Examples of Achievement

Healthcare, Life Sciences, Telecom

B2C ♦ B2B ♦ Consumer Behaviors ♦ Retail
Customer Experience ♦ Consumer Engagement
Communications ♦ Channel Unity ♦ Culture

Technology ♦ Products ♦ Marketing

Operations ♦ Strategy

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Contents

CONSUMER HEALTH ENGAGEMENT PLATFORM

I invented and built a health engagement concept model for a consumer health screening platform to support consumer real-time health data acquisition using biometric devices for hard vitals (weight, height, blood pressure) and the consumer entered soft vitals. Soft data included how a person felt, what they are eating by type, and what activities that are doing. Hard vitals do not deliver a good representation of a person's health alone. Soft vitals rely more on the behavioral side of people. Behaviors influence how we feel and impact our health, which is attributed for many chronic diseases.

I created the idea, functional design, and concept model. I worked with Brian Cook from The IDEA Corp on the UI/UX design and T1 Visions on the hardware models and software application. The prototype consisted of Apple Mac Minis and a Samsung 32" interactive touch screen with connected biometric devices.

The target customers were payers, large/mid employers, hospitals, clinics (Walgreens, Walmart, CVS), and health centers (YMCA, Equinox, LifeTime). For example, employers could monitor their population from a health perspective focusing on healthy behaviors and productivity. Used in conjunction with the Consumer Retail Engagement Platform, clinics could manage the front end office tasks through automation.

Figure 1 - Retail space rendering for the concept model – Spa setting with Zen-like atmosphere

The platform resides in a "spa like" space for a better customer experience. This design increases the engagement potential and consumers/people would find it easy and enjoyable to interact with the platform. Medical offices could change the way their waiting rooms are used and perceived. Waiting rooms are really a consumer front ends where the consumer starts their journey. Instead of waiting, consumers are engaged at the front end by entering their health data, signing in to the office, and perhaps paying their co-pay by credit card.

There are two ways to monitor and use the data. They are real-time and historic views as well as individual and population views.

There is a steady stream of real-time data. The real-time data is captured and loads the historical data bank. The real-time data shows the person's or collection of people's health at a given time. Real-time data can be used to make changes for a person or population in order to engage them at the moment. If the population's feelings show they are *tired*, management can identify a root cause and implement a program keeping the population productive and satisfied. If the population likes to walk as an exercise, management can make sure they can enable the population with areas to walk, even in a snow storm (inside paths). This mode is observing and **taking action now**.

Aggregating the data and using it as historical data provides insights on **trends** for the person or a collection of people. The root cause of an issue may have occurred a while ago and shifts in behaviors are noticed as shifting trends. An example of this is a population that started the year of feeling excited and optimistic, but in May, we see a shift to exhausted and overwhelmed. Management can connect potential causes to the observed shift in trends and make changes for employees. Perhaps the a group in the work force was being driven too hard in Spring with long hours and little recognition, management could see this to perform measures for change (increase hiring, expanding the schedule, lowering or shifting the load to give the group a break. The group needs to be re-energized once the issues have been identified.

Data is used and shared without disclosing PHI to provide management a glimpse of the population's health and trends over time. It is possible to categorize data by groups or teams to maintain privacy and allow management to provide assistance to a specific team when the health parameters shifted. Names are not used to maintain privacy, but individuals could also get a read out of their health profile with PHI protected. An individual can monitor their daily health as well as see a historical view while keeping their data private. A system login, with individual credentials, is used to maintain privacy.

The system has the capability to accept data from connected devices to augment data collection. Data could be collected via Bluetooth or a USB connector depending the device's capabilities for data transfer. Integration into Apple health and other comprehensive applications could be performed as well.

The ability of the platform to collect biological data and behavioral data provides a holistic view of the individual or population segment.

Figure 2 - Early iPad consumer entry display mockup

The concept launched in January 2012 at CES. Strong interest came from hospitals, companies, and clinics as well as the general public who had fun using it. The Chief Medical Officer, Reed Tucson, at UnitedHealth wanted to personally support the product for market deployment.

Figure 3 - Final 32" touchscreen consumer entry display

The user interface is so simple and elegant it required no training. The game-like UI is embraced by all types of people (age, ethnographic, technographic, education, gender) due to a simple, well-defined user experience design that was fun.

In the concept model, a person would touch the screen identifying them as male or female. They would then step on a connected scale to record their weight. The person would enter their height so the system could calculate their BMI. The person would them swipe 3 rotating columns to select what they are feeling, eating, and doing (activities they perform). After all data was entered, the person touches the submit button. The progression starts in the lower left of the screen and moves clock-wise around the screen.

For CES, data was aggregated and snapshots of the population's overall health were shown on a large 10 foot display as the platform rotated through a series of online screens.

Figure 4 - Attendees feelings

Data is displayed as word clouds that show in real-time the behavioral attributes.

Figure 5 - Food preferences

Figure 6 - Activity preferences

Figure 7 - How attendees viewed their body

With real-time and historical data for vitals and behaviors, we are able to display many forms of useful profiles and extract potential pain points in an individual or a population's health. This is extremely useful for large employers as they deploy their wellness strategies.

CONSUMER RETAIL ENGAGEMENT PLATFORM

Invented the concept and designed a consumer platform to support sign in, infotainment (magazines, games), search for information, information exchange (patient data), reminders, and ecommerce (pay bill, food). Another function was ecommerce. A person could order a bottle of water or snack from the screen and pay for it, and a monitor in the back office would remind the staff to provide the item(s) to the person in the waiting area.

The product acted as a front end hub to major consumer interactions with the business. The screen could be split into 4 display areas support different interactions with 4 people. The

services from the platform would increase productivity, automation, and make the experience useful while waiting.

Figure 8 - Main Menu

The target was Payer's customers such as physician practices, health clubs, retail health clinics (Walmart, CVS, Walgreens), and retail health stores.

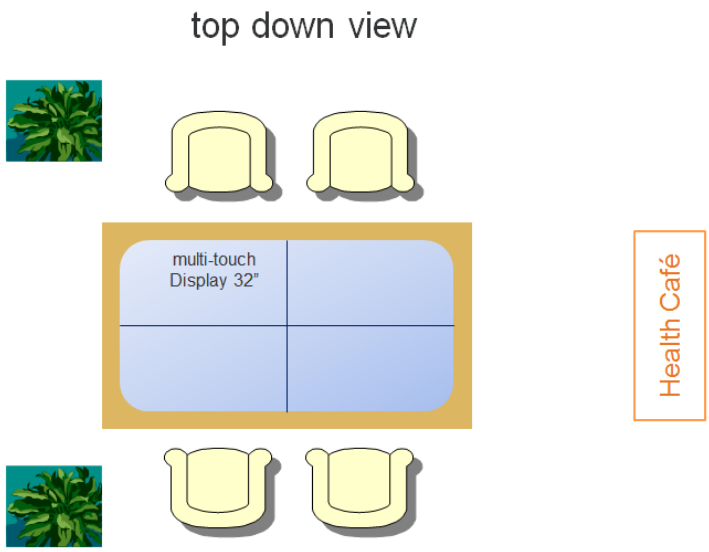


Figure 9 - Physical Layout

This product was shown at the Consumer Electronics Show 2012 in the UnitedHealth area. I worked with The IDEA Corp for UI/UX design and T1 Visions to create the prototypes using Apple Mac Minis and 32" interactive touch screens.

Figure 10 - Unit on show CES floor with ecommerce monitor displaying food and drink orders

RETAIL HEALTH STORE

Created a retail store concept model to add value to Payer consumer relationships, increase value for retention, and add new revenue and offerings for acquisition. The store could be powered by the Consumer Retail Platform. I created this for Kaiser Permanente's Garfield Innovation Center.

The retail store offers a local presence tied to the community and supports:

- ExerGaming for kids and mind games for seniors
- Demonstration and cook/prep area
- Sponsor mini-health sessions and videos from SMEs about pregnancy, sleep, stress, eating, hidden dangers in your home
- Micro clinic to expose risks - immunizations (flu), blood tests (glucose)
- Health programs to minimize and manage risks, detoxification and stress support
- Community programs: runs, walks, baby, child, elderly
- Biometric health measurements

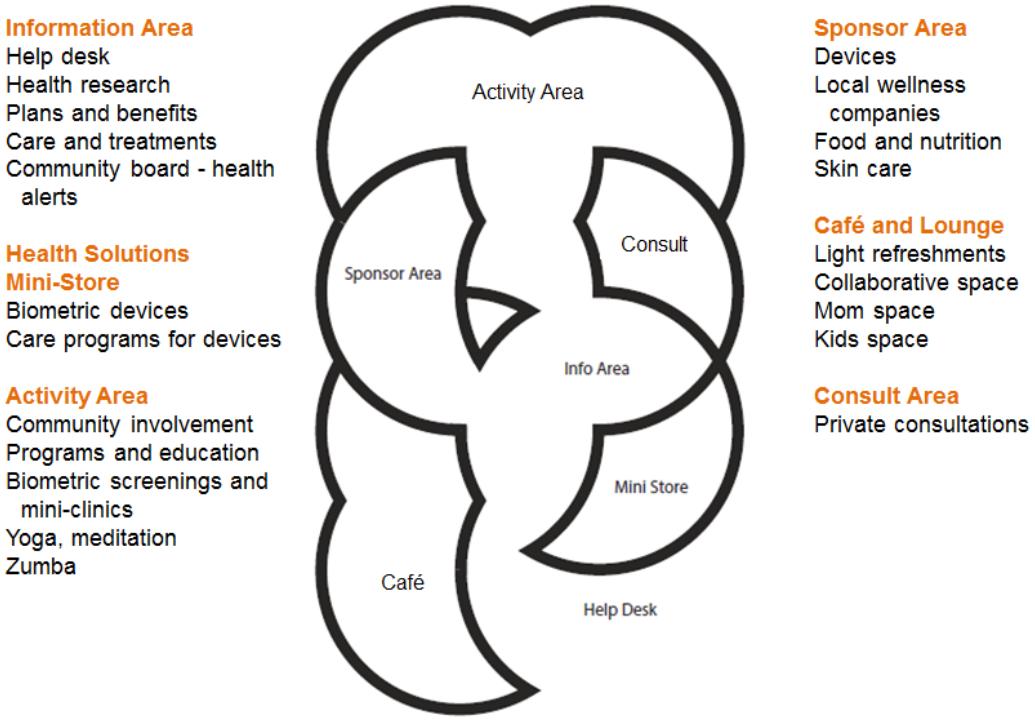


Figure 11 - Retail Store Mockup

Value: A chance to **redefine health** and **raise it in priority** to consumers

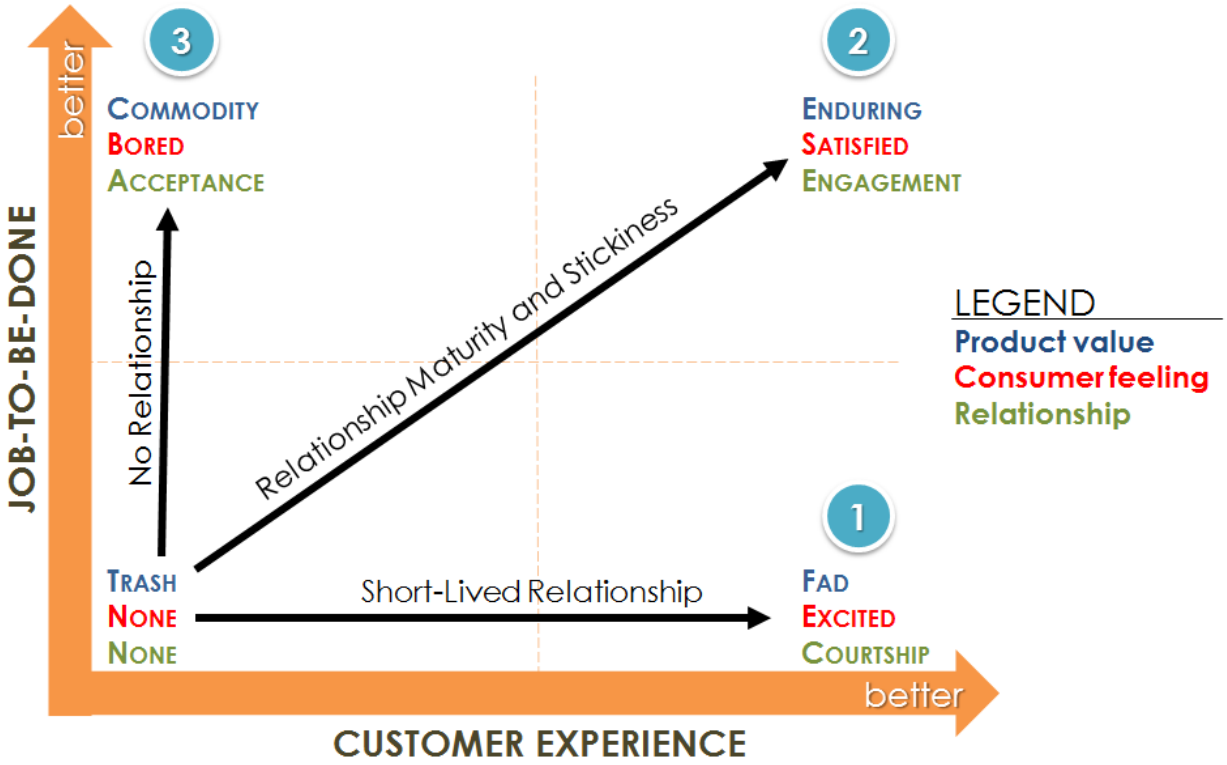
- *Engage* consumers and build relationships
- *Increase* retention and acquisition
- *Give access* to all things that affect health – environment, behaviors/habits
- *Offer* sustainable living programs with biometric devices and monitoring assistance

EXPERIENCE - CONSUMER THEORY

Customer experience plays a large role in customer satisfaction and retention. Success of a business or product is measured by its customer experience, loyalty, engagement, and the product doing its intended job.

The main objective is to build consumer trust by increasing relationship maturity that ultimately provides consumer stickiness. The consumer sees value in the relationship with the company, is satisfied with its offer, and it engaged with the company or product. This approach is more robust then NPS because it focused on more than loyalty; it focuses on engagement.

The next figure shows a model for connecting experience, consumer needs, and relationships. The Y axis is the job-to-be-done for the consumer, and the X axis is the Customer Experience.



The path to a better customer experience that builds trust through relationships.

- Fix fractured connections – remove frustration
- Fix usability - easy and simple
- Connect the dots - Channel Unity
- Provide what customers are looking for
- Fit in the lifestyle decision stream
- Make it something to look forward to - do it right the first time

TREATMENT COST ESTIMATOR DESIGN FOR PC / MOBILE

Concept model for a mobile treatment cost estimator for consumers. Usability is kept simple and the design is clean.

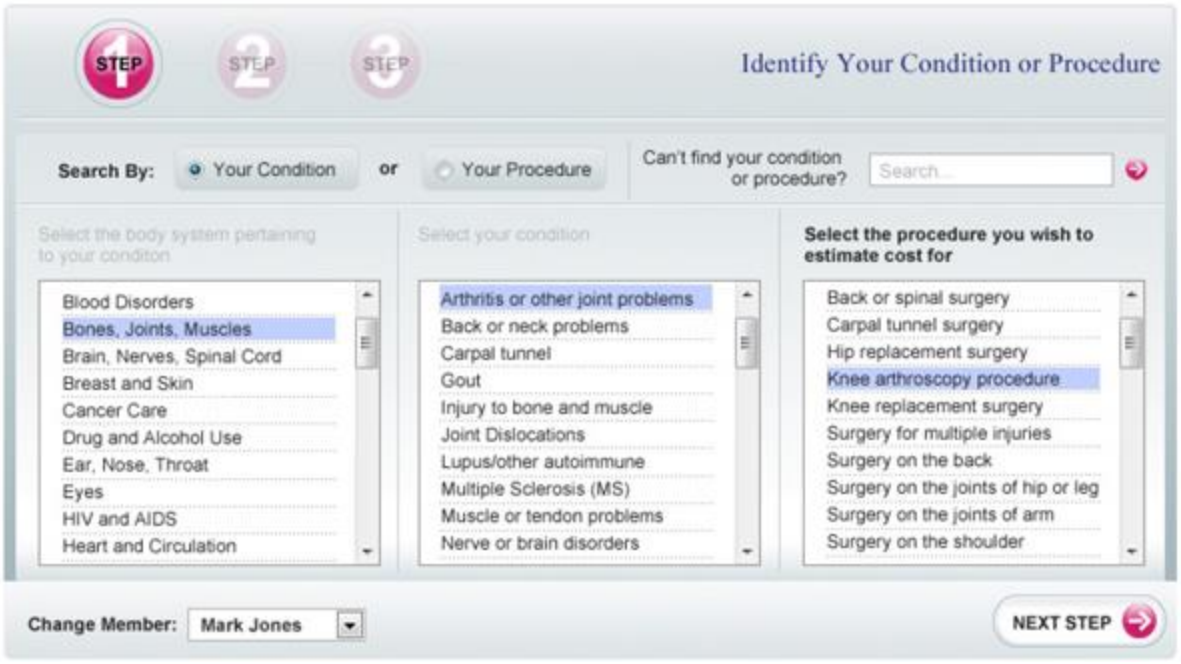


Figure 12 - Application Concept Model

MERCK DRUG ADHERENCE FOR MOBILE CONSUMERS

The app should be engaging and increase drug adherence with consumers. Merck wanted to take their existing PC based Merck Engage app and convert it to a mobile platform. The most used feature was monitoring food intake. I designed a simplified and easy to use interface that associated food with calories and showed the calories burned and the balance. All data entry is on one screen to maximize ease of use. Functionality includes:

- Simplified display
- Easy entry – one display screen
- See outcome during selection
- Dashboard view - Carry over data, calories burned, from activity
- Modify by date
- Medication button
- Potential to send mobile reminders and alerts

Figure 13 - Consumer Mobile App Mockup

Simplified entry

- Calories count, not detail
- One day – one screen
- Errors average out
- Medication taken button

See impact on front screen for each day

I created a maturity model to show Merck an entry point for mobile app as well as an evolution to a more sophisticated model.

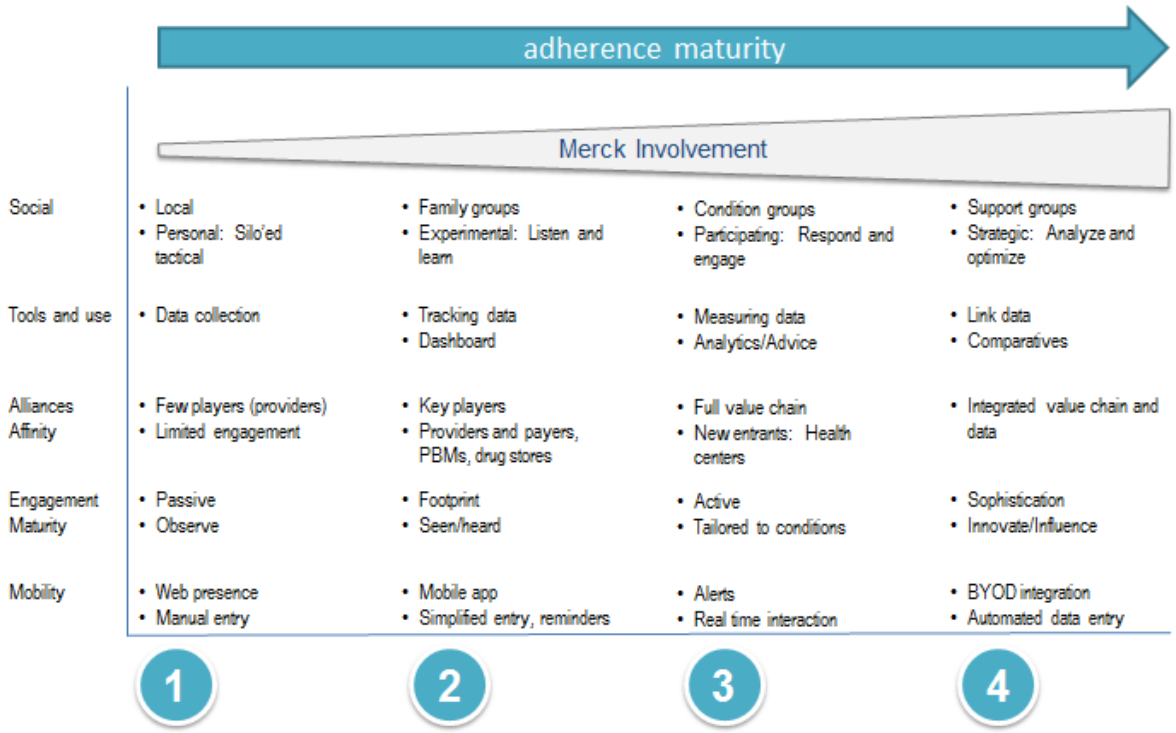


Figure 14 - Maturity Model for Drug Adherence

INTEGRATED INSURANCE CARD AND SMART CARD

I solved a complex business problem for UHG. The CEO of UHG's bank wanted to simplify how it sent cards to the consumer as well as lower costs. I created a solution to integrate 3 cards into one and provide additional functionality to assist in member retention and better care using available, low cost technologies.

Convergence in the industry and smart card technology

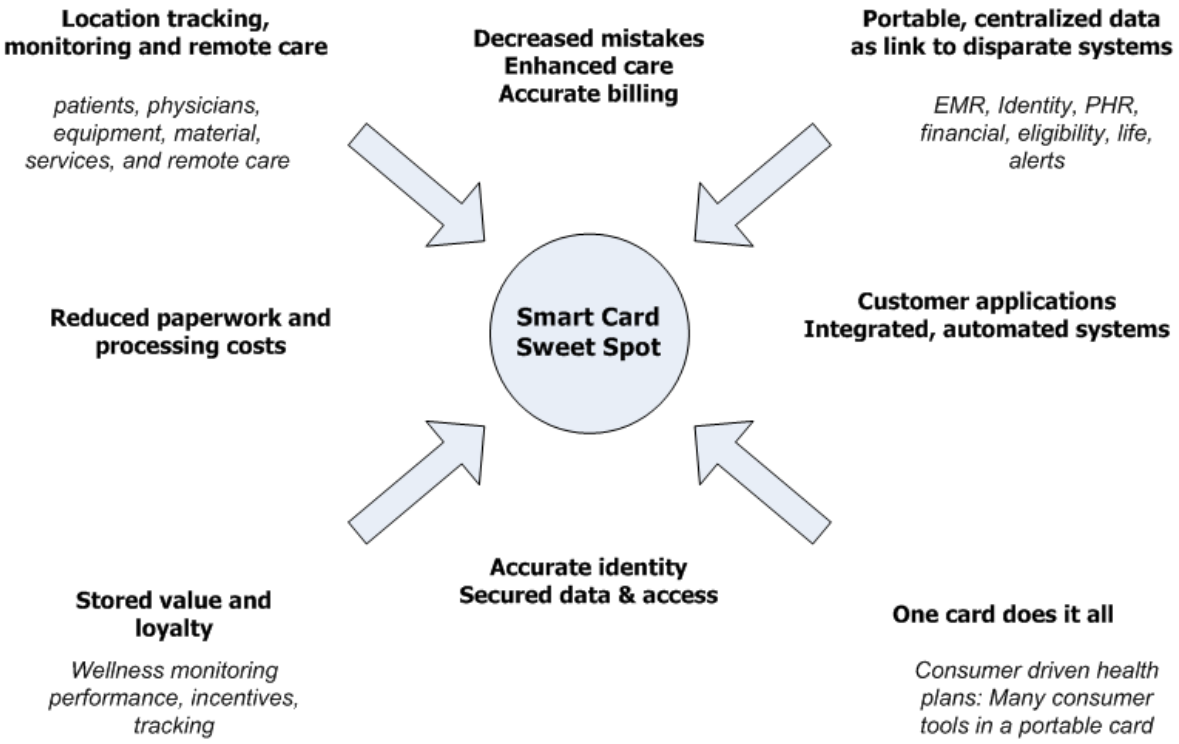


Figure 15 - Market Sweet Spot or SmartCard

Created concept and designed an all-in-one health/medical card that offers additional functionality such as storing important PHR, identification, support location based and mobile applications, and financial payments (Visa). Integration includes medical, dental and drug cards into one.

PHI is protected but can be exposed for EMTs in case of a vehicle accident or disaster to gain identity, emergency contacts, plan benefits, and allergies. An added benefit using proximity capability, families can monitor location of children and it can also be used to locate missing

children when worn as a pendant or inserted into a backpack or piece of clothing. This consumer use aids in retention by adding stickiness. It also extends the Payers product portfolio.

New Member all-in-one Microcard with RFID

Specifications:

Form factor:	1 mm by 3 mm
Battery life:	up to 4 years
Range:	Up to 10 miles
Storage:	1 Gigabit
Security:	Strong encryption, up to NSA standards
Spectrum:	5.8 GHz
Transfer speed:	1.5 Kb/sec

Data Model

Data types	Application types	Data Class	Security Class
Operating system Security Radio control	Card OS	S	system
Audit trail Scheduler	Logging, Alerts, and Control	S	system
Name Photo Fingerprint PIN	Identity and Security	I	A
Address Contact data Emergency contacts	Demographics	D	C
History: surgeries, illness log Immunizations, allergies, diseases Medications, devices Stats: blood pres, chol Static: Blood type Family history, health maint data	PHR data	P	C
	Emergency access		Z
Plan ID Employer ID Eligibility Contact data	Insurance plan data	U	C
Account 1 ID, PIN, type, balance Account 2 ID, PIN, type, balance Account 3 ID, PIN, type, balance Account 4 ID, PIN, type, balance Account 5 ID, PIN, type, balance	Financial data	F	B
Location data Wellness data and rewards	Life and tracking data	L	D
History Physician notes Treatments Drug data Tests	EMR data	E	A
X rays EKG baselines	Medical MM data	M	A
Future use	Expansion	X	?

Advantages

- One card does it all for multiple years reducing card creation and distribution costs for Payer by factor of 8 to 16
- Faster care through immediate access to information on portable PHR
- Less medical errors through access to information on portable PHR among multiple providers
- Reduction in unnecessary redundant tests through data sharing with multiple providers
- Reduction in paper for consumer and physician since information transfers electronically using Microcard
- Correct billing with equipment tracking and plan information on card
- Reduction in fraudulent use and medical errors using identity check with biometric data
- At home care for elderly with tracking and sensor monitoring applications
- Find your patient with location tracking in hospitals
- Important reminders, alerts, and advice for medication, allergies, and telemetry data
- Kidnapping deterrent with child tracking
- Find people fast at disaster events

PERSONALIZED PRINT COMMUNICATIONS USING VDP

Created an approach to personalize member communications and simplify messaging. Introduced HP's VDP technology to automate the print process and provide a superior user experience by calling on member information and culturally linked graphics. This also improved the customer experience for AARP.

Variable Data Publishing technology is a secure multi-channel, data-driven 1:1 system with tailored communications using multiple channels.

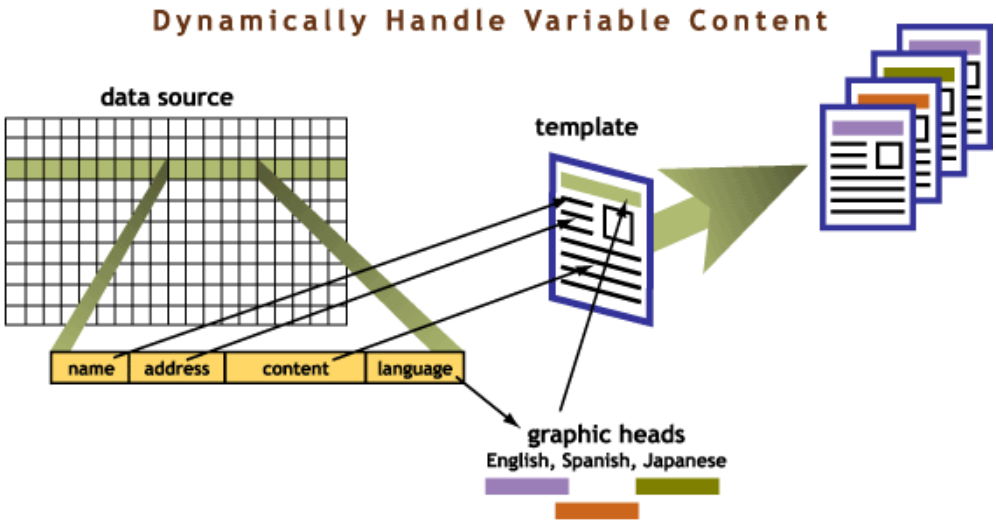


Figure 16 - VDP Process

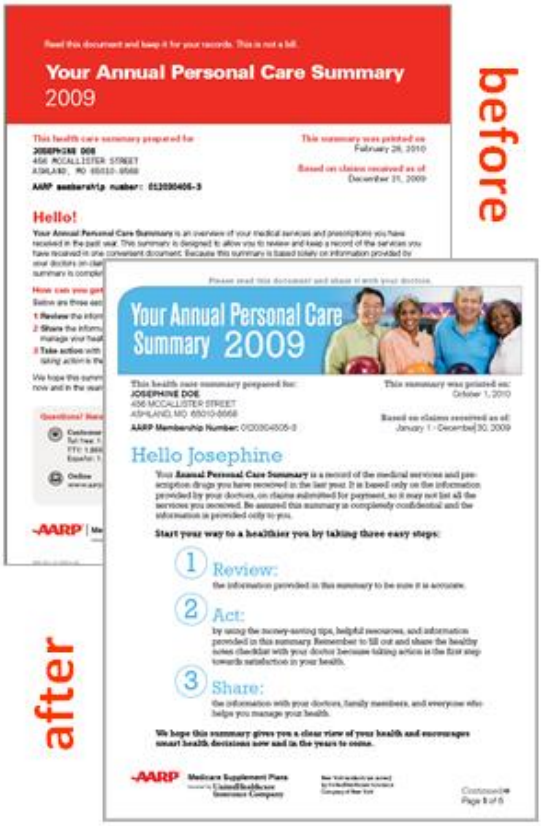


Figure 17 - AARP Before and After

OPENGATE PROJECT

Senior executives asked me to come up with ideas and concepts to change the way the company interacts with its members by looking for better functionality, interactions, and processes.

Concept models included:

- Concierge consumer model for personalized, worry-free care
- Microcard/health pendant for enhanced health services
- Consumer kiosk at providers supporting self-service

CONCIERGE MODEL

The concept is to have UnitedHealth be accountable for all logistics for care so the consumer can focus on their health and family. Logistics include locating care facility, locating doctors, scheduling procedures, transportation, lodging, and devices. This could also include using medical tourism if the costs and quality measures make sense.

PROVIDER KIOSK APPLICATION

This is an application model for a consumer kiosk used at Providers to increase customer experience and care effectiveness.

	User/Provider Application & I/F	Application System & I/F
KIOSK Terminal	Patient check in	Healthcare provider + Insurer's system
	Insurance Benefits	Insurer's system
	Scheduling	Healthcare provider's system
	Forms: Consent	Healthcare provider's system
	Deliverables: Specimens, paperwork	Healthcare provider's system
	Payment: co-pay	Healthcare provider's system - Insurer's system
	Education	Provider system
	Wayfinding	Provider system
	Care instructions: treatment, diet, exercise, cautions	Healthcare provider's system
	Prescriptions	Healthcare provider's system
	EMR's	Healthcare provider's system - EHR
	Patient Output: testing/Lab info, Appointments	Healthcare provider's system
	Information: office hours, notices	Healthcare provider's system
	Gov't data exchange/surveillance	NHII, CDC

Figure 18 - Kiosk Applications

I created a process flow for the patient check in process below.

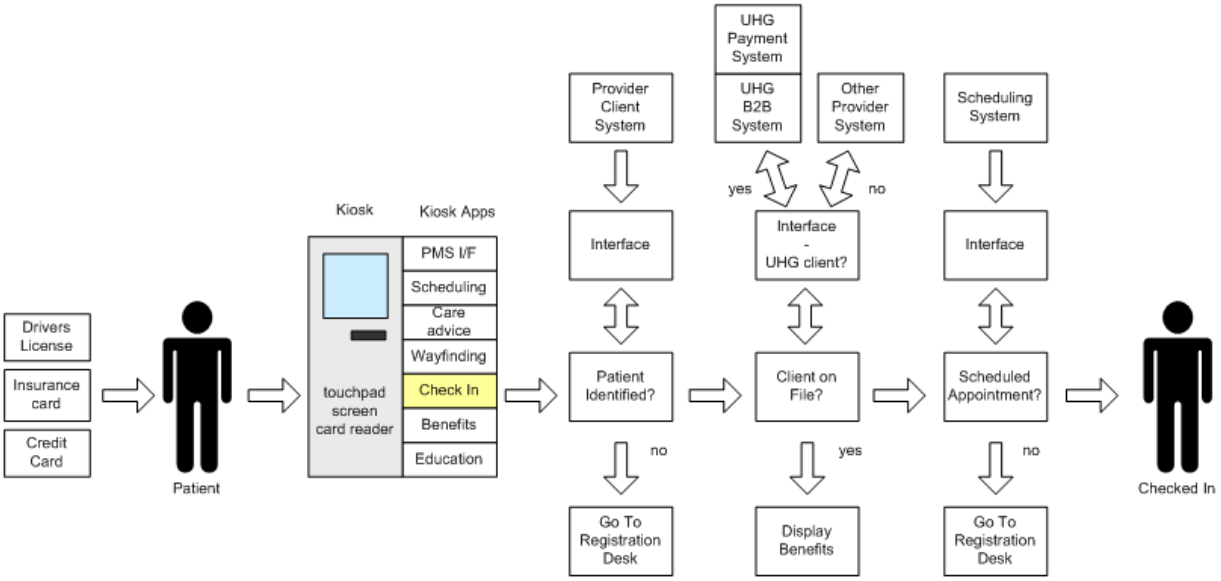


Figure 19 - Patient Check in Process

IT Strategy Related to Consumerism

HEALTHCARE IT STRATEGY

Gartner: 85% of 2335 CIOs shows retaining customers is most important priority following business growth. Retention requires the Payer to embrace consumer centricity. Payers must have collaboration and data sharing across the business.

Consumer centricity is achieved by:

- Consumer understanding; extracting consumer insights from unstructured data using **analytics**
- Relevant, useful **communications**
- Consistent, coordinated experiences across all **channels** (Mobile, Web, Contact Center, Mail)
- **Technology** enablers to empower consumers to make good decisions
- Consumer **engagement** through relevant, personalized health management programs
- Aligning with **social** channels to protect brand, be responsive, and influence consumer decision-making
- Revitalizing legacy systems to support real time, accurate interactions with consumers. Also to hold relevant consumer data using a data plane concept.

I created an integration method so that technology and culture supports business driven thinking by looking at technology and social components as enablers. My version of SMACD includes devices, IoTs, and wearables since they are permeating the health industry in consumer and clinical areas.

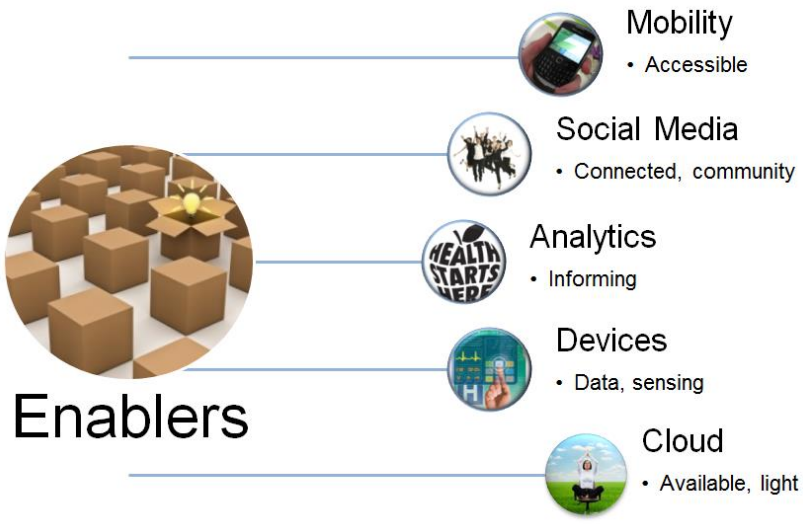


Figure 20 - Enabler Diagram

PROFILING - DATA PLANES FOR HEALTH CAMPAIGNS

I created a data planar approach and strategy for data and analytics. Updated data models and databases are needed to support consumer profiling and persona development in order to deliver and interact with consumers delivering the right content to the right people at the right time and in the right manner.

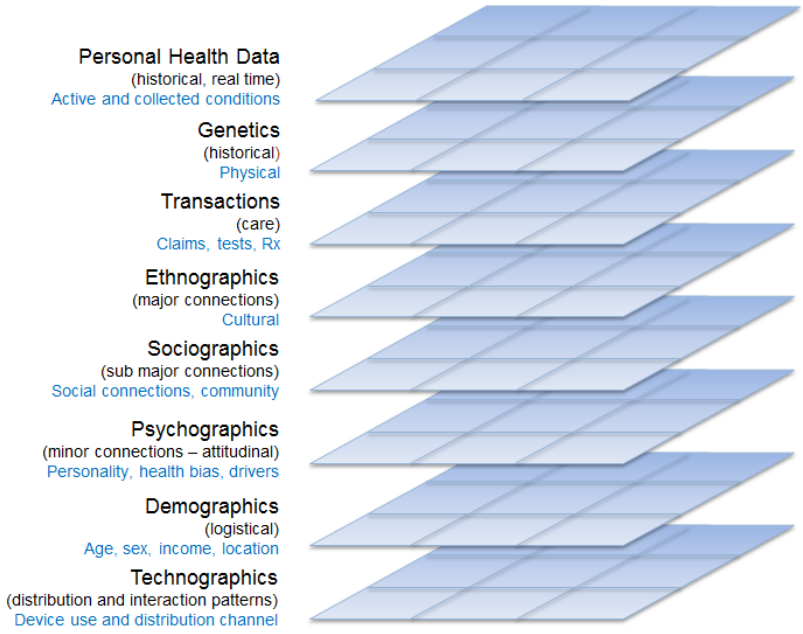


Figure 21 - Data Planes

This approach enables hyper-targeted health engagement programs and consumer communications using digital automation tools. This approach and implementation process is described in my book, Commercializing Consumer Engagement.

Use of the data plane model is shown in the following diagram. The concept works as a filter

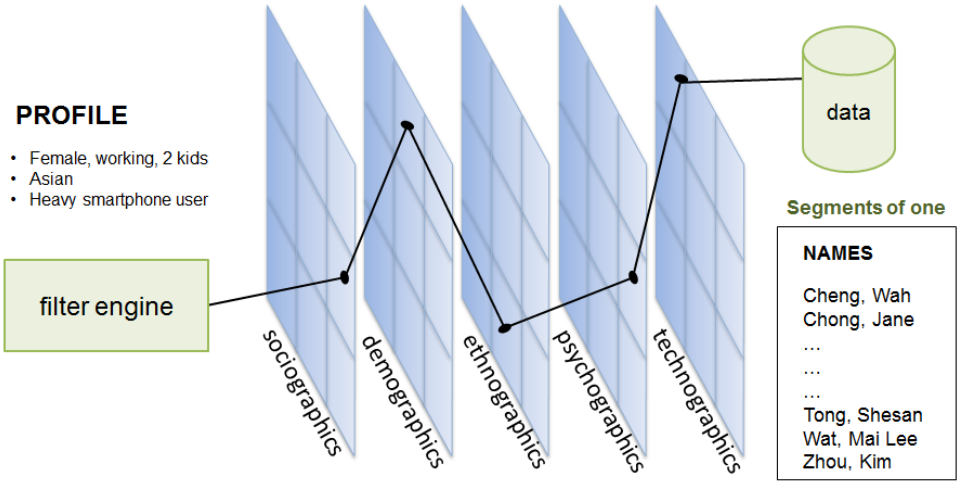


Figure 22 – Example of Data Plane Use

With an email list generated from using the data plane concept, we can deploy a personalized health campaign tied to a specific health program.

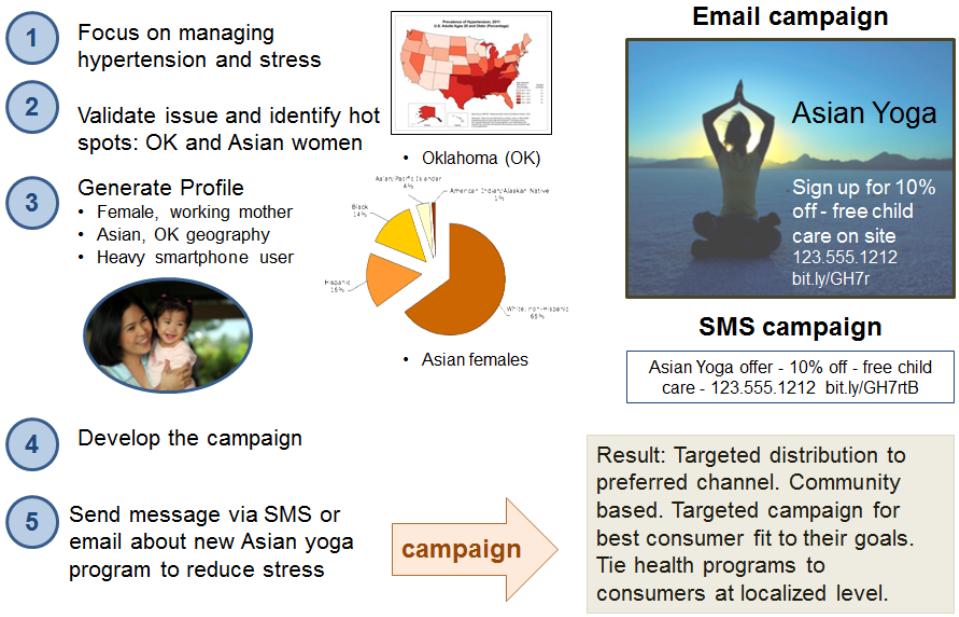


Figure 23 - Example of a Health Campaign Using Data Planes

CONSUMER CENTRICITY STRATEGY AND PORTFOLIO

Part of the strategic framework involves supporting a unified, consumer centric portfolio of business and technology support mechanisms. They include (1) insights and analytics, (2) customer experience generation, (3) integrated communications, and (4) consumer health engagement. This approach allows for technology and cultural disruption to occur thereby opening market opportunities.

Multi-channels include online, retail, contact center (phone/agent), IVR, and mail with supporting technologies such as mobile and web.

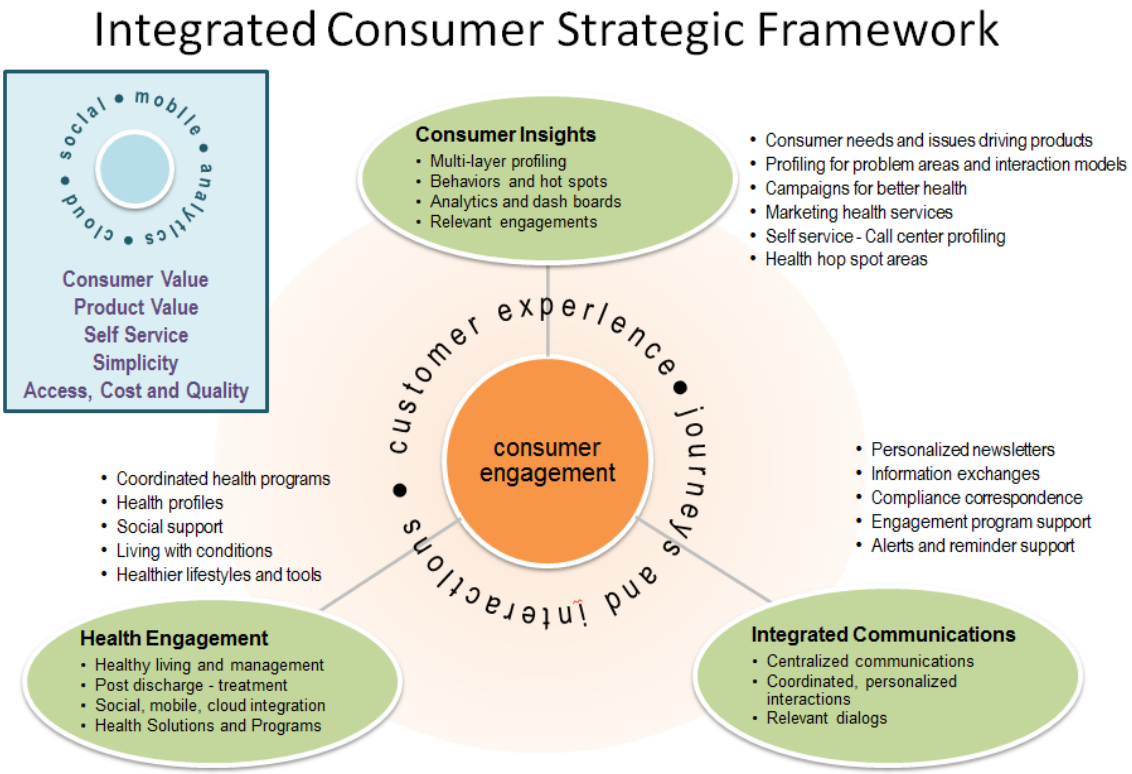


Figure 24 - B2C Framework

e-Commerce and Portals

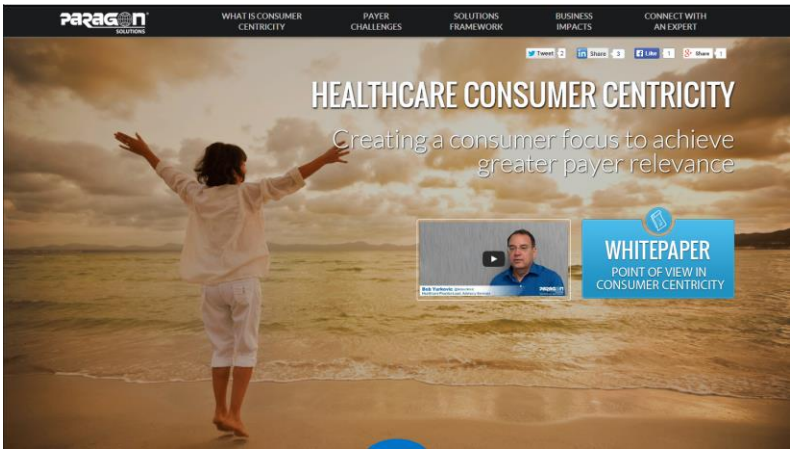
Experience related to setting up web, eCommerce, and Mobile Applications. Examples of responsive design in mobility.

RESPONSIVE DESIGN

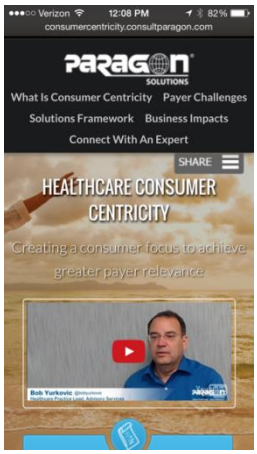
The keys to good responsive design for any site are relevant content and a design that follows good usability (UX) guidelines.

MICROSITE TO DRIVE LEADS

I created a specific consumer centric site to support sales of health care solutions at http://consumercentricity.consultparagon.com/ . The site adapts to PC display, tablet and smart phone form factors and includes access to self-produced papers and YouTube videos.



PC display view



iPhone view

CONSUMER PORTAL

I designed a new consumer front end for their consumer portal – myuhc.com – using a novel "nav pad" concept. I researched the 4 main reasons consumers came to the site and found over 80% came for 4 reasons. The nav pad had a place for each of those key functions. Also introduced a friendlier site instead of the small text heavy site using a nurse to welcome members and provided basic identification and plan information on the front page. The site serves 30+ million users.

Figure 25 - MYUHC Site Transformation

SITE CREATION FOR MEDICARE AND RETIREMENT

Figure 26 - Intranet Services Site

MEDICARE ADVOCACY SITE

Figure 27 - Medicare Advocacy Site

Figure 28 - Simplified Use

ONE PORTAL (UBERPORTAL)

To improve customer experience, I was given the task to create one member portal for all of UnitedHealth's customers to provide a single point of entry in order to navigate through the health & wellness space. Value targets included enhancing the consumer experience, strengthening relationships, and extending the brand partnering with a trusted name. The site was designed to be personalized and customizable to expose the member's most wanted functionality up front. Leverage existing centralized IT data sources.

Figure 29 - Designed for Usability

New claims area designed to provide a better experience through simplified claims information. Simulate a bank account statement to increase usability.

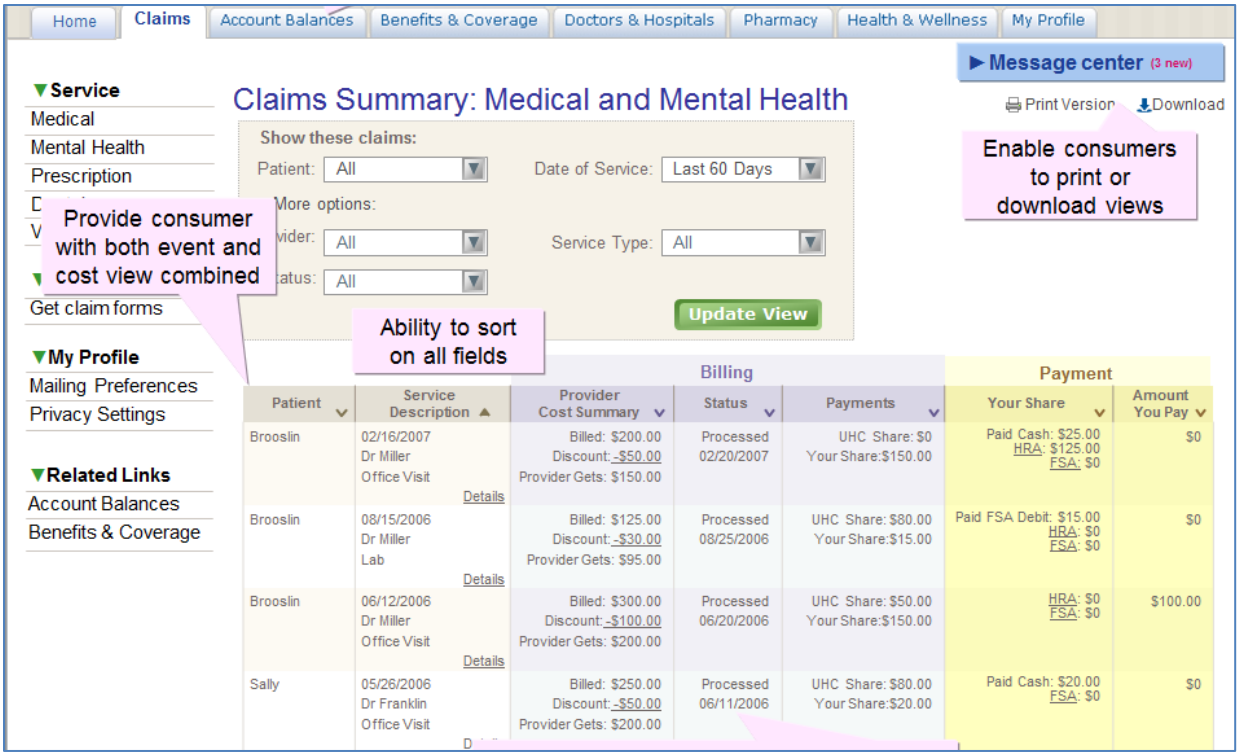


Figure 30 - Highly Usable Claims Page

Expected benefits included:

Benefit Type	Description	Yearly Amount Saved
Churn Reduction	By enhancing our consumer experience, we expect to reduce the number of consumers leaving each year by 10%.	$30M
Web Consolidation	Expect to reduce overhead of multiple development teams. Easier ability to integrate new sites on portal servers.	$34M
Call Obviation	By providing the care the consumers want on the portal, we expect to reduce calls by 3%	$2M

MY CANCER JOURNEY SOCIAL CONSUMER SITE

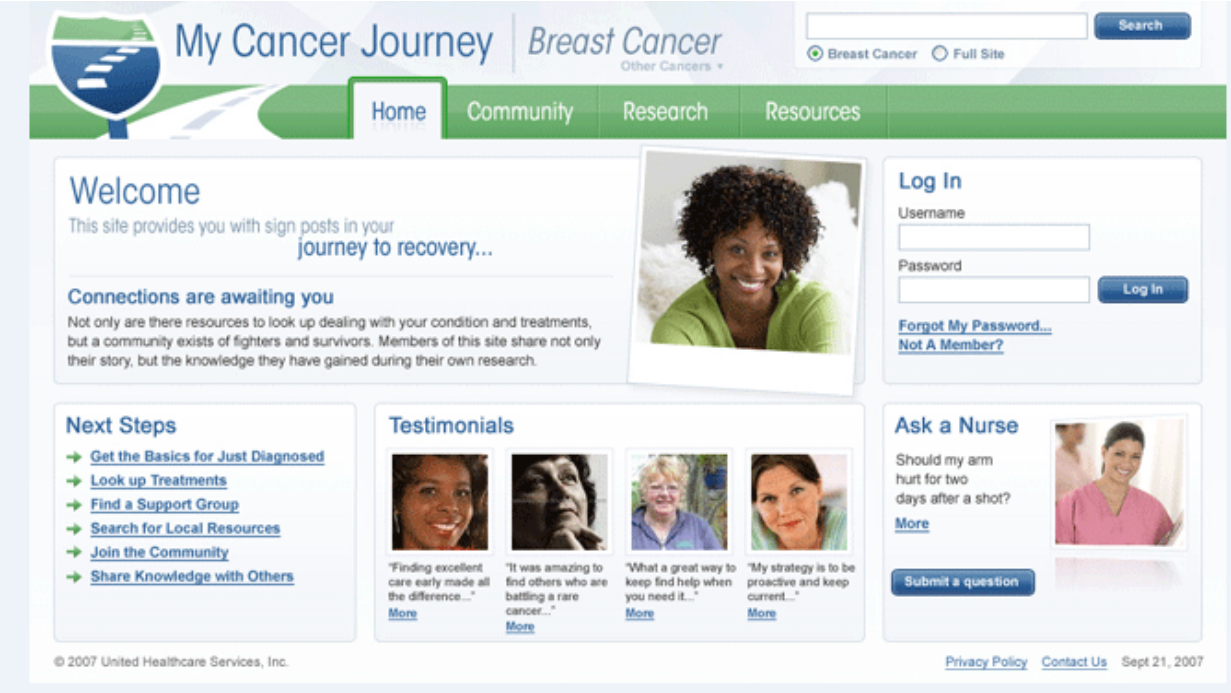


Figure 31 - Home Page

Mobility and Applications

QUICK QUOTE FOR IPAD

The iPad Quick Quote application for UHC sales allowed the sales reps to meet with customers and work up quotes in real time providing a quicker turn around for pricing as well as responsive, collaboration with the customers.

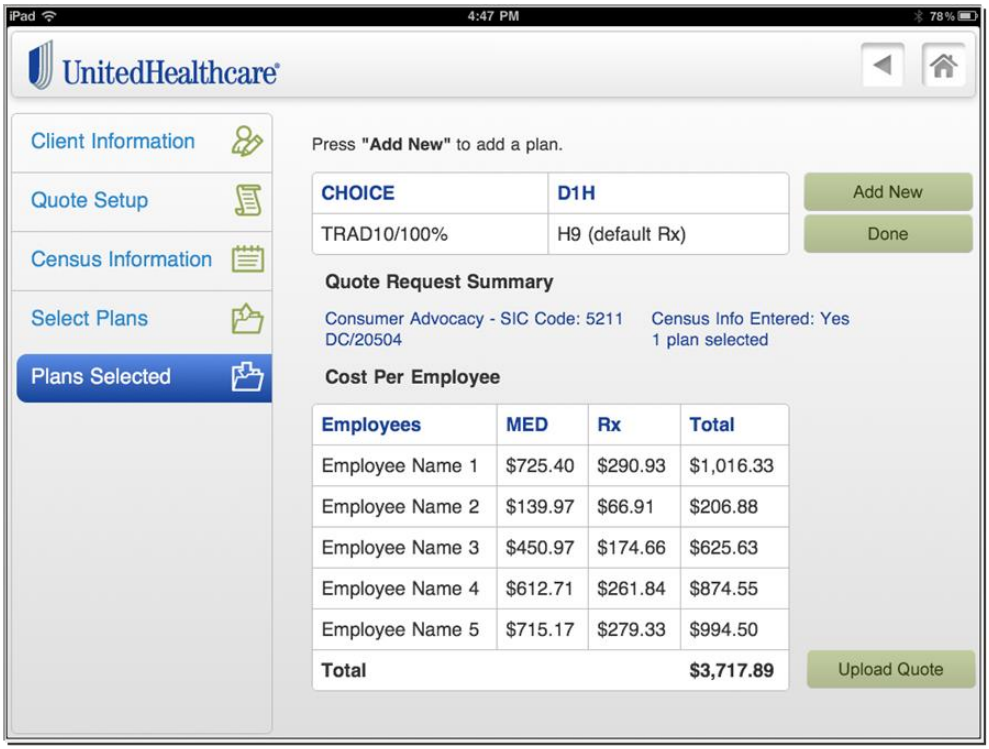


Figure 32 - Quick Quote Tablet App

MOBILE MEDIA PLATFORM AND AUDIORUNNER APPLICATION

The next evolution for the Internet is full audio browsing, command and control, and content subscription services in audio. Start with audio downloaded playback and move to streaming packet data as data prices drop and bandwidth increases.

CAPABILITIES

- Audio playback, publishing, command and control
- Add storage to wireless phone and create a wireless internet appliance with data store, processing stays in the network
- The revolution enables existing wireless 2G phones

- The evolution expands with more bandwidth, content, and applications

STRATEGY

Align with new convergence of communications, information channels, and technology to form a sweet spot in wearable, wireless devices that delivers relevant content via audio to the user based on Space-Time patent.

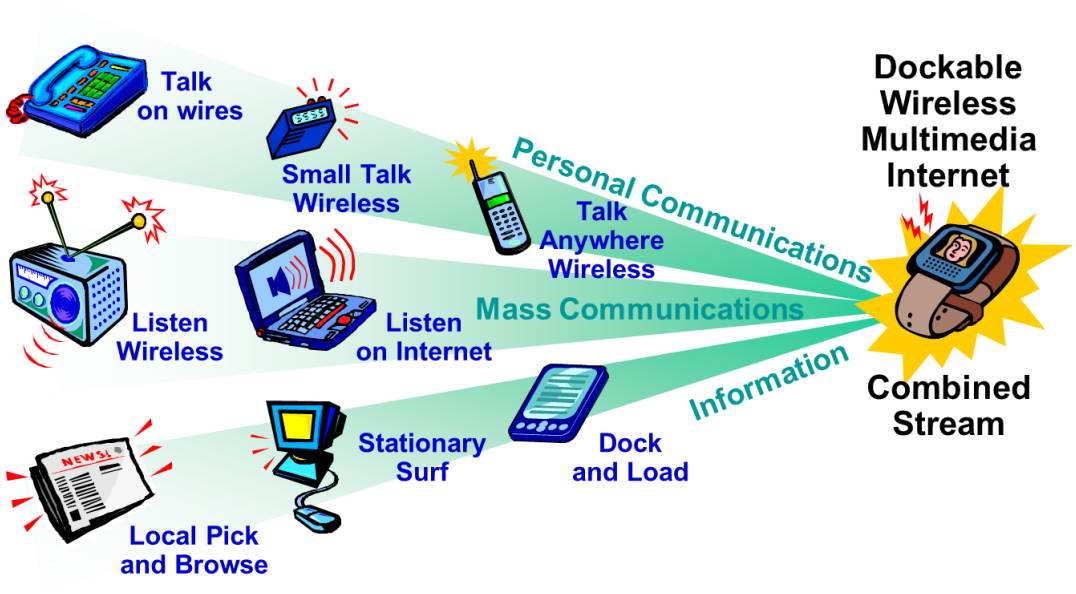


Figure 33 - Mobile Convergence

Develop an enabling platform that offers content services in audio format extending Lucent's market portfolio from infrastructure to services and content as infrastructure enters into a commodity product, stimulate infrastructure demand, and offer new 3G data services. Develop platform engines, technology enablers and mobile applications. Stimulate growth by engaging application developers with tools to develop and bring their products to market. Partner with content providers offering a new channel to reach consumers. Partner with device manufactures to offer smart devices capable of content acquisition and delivery.

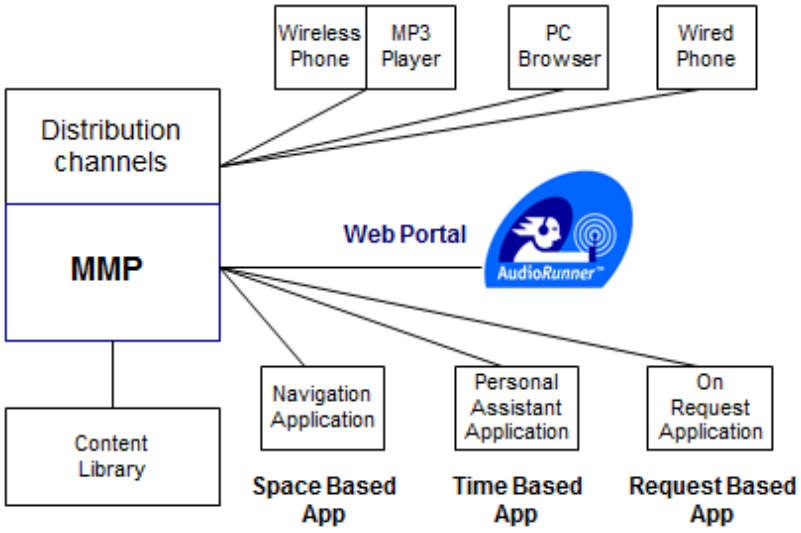


Figure 34 - Audio Services Architecture

APPLICATIONS

Personalized Mobile Radio

- Entertainment, commuting, personal assistant, relevant news

Corporate communications

- Mobile employees, sales support, product information and processes, assistant

Education

- Distance learning

Sight impaired

- Internet content and applications accessible through an audio interface enables people to be mobile in the information world while limited in the physical world

INNOVATION

Audio Nuggets

Use audio nugget concept to compartmentalize content into discrete content pieces for content management purposes and reuse. An audio header identifies the content about to be played back. The header and content nugget forms an information packet. The packets are concatenated to form an audio stream. Audio content is categorized to provide a way to deliver relevant content to a person using the space-time navigation patent.

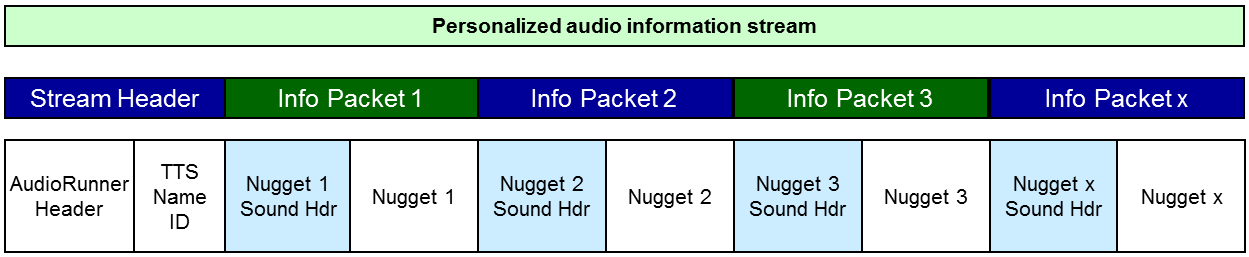


Figure 35 - Audio Packet Architecture

Space Time Concept

The service demonstrates the space time web portal concept which provides navigation assistance and automated information delivery for users as they move through time and space. An integrated management application set (patent pending), which displays a calendar view or time view portal for a series of time based applications such as event scheduling, memos with reminders, and task management. A navigation application may integrate mapping information and location based information using geographic maps as the navigation interface.

Getting content to the user at the right time and the right space is key to automated information navigation and delivery. People move in time and space and their needs for information are directly tied to both. By categorizing content and information in applications in terms of space (location) and time (calendar/clock), we can place significant information at the hands of users without them navigating to find it. This supports and enhances the concept of "hands free and eyes free" to information navigation for mobile use. It's about safety and speed. Hands free and eyes free means safer driving and fast.

Beyond 2000

Another future offering is the "What's near me?" response technology which allows a user to ask the device for geo-location specific information. Examples include location of ATM, coffee shop, public transportation center, taxi service, hotels, or other requested information. An additional response device at the corresponding service location would help users hone in on a requested service and provide additional assistance to the user. This scenario has a direct benefit to sight impaired users in terms of navigation and information delivery. This could be used for wayfaring at locations.

OPPORTUNITY

Extend global reach with the ability to sell to European and Asian wireless service providers by dropping our MI solution over our competitor's infrastructure. Bring eager US based content providers to new markets and channels while getting a percentage of content revenue through use of our platform. Capture evolving markets through mobile internet offer integration. timulate demand for infrastructure through gradual use of wireless transport for content access

TAM: Total U.S. wireless subscribers in 2000 is 109.5M with an annual growth of about 127% in 2000. The addressable market is 30% of TAM, which is 21.9M.

Initial target is 25% of the potential users, which is 5.5M cell users (conservative)

- Validated advertising revenue potential
- Validated use for content providers

MP3 cell phones are replacing MP3 standalone units with a market share pickup of ~3M units in 2000 with 51% growth rate.

Target 2G and 3G mobile phones to expand use of 3G phone and expose 2G phone users to new services that deliver content in a mobile environment.

GO TO MARKET

Choose a market segment and an application to demonstrate a 2G service

- Use existing 2G with a defined evolution plan to 3G
- Build a concept model that delivers personalized, customized content via an audio stream

Content

Partner with content aggregators and owners for HTML and audio content.

- Audible – audio books
- AvantGo – doc access
- DeLorme - navigation
- Sony – movies and music
- BBC - news
- AP - news
- Intellicast - news
- Newsedge - news
- Traffic Station – traffic
- Pimsleur – education, languages
- Internet - information search

Develop a self-publishing capability for truly personalized content. Content includes calendar events, reminders, tasks, and email.

Build the platform prototype

- Key features include text to speech, ASR, and media streaming.
- Use existing speech engines for speed to market and offer the ability to be technology agnostic
- Build interfaces to wireless Infrastructure
- Build APIs and technology enablers
- Create use scenarios
- Build a web portal to operate the system
- Develop content interfaces
- Build PoC and test for market viability
- Productize and document

Applications

Create a stable of ISVs by offering partnering capabilities. Offer a developer's program using an online mobile media platform that's provides access to a live engine and tools to build and test applications.

MMP concept demo

- Use the MMP platform
- Create an application - AudioRunner
- Simulate a service

AUDIORUNNER CONCEPT APPLICATION

AudioRunner is a concept supporting audio-based Internet information services and applications through the Mobile Media Platform and enhances the mobile experience with relevant content delivery through wireless connectivity. Function command and control is accomplished through a voice command set such as playing various audio segments (e.g.; get the weather).

The use of audio playback and control is particularly suited for mobile users whose sight cannot be focused on a display (moving, driving) and for users that are visually impaired.

Prerequisites for starting

Build a MP3/cell phone prototype. The integrated MP3 player provide storage for situations in which docking the device and loading content is used instead of streaming content. The device can also be used a buffer storage for the live stream.

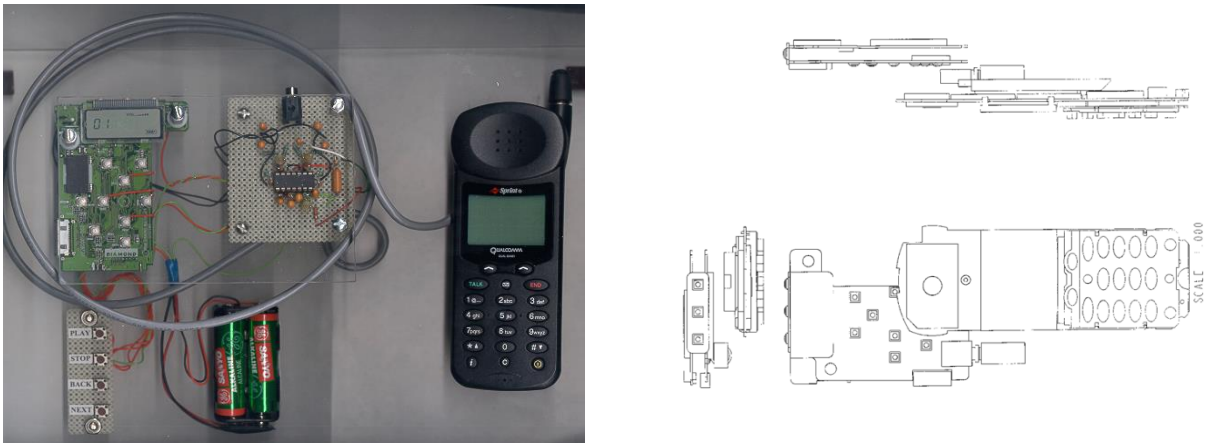


Figure 36 - MP3 Cell Phone Prototype

Create the requirements and technical specifications

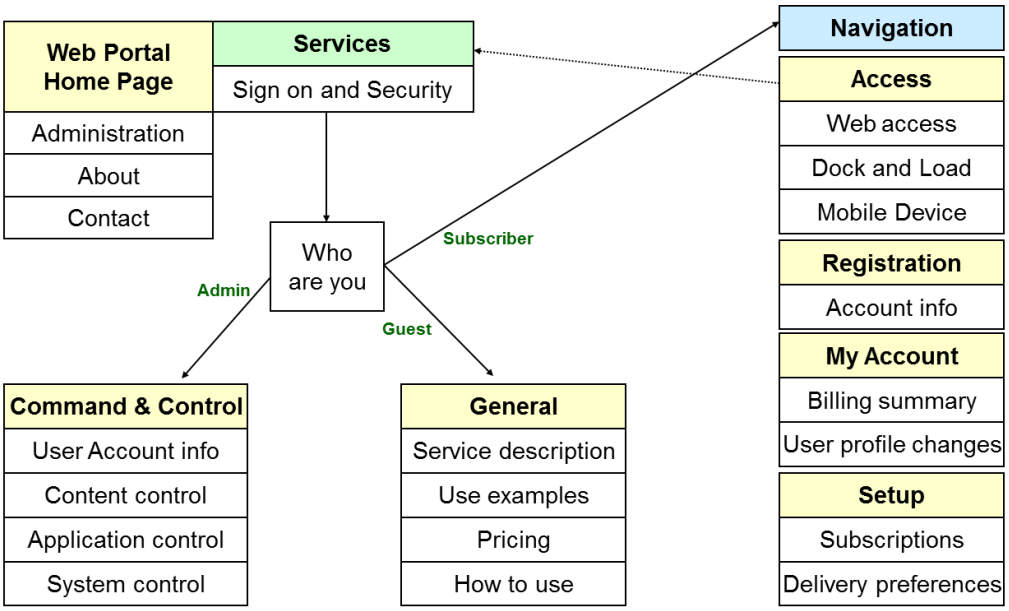


Figure 37 - AudioRunner Web Architecture

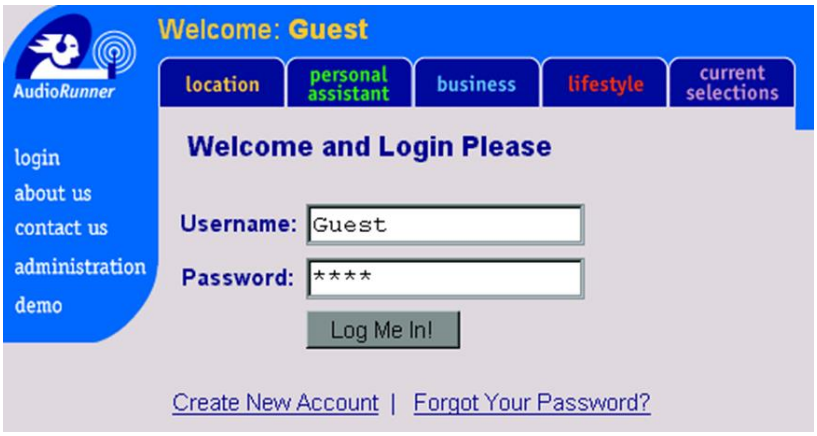


Figure 38 - AR Web Login

Figure 39 - AR Current Selections

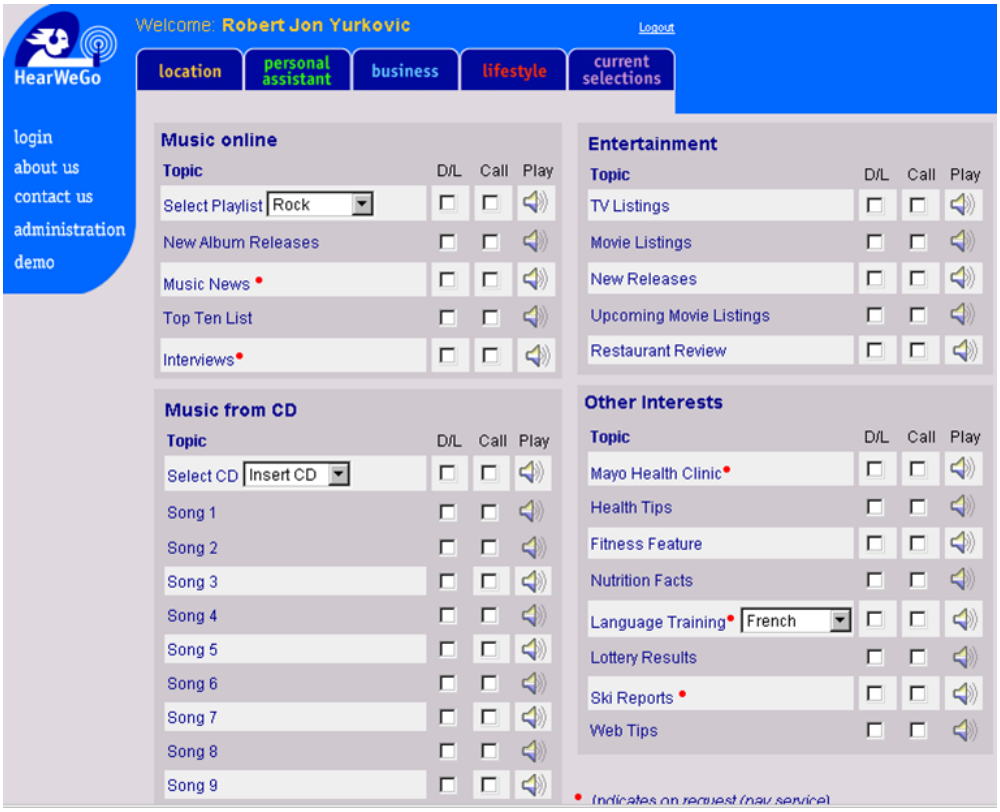


Figure 40 - Music Preferences

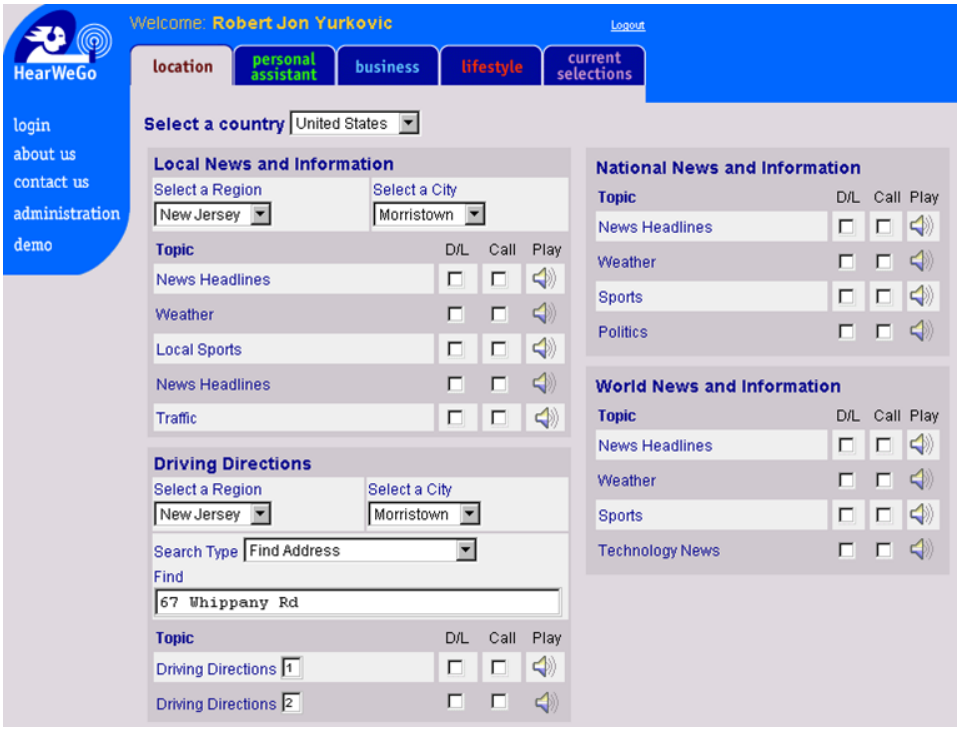


Figure 41 - Location Services Preferences

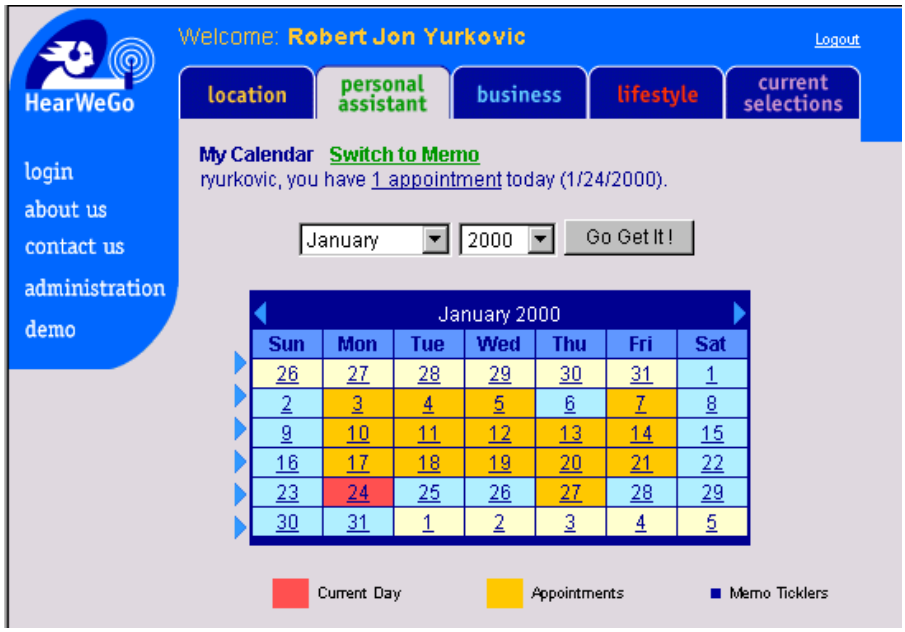


Figure 42 - Personal Assistant Services