely
15. Do you use IM?
- a. Yes
 - b. No
16. If you answered “yes” to question 15 do you use multiple clients (e.g. AIM, MSN and yahoo) and do you use an aggregator (e.g. trillian)
- a. Yes
 - b. No

Survey Results and Analysis

In analyzing the data from the wireless consumer services survey that I conducted there are a few key points that need to be mentioned. First of all the number of response was 145 with a distribution as follows:

- 74% Male and 26% Female
- 91% of respondents between the ages of 26-35
- Income was distributed 33% <20k, 12% between 20k and 50k, 28% between 50k and 100k, and 27% >100k but is essentially meaningless given that most of the respondents are in business school and current income does not really reflect real economic status.

Given this information, it was difficult to analyze the data based on either age or income. I did analyze the differences between genders and the only meaningful difference was in top 3 features desired on a phone. Males were more interested in music (19.8% vs. 8.6%) and females picture/video messaging (17.1% vs. 8.3%).



Other key findings include:

- Text messaging is both the most widely used wireless data service and most desired service. 76% of the survey respondents have and use text messaging services, the next most used services is wireless browsing but with only 26% of the survey respondents using this service. In addition, fully 65% of the survey respondents said that text messaging is one of their top 3 features desired. Next came wireless web at 38% and yellow pages/directory assistance at 36%. This validates the findings that Yankee Group had previously been discussed. This is relevant to <ihufs> as the initial mobile service will be launched on wireless devices using SMS.
- The fact that yellow/pages directory assistance is one of the most desired top 3 features (36%) bodes well for information finding services such as <ihufs>. In addition, when specifically asked if users would be interested in an information finding service from a mobile phone, fully 79% of users responded “yes.”
- Specific types of information desired by survey respondents revolved mostly around location based services including directions, restaurant and bar locations, directory assistance and entertainment services including movies and sports which is in alignment with the original <ihufs> user scenarios.
- Encouraging is the fact that greater than 40% of users have the ability to wireless browse (45%), email (40%), download graphics (45%), games (52%) and ringtones (63%). This is relevant to <ihufs> for in the continued evolution of <ihufs> services it is anticipated that there will be a J2ME/Brew app that must be downloaded. Some current phones have the capability to use J2ME/Brew apps.
- Greater than half of survey respondents (53%) profess to using search engines more than 5 times a day. For the <ihufs> model to work, there must be migration of search queries from the desktop platform to mobile devices. Given the fact




that only a portion of searches can and will be conducted on mobile devices, there needs to be significant usage on desktop platforms which this answer verifies.

- While most people did not purport to use networking sites often, more relevant is the fact that people did use them at some point (72%). This is due to the fact that people need only understand the concept and in theory be willing to use networking sites. <ihufs> will offer a compelling reason to use networking tools for which sites like friendster are currently grappling with.
- While only 48% of survey respondents use online forums/message boards, that number is encouraging for these respondents are the ones most likely to initially answer questions based on their understanding of the dynamics of how online forums/message boards work. Clearly, longer term <ihufs> needs to demonstrate value to the end user and questioners in order build a viable business.
- Fully 73% of survey respondents use IM on a regular basis and of that 73%, 49% used an IM aggregator. This is particularly important for <ihufs> as these individuals are the ones who are most likely to be pinged for query responses.





1. Gender

	Response Percent	Response Total
Male 	74.1%	106
Female 	25.9%	37
Total Respondents		143
(skipped this question)		0



2. Age

	Response Percent	Response Total
Less than 18	0%	0
18-25 	5.6%	8
26-35 	90.9%	130
36-45 	3.5%	5
46+	0%	0
Total Respondents		143
(skipped this question)		0

3. Income

	Response Percent	Response Total
<\$20,000 	32.9%	46
\$20,000<\$50,000 	12.1%	17
\$50,000<\$100,000 	27.9%	39
>\$100,000 	27.1%	38
Total Respondents		140
(skipped this question)		3

4. Do you have a cell phone

	Response Percent	Response Total
Yes 	97.9%	140
No 	2.1%	3
Total Respondents		143
(skipped this question)		0



5. Which wireless data services do you have and use

	Do not have	Have and do not use	Have and use service	Response Total
Picture messaging	59% (80)	32% (44)	9% (12)	136
Alerts	43% (58)	39% (53)	18% (25)	136
IM	57% (77)	31% (42)	12% (17)	136
Browsing	29% (40)	45% (61)	26% (35)	136
Email	41% (56)	40% (55)	18% (25)	136
Graphic download capabilities	38% (52)	45% (61)	17% (23)	136
Game download capabilities	38% (51)	52% (71)	10% (14)	136
Ringtone download capabilities	23% (31)	63% (86)	14% (19)	136
Text messaging	6% (8)	18% (25)	76% (103)	136
Location based services	68% (92)	24% (32)	8% (11)	135
			Total Respondents	136
			(skipped this question)	7

6. What are the top 3 features you use (or would like to use if available on your phone)?

	Response Percent	Response Total
IM	17.7%	23
Music	16.9%	22
Email	50%	65
People finder	11.5%	15
Wireless web	37.7%	49
Picture/video messaging	10.8%	14
Text messaging	65.4%	85
Yellow pages/directory assistance	36.2%	47
Ringtone downloads	13.1%	17
Alerts	11.5%	15
TV	5.4%	7
Other (please specify)	13.1%	17
	Total Respondents	130
	(skipped this question)	13



7. Would you specifically be interested in a service that allows users to find information (such as restaurant listings) from a mobile phone

	Response Percent	Response Total
Yes 	78.5%	106
No 	21.5%	29
Total Respondents		135
(skipped this question)		8


8. What types of information would you like to find using your mobile phone

Total Respondents	62
(skipped this question)	81

9. Do you use any type of search engines (eg google, yahoo, orbitz, sidestep)

	Response Percent	Response Total
Yes 	98.5%	131
No 	1.5%	2
Total Respondents		133
(skipped this question)		10

10. If you answered "yes" to question 9 how often do you use search engines





	Response Percent	Response Total
<1 a day 	3.1%	4
Once a day 	5.3%	7
2-5 times a day 	38.2%	50
>5 times a day 	53.4%	70
Total Respondents		131
(skipped this question)		12

11. Do you use any networking sites (eg friendster, linkedin)



	Response Percent	Response Total
Yes 	72.2%	96
No 	27.8%	37

Total Respondents	133
(skipped this question)	10





12. If you answered "yes" to question 11 how often do you use networking sites?

	Response Percent	Response Total
Every day 	5.2%	5
Once a week 	29.9%	29
Once a month 	29.9%	29
Very rarely 	35.1%	34
Total Respondents		97
(skipped this question)		46

13. Do you use online forums/message boards to find information

	Response Percent	Response Total
Yes 	47.7%	62
No 	52.3%	68
Total Respondents		130
(skipped this question)		13

14. If you answered "yes" to question 13 how often do you use online forums/message boards to find information



	Response Percent	Response Total
Every day 	10.1%	7
Once a week 	31.9%	22
Once a month 	36.2%	25
Very rarely 	21.7%	15
Total Respondents		69
(skipped this question)		74

15. Do you use IM?

	Response Percent	Response Total
Yes 	72.9%	97
No 	27.1%	36

Total Respondents 133
(skipped this question) 10

16. If you answered "yes" to question 15 do you use multiple clients (eg AIM, MSN and yahoo) and do you use an aggregator (eg trillian)

	Response Percent	Response Total
Yes 	48.5%	48
No 	51.5%	51
Total Respondents		99
(skipped this question)		44

What types of information would you like to find using your mobile phone

1. Sports Updates Weather
2. ~current location/maps/directions
3. maps movie times
4. map, restaurant information, weather information, available golf course and tee-time
5. none really
6. yellow and white pages most often
7. directions
8. addresses factoids breaking news scores weather reviews
9. Address and phone lookup based on people and company names, and vice versa (i.e. reverse phone lookup). Also, directions to a place, or simply getting a map of a surrounding if I'm trying to find a place that's hard to find. The key here is to integrate this smoothly to minimize the hassle, e.g. if I look up an address for a friend, I can easily get directions to him; or when I look up a phone number, the search is integrated for my contact database and the public database, so there's no need to do two searches or be conscious about where I'm looking. This would also make the main UI simpler. I'm really into anything mobile, so if you want to chat, feel free to call me 781-588-5588. Gummi, gummi@sloan.mit.edu.
10. Restaurants, 411/search, directions by speaking (not via text entry)
11. Apt rentals Financial news & weather info
12. sports scores, directory / information services with ratings by consumers or edits (e.g. zagat)
13. Entertainment providers, etc.
14. directions phone numbers
15. Movie times, location of restaurants and bars, coffee shop, etc.
16. movie times, phone numbers, addresses
17. Locational stuff, directions, maybe Zagat's type restaurant guide
18. everything that i can
19. It all depends on usability

20. Directions and maps.
21. Directions/GPS
22. phone numbers, directions
23. Convenience info (stores, restaurants, pharmacies...)
24. movies location – schedule, restaurant types + location, local city & government offices location + schedule
25. directions when i;m lost
26. Directory service besides 411 (like if there were a service w/a really cheap monthly fee or something)
27. Isn't what you're offering something that telme does? I want that plus GPS
28. Location-based services that utilizes auto-location (E911 technology) Movie trailers Sports highlights
29. Reviews, location, menu, etc
30. "drive thru" restaurants "open late" where I am driving directions airplane flight status
31. how to find a job in venture capital
32. listings and directions within immediate local area i.e. restaurants, coffee, parking, subway stops, cab stand, etc.
33. Driving directions Google SMS services (e.g. price comparison, nearest restaurants, etc)
34. Sports scores. An alert when my credit card is charged.
35. Phone numbers/listings, restaurants, movie show times, etc.
36. movie times and restaurants would be good, club listings, entertainment.
37. Restaurants, bars, public restrooms
38. none, I want telephone service
39. Restaurant Reviews Movie Listings Directions
40. Stores, services, restaurants.
41. Restaurants, movies, stores etc... What they already have in Vindigo or Zagat for palm....
42. CitySearch type (best places in the area)
43. Anything I could find with a computer
44. Directions and yellow pages (but fast!!! not like how it is now)
45. It would be good to get restaurant listings, directions etc from my phone - but I'd only use it if it were free, or pay for it if it were incredibly quick & convenient, and even then I'm not sure my WTP would be particularly high.
46. Restaurants Movies Directions
47. biz service info - hours of op, location, phone #, addr.
48. GPS map information would be nice.
49. Movie times Restaurants by neighborhood Directory assistance Sports scores News updates
50. Store locations ALONG A HIGHWAY or ROUTE. I never know the zip code of where I am and the auto-locator is unreliable and slow. Plus, by the time it finds the seven Starbucks near me, I've already driven past half of them and another third are way off the highway.
51. Maps. GPS-type stuff.
52. Restaurants, bars/clubs, coffee shops, internet cafes, auto repair/parts facilities.

- 53. Restaurants, bars, parking facilities, directions, local events
- 54. take out menus and phone numbers
- 55. restaurants, directions, stock market updates, stores, general info
- 56. Directions Bars Restaurants
- 57. local info, news, sports, stock quotes, rss feeds, alerts, music, music videos, movie trailers
- 58. distance/directions to a location ... like a GPS
- 59. restaurants / movie listings / directory inquiry
- 60. Local italian restaurants
- 61. Driving directions, maps, directories, wheather
- 62. local news, cultural events, directions, special offers and sales
- 63. Restaurant Movie Listings Events Nightlife Directions
- 64. Nearby restaurants and bars with associated reviews (like Zagats & Citysearch), movie times, public transportations location (like GPS on buses, subways, etc.)
- 65. directory assistance yellow pages people finder

Gender based differences in survey results:

Base wireless data service usage

	DNH	HaDNU	HaUS
Picture Messaging	59%	32%	9%
Alerts	43%	39%	18%
IM	57%	31%	12%
Browsing	29%	45%	26%
Email	41%	40%	18%
Graphic DL Cap	38%	45%	17%
Game DL Cap	38%	52%	10%
Ringtone DL Cap	23%	63%	14%
Text messaging	6%	18%	76%
LBS	68%	24%	8%

Gender Based
Male

	DNH	HaDNU	HaUS
Picture Messaging	56%	34%	10%
Alerts	38%	40%	22%
IM	52%	33%	15%
Browsing	27%	43%	29%
Email	37%	41%	22%
Graphic DL Cap	35%	44%	21%
Game DL Cap	37%	52%	11%
Ringtone DL Cap	22%	64%	15%
Text messaging	6%	21%	74%
LBS	64%	28%	8%

Gender Based
Female

	DNH	HaDNU	HaUS
Picture Messaging	69%	26%	6%
Alerts	57%	34%	9%
IM	71%	23%	6%
Browsing	37%	49%	14%
Email	54%	37%	9%
Graphic DL Cap	49%	46%	6%
Game DL Cap	40%	51%	9%
Ringtone DL Cap	29%	60%	11%
Text messaging	6%	14%	80%
LBS	82%	9%	9%

Base top 3 Features

	Gender Neutral	Male	Female
Im	17.7%	17.7%	17.1%
Music	16.9%	19.8%	8.6%
Email	50.0%	47.9%	54.3%
People finder	11.5%	10.4%	14.3%
Wireless Web	37.7%	39.6%	31.4%
Picture/Video messaging	10.8%	8.3%	17.1%
Text messaging	65.4%	62.5%	71.4%
Yellow pages/directory assistance	36.2%	32.3%	45.7%
Ringtone downloads	13.1%	12.5%	14.3%
Alerts	11.5%	11.5%	11.4%
TV	5.4%	6.2%	2.9%
Other	13.1%	16.7%	5.7%

Financials

Income Statement

Income Statement Summary

	01 Y1	02 Y1	03 Y1	04 Y1	Year 1	01 Y2	02 Y2	03 Y2	04 Y2	Year 2	01 Y3	02 Y3	03 Y3	04 Y3	Year 3
Revenue	0	151	2,335	12,913	15,366	41,210	103,026	206,051	412,102	762,369	618,153	824,204	1,030,255	2,060,510	4,533,123
Search	0	53	815	4,507	5,375	4,785	11,968	23,976	47,951	88,710	71,927	95,902	119,878	239,756	527,463
License	0	204	3,150	17,420	20,774	46,005	115,013	230,027	460,053	851,088	690,080	920,106	1,150,133	2,300,266	5,060,596
Total Revenue	(68,000)	(108,015)	(152,234)	(163,291)	(481,540)	(196,121)	(202,303)	(212,805)	(233,210)	(844,239)	(271,815)	(292,420)	(313,026)	(416,051)	(1,263,312)
COGS	(68,000)	(107,811)	(149,083)	(145,871)	(470,766)	(150,116)	(87,288)	17,422	226,843	6,960	418,265	627,686	837,108	1,884,215	3,767,273
Gross Profit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gross Margin		-52.667%	-47.32%	-83.7%	-23.66%	-3.26%	-7.6%	8%	49%	1%	61%	68%	73%	82%	74%
Operating costs	(68,000)	(117,333)	(297,167)	(544,500)	(1,027,000)	(565,000)	(840,000)	(690,000)	(910,000)	(2,365,000)	(775,000)	(1,025,000)	(845,000)	(1,045,000)	(3,690,000)
Sales and marketing	(33,000)	(33,000)	(67,500)	(67,500)	(201,000)	(152,500)	(152,500)	(152,500)	(152,500)	(610,000)	(152,500)	(152,500)	(152,500)	(152,500)	(610,000)
General and administrative	(250,000)	(410,000)	(440,000)	(500,000)	(1,600,000)	(500,000)	(500,000)	(530,000)	(530,000)	(2,060,000)	(530,000)	(530,000)	(530,000)	(530,000)	(2,120,000)
Product development	(351,000)	(660,333)	(604,667)	(1,112,000)	(2,828,000)	(1,217,500)	(1,492,500)	(1,362,500)	(1,592,500)	(5,665,000)	(1,457,500)	(1,707,500)	(1,527,500)	(1,727,500)	(6,420,000)
Total operating costs	(419,000)	(668,145)	(953,750)	(1,257,871)	(3,298,766)	(1,367,616)	(1,579,789)	(1,345,078)	(1,365,657)	(5,659,140)	(1,039,235)	(1,079,814)	(890,392)	(1,156,715)	(2,652,727)
EBITDA	(1,167)	(2,333)	(2,333)	(2,333)	(8,167)	(1,444)	(1,444)	(1,444)	(1,444)	(5,776)	(1,444)	(1,444)	(1,444)	(1,444)	(5,776)
Depreciation	(420,167)	(670,478)	(956,083)	(1,260,205)	(3,306,932)	(1,369,060)	(1,561,234)	(1,346,523)	(1,367,101)	(5,663,916)	(1,040,660)	(1,061,258)	(691,837)	155,271	(2,658,504)
Taxable income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Provision for taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net income	(420,167)	(670,478)	(956,083)	(1,260,205)	(3,306,932)	(1,369,060)	(1,561,234)	(1,346,523)	(1,367,101)	(5,663,916)	(1,040,660)	(1,061,258)	(691,837)	155,271	(2,658,504)

Direct Cash Flow Statement

	01 Y1	02 Y1	03 Y1	04 Y1	Year 1	01 Y2	02 Y2	03 Y2	04 Y2	Year 2	01 Y3	02 Y3	03 Y3	04 Y3	Year 3
Cash inflows															
Net revenues	-	204	3,150	17,420	20,774	46,005	115,013	230,027	460,053	851,098	890,080	920,106	1,150,133	2,300,266	5,060,586
Cash outflows															
Cost of service	(86,000)	(106,015)	(152,234)	(163,291)	(481,540)	(196,121)	(202,303)	(212,805)	(233,210)	(644,239)	(271,815)	(292,420)	(313,026)	(416,051)	(1,289,312)
Sales & Marketing	(66,000)	(117,333)	(237,167)	(544,500)	(1,027,000)	(565,000)	(640,000)	(660,000)	(910,000)	(2,995,000)	(775,000)	(1,025,000)	(945,000)	(1,045,000)	(3,690,000)
General & Administrative	(33,000)	(32,000)	(67,500)	(67,500)	(201,000)	(152,500)	(152,500)	(152,500)	(152,500)	(610,000)	(152,500)	(152,500)	(152,500)	(152,500)	(610,000)
Product Development	(250,000)	(410,000)	(440,000)	(500,000)	(1,500,000)	(500,000)	(500,000)	(530,000)	(530,000)	(2,080,000)	(530,000)	(530,000)	(530,000)	(530,000)	(2,120,000)
Add back Depreciation	1,167	2,333	2,333	2,333	8,167	1,444	1,444	1,444	1,444	5,778	1,444	1,444	1,444	1,444	5,778
Total cash outflows	(417,833)	(665,015)	(954,567)	(1,272,968)	(3,311,373)	(1,412,177)	(1,693,366)	(1,573,661)	(1,824,266)	(6,503,461)	(1,727,871)	(1,988,476)	(1,839,081)	(2,142,107)	(7,707,536)
Cash flow from operating activities	(417,833)	(665,811)	(651,416)	(1,255,538)	(3,290,599)	(1,366,171)	(1,578,345)	(1,343,634)	(1,364,213)	(6,652,363)	(1,037,791)	(1,078,369)	(688,948)	158,160	(2,646,949)
Cash flow from investing						0	0	0	0		0	0	0	0	
Cash flow from financing	1,000,000	4,000,000	-	-	5,000,000	8,000,000	0	0	0	6,000,000	0	0	0	0	-
Founders	100,000	-	-	-	100,000	-	-	-	-	-	-	-	-	-	-
Angels	900,000	-	-	-	900,000	-	-	-	-	-	-	-	-	-	-
VC	-	4,000,000	-	-	4,000,000	8,000,000	-	-	-	6,000,000	-	-	-	-	-
Change in cash	582,167	3,334,189	(651,416)	(1,255,538)	1,709,401	6,633,829	(1,578,345)	(1,343,634)	(1,364,213)	2,347,637	(1,037,791)	(1,078,369)	(688,948)	158,160	(2,646,949)
Cash balance	582,167	3,916,355	2,964,939	1,709,401	1,709,401	8,343,230	6,764,885	5,421,251	4,057,038	4,057,038	3,019,247	1,940,878	1,251,930	1,410,090	1,410,090

Balance Sheet

	Year 1		Year 2	Year 3
	H1	H2		
Assets				
Cash and marketable securities	3,916,355	1,709,401	4,057,038	1,410,090
PPE, net	24,500	19,833	38,056	32,278
Total Assets	3,940,855	1,729,234	4,095,094	1,442,367
Liabilities				
Accounts payable	17,000	126,500	133,333	133,333
Accrued expenses	-	-	-	-
Total current liabilities	17,000	126,500	133,333	133,333
Total Liabilities	17,000	126,500	133,333	133,333
Stockholder's equity	3,923,855	1,602,734	3,961,761	1,309,034

Search Revenue Template

Month Template

# of Users	Vertical	Per User Daily	Queries		Monthly Total	Fill %	Monthly Filled	Monthly Not Filled	Click Through Rate	Keyword Search	Filled Revenue	Not Filled Revenue	Total Monthly Revenue
			Total Daily	Days									
1,000	Consumer Services	0.266	266	30	7,960	7.7%	80	7,900	0.73%	2	\$9.24		
	Consumer Travel Hospitality	0.166	166		4,960	6.0%	50	4,930	6.0%	1	\$3.51		
	Consumer Retail	0.566	566		16,960	8.0%	170	16,810	8.0%	1	\$7.06		
	Total						299	29,641			\$18.80	\$118.56	\$137.37

Generic CPM (Cost per thousand impressions)
Wireless \$1.00-4.00



Data needed:

- # of users
- Ramp up of users
- Per user usage (Use search comp.)
- Fill %
- Ramp up of Fill % (as network gets bigger and ad inventory gets bigger should be able to fill more)
- Generic CPM prices
- Keyword search prices (based on click through rates)
- Click through rate, use email marketing rates? Use 8% click through for email (cant actually know)

Consumer Services	0.16	0.2666667
Consumer Travel Hospitality	0.1	0.1666667
Consumer Retail	0.34	0.5666667
	0.5	1

Jupiter Research 05 Vertical Search

Sponsor Revenue Template

Sponsorship based on 2 dimensions including targeted emails based on communities, demographics, etc. and web site sponsorship (ala Friendster)

Month Template	# of Users	# of emails Monthly	Vertical	Email Open rate	Conversion Rate	Clickthrough Rate	Cost Per Click Through	Total Monthly Revenue
	1,000	100	Financial Services	21.00%	2.24%	8.79%	\$8.79	\$8.79
		100	Consumer Products	25.00%	2.94%	8.74%	\$8.74	\$8.74
		100	Travel	37.00%	3.94%	8.27%	\$8.27	\$8.27
		100	Retail and catalog	20.00%	2.04%	7.04%	\$7.04	\$7.04
		100	Publisher-consumer	23.00%	2.41%	7.41%	\$7.41	\$7.41
		100	Consumer services	31.00%	3.71%	7.71%	\$7.71	\$7.71
			Total					\$47.95

Use \$.40 cost per clickthrough, Jupiter Research 07/04

Use 8.0% clickthrough rate- emarketer from doubleclick 03/05

Assume clickthrough rate of 8%/32.6%

8.00%

32.60%

24.54%

Will not compute web site sponsorship as do not expect there to be a significant amount of time spent on <ihufs> web site

Expense Details General & Administrative	Year														
	01 Y1	02 Y1	03 Y1	04 Y1	Year 1	01 Y2	02 Y2	03 Y2	04 Y2	Year 2	01 Y3	02 Y3	03 Y3	04 Y3	Year 3
Salary	0	10,000	10,000	10,000	60,000	85,000	85,000	65,000	85,000	340,000	85,000	85,000	85,000	85,000	340,000
Rent	0	0	30,000	30,000	60,000	30,000	30,000	30,000	30,000	120,000	30,000	30,000	30,000	30,000	120,000
Office equipment and supplies (PC, phones etc)	3,000	3,000	7,500	7,500	21,000	7,500	7,500	7,500	7,500	30,000	7,500	7,500	7,500	7,500	30,000
Professional Fees	30,000	30,000	30,000	30,000	120,000	30,000	30,000	30,000	30,000	120,000	30,000	30,000	30,000	30,000	120,000
Total G&A	33,000	33,000	67,500	67,500	201,000	152,500	152,500	152,500	152,500	610,000	152,500	152,500	152,500	152,500	610,000
COGS															
Headcount															
Customer Service	0	0	24,000	24,000	48,000	24,000	24,000	24,000	24,000	96,000	24,000	24,000	24,000	24,000	96,000
Software Engineers	60,000	60,000	60,000	70,000	250,000	90,000	90,000	90,000	90,000	360,000	90,000	90,000	90,000	90,000	360,000
Researchers	0	40,000	60,000	60,000	160,000	60,000	60,000	60,000	60,000	240,000	60,000	60,000	60,000	60,000	240,000
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total headcount	60,000	100,000	144,000	154,000	458,000	174,000	174,000	174,000	174,000	696,000	174,000	174,000	174,000	174,000	696,000
Other															
Servers (\$/unit)	2,000	2,000	2,000	2,000	8,000	6,000	6,000	6,000	6,000	24,000	12,000	12,000	12,000	12,000	48,000
Database/Software (\$/unit)	3,000	3,000	3,000	3,000	12,000	6,000	6,000	6,000	6,000	24,000	12,000	12,000	12,000	12,000	48,000
Bandwidth (\$/unit/month)	3,000	3,000	3,000	3,000	12,000	6,000	6,000	6,000	6,000	24,000	12,000	12,000	12,000	12,000	48,000
Total other	8,000	8,015	8,234	9,291	33,540	22,121	28,303	38,605	59,210	148,239	97,815	118,420	139,026	242,051	697,312
Total costs	68,000	108,015	152,234	163,291	491,540	196,121	202,303	212,605	233,210	844,239	271,815	292,420	313,026	416,051	1,293,312

Product Development	Year														
	01 Y1	02 Y1	03 Y1	04 Y1	Year 1	01 Y2	02 Y2	03 Y2	04 Y2	Year 2	01 Y3	02 Y3	03 Y3	04 Y3	Year 3
Headcount	40,000	40,000	40,000	40,000	160,000	40,000	40,000	80,000	80,000	240,000	80,000	80,000	80,000	80,000	320,000
Prod mgmt	60,000	60,000	60,000	90,000	270,000	90,000	90,000	90,000	90,000	360,000	90,000	90,000	90,000	90,000	360,000
IT admin	30,000	30,000	30,000	30,000	120,000	30,000	30,000	30,000	30,000	120,000	30,000	30,000	30,000	30,000	120,000
DB admin	90,000	90,000	90,000	90,000	360,000	90,000	90,000	120,000	120,000	420,000	120,000	120,000	120,000	120,000	480,000
App Dev	0	160,000	160,000	160,000	480,000	160,000	160,000	120,000	120,000	560,000	120,000	120,000	120,000	120,000	480,000
Software Architect	30,000	30,000	60,000	90,000	210,000	90,000	90,000	90,000	90,000	360,000	90,000	90,000	90,000	90,000	360,000
QA	250,000	410,000	440,000	500,000	1,600,000	500,000	500,000	530,000	530,000	2,060,000	530,000	530,000	530,000	530,000	2,120,000
Total Product Development	250,000	410,000	440,000	500,000	1,600,000	500,000	500,000	530,000	530,000	2,060,000	530,000	530,000	530,000	530,000	2,120,000
PPE	4,000	4,000	0	0	8,000	24,000	-	-	-	24,000	-	-	-	-	0
Servers	10,000	10,000	0	0	20,000	-	-	-	-	-	-	-	-	-	0
Database	14,000	14,000	0	0	28,000	24,000	-	-	-	24,000	-	-	-	-	0
Total purchases	14,000	28,000	28,000	28,000	81,667	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000
PPE stock	1,167	2,333	2,333	2,333	8,167	1,444	1,444	1,444	1,444	5,778	1,444	1,444	1,444	1,444	5,778
Depreciation expense					8,167	9,611	11,056	12,500	13,944	13,944	15,389	16,833	18,278	19,722	19,722
Accumulated depreciation					8,167	9,611	11,056	12,500	13,944	13,944	15,389	16,833	18,278	19,722	19,722
Sales & Marketing Expenses															
Salespeople (Direct-national accounts)	0	7,500	45,000	90,000	142,500	90,000	90,000	112,500	112,500	405,000	135,000	135,000	160,000	180,000	630,000
Salespeople (Direct-national accounts)	0	4,167	25,000	50,000	79,167	50,000	50,000	62,500	62,500	225,000	75,000	75,000	100,000	100,000	350,000
Salespeople (Internal-local accounts)	30,000	30,000	30,000	30,000	120,000	120,000	120,000	150,000	150,000	540,000	180,000	180,000	180,000	180,000	720,000
Salespeople (Wireless Carriers)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Head Sales people	35,000	35,000	46,667	70,000	166,667	70,000	70,000	70,000	70,000	280,000	70,000	70,000	70,000	70,000	280,000
PR Person	0	16,667	25,000	25,000	66,667	25,000	25,000	25,000	25,000	100,000	25,000	25,000	25,000	25,000	100,000
Marketing Person	0	0	20,000	40,000	60,000	60,000	60,000	60,000	60,000	270,000	90,000	90,000	90,000	90,000	360,000
Internal Advertising Costs	0	0	10,000	0	10,000	0	0	0	0	25,000	0	0	0	0	50,000
Subscription Lists	0	10,000	25,000	100,000	135,000	100,000	100,000	200,000	200,000	700,000	200,000	200,000	200,000	200,000	800,000
Media Advertisements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trade Shows	0	110,000	110,000	105,000	325,000	105,000	105,000	50,000	50,000	200,000	50,000	50,000	50,000	50,000	200,000
Travel and Entertainment	3,000	34,000	33,000	35,000	105,000	35,000	35,000	50,000	50,000	200,000	50,000	50,000	50,000	50,000	200,000
Total Sales & Marketing Expenses	69,000	117,333	297,167	544,900	1,027,000	565,000	840,000	680,000	910,000	2,985,000	775,000	1,025,000	845,000	1,045,000	3,980,000

Data for Model

Paid Search Keyword Price Index* in the US, by Industry, September 2004-January 2005

	Septem- ber 2004	Octo- ber 2004	Novem- ber 2004	Decem- ber 2004	January 2005
Finance/mortgage	\$3.17	\$4.31	\$4.74	\$4.79	\$4.93
Finance/investing	\$1.76	\$1.60	\$1.70	\$1.76	\$1.73
Telecom/broadband	\$1.89	\$1.78	\$1.59	\$1.63	\$1.57
Automobile	\$1.54	\$1.39	\$1.35	\$1.41	\$1.34
Consumer services	\$0.32	\$0.96	\$1.27	\$1.36	\$1.29
Consumer travel-hospitality	\$0.64	\$0.85	\$0.90	\$0.97	\$0.88
Telecom/wireless	\$1.09	\$1.06	\$1.09	\$1.09	\$0.79
Consumer retail	\$0.32	\$0.48	\$0.60	\$0.58	\$0.52
Overall average	\$1.37	\$1.55	\$1.46	\$1.70	\$1.64

Note: *Indices are based on a weighted average of bid prices of the top five ranked positions across US tier 1, II and III search vendors of keywords within an SEM campaign; the industry keyword list is composed from the 500 most queried keywords within an industry, and does not include brand keywords.

Source: Pathom Online, February 2005

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E-Mail Marketing Delivery, Open and Click-Through Rates, Q2 2002-Q4 2004

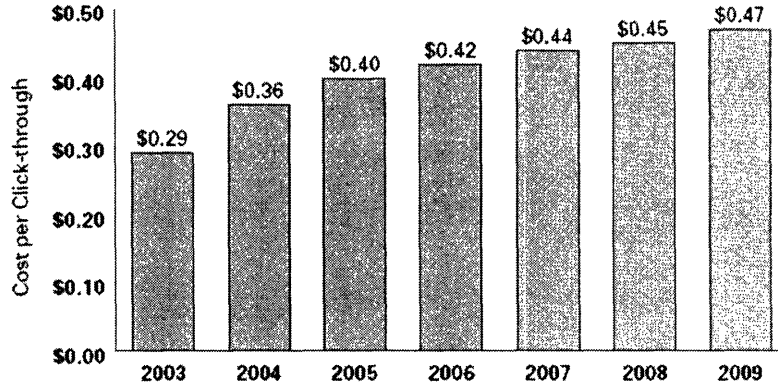
	Delivery	Open	Click-through
Q2 2002	36.4%	37.5%	7.5%
Q3 2002	36.7%	37.3%	8.1%
Q4 2002	36.5%	36.4%	8.0%
Q1 2003	37.5%	39.2%	8.5%
Q2 2003	38.5%	38.3%	8.3%
Q3 2003	38.2%	37.1%	9.2%
Q4 2003	37.3%	36.8%	8.4%
Q1 2004	38.8%	38.2%	8.4%
Q2 2004	39.5%	36.0%	7.7%
Q3 2004	39.3%	34.3%	8.2%
Q4 2004	40.6%	32.5%	8.0%

Source: DoubleClick, March 2005

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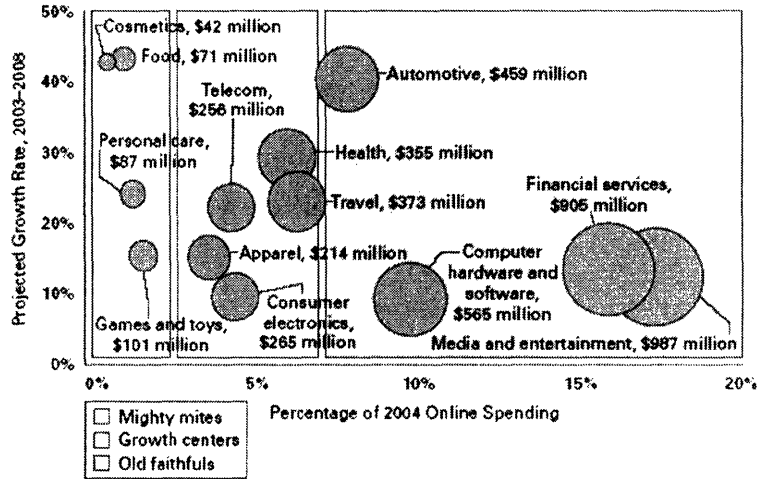
Fig. 1 Cost per Click-through, 2003 to 2009



Source: JupiterResearch Paid Search Model, 7/04 (US only)
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Growth Distributed Across Three Segments

Fig. 1 Opportunity Clusters



Source: Jupiter Research Category Advertising Model, 10/03 (US only)
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