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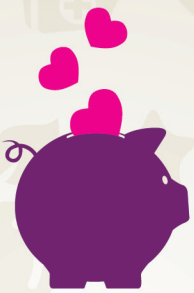
MASTER IN PRODUCT SERVICE SYSTEM DESIGN



SALUD *en* CUENTA

A PRODUCT SERVICE SYSTEM FOR SENIOR WOMEN'S HEALTH IN MEXICO

THESIS BY
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A.A. 2011-2012

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Abstract
(English Version)

SALUD *en* **CUENTA** is a Product-Service System to promote and increase health preventive actions through a saving-money program addressed to Mexican senior women and their main health issues.

SALUD *en* **CUENTA** is an annual prevention program including four periods of three-months. The four period goals are designated to cover the principal health issues of Mexican senior women. The first three-month period is about metabolic diseases that include diabetes and cardiovascular disease detection. The second three-month goal deals with nutrition. Until the results of the first period are shown, we can teach senior women how to eat and live according to their age and needs. The third period is related to cervix cancer because it is still the second most spread cancer in Mexican women. The last period is about breast cancer, the most spread form of malignant neoplasm around the world.

An important feature of **SALUD** *en* **CUENTA** is the fact that you can pay for it barely noticing it. Payments are divided into small weekly fees that almost every woman can afford. There are also different mechanisms around the service that help women pay this fee, such as: higher interest rate or reward system from local businesses.

Based on the partnership between the two biggest cooperatives in Mexico – Caja Popular Mexicana and Sistema Coopera – that covers the whole country, we share with our main stakeholder the aim of getting people together to achieve a common goal. Because cooperatives care about their community, the goals of **SALUD** *en* **CUENTA** is keeping senior women healthy as an important and increasing part of the community, empowering women and, as a secondary result, supporting local business.

Throughout behavioral economy and libertarian paternalism theories we support the fact of automatically enrolling senior women (with a certain amount of money in their accounts in order not to damage their economy with this service). This is because we know that is a good option for them.

SALUD *en* **CUENTA** has also extra benefits that include: talks and events held by specialists according to the three-month theme because first-hand information is a valuable tool. There are also discounts on local businesses that will also contribute to their prevention found in every transaction. You can find a related website and online medical records. Those are places to gather all your medical information in order to share it with your doctors and whomever you may want. “Doctor de bolsillo” is a personal medical assistance through calls and SMS, and a second medical opinion upon request to guarantee an accurate result.

Abstract
(Italian Version)

SALUD *en* **CUENTA** è un Product-Service System che promuove e incrementa le azioni di prevenzione per la salute attraverso un programma di risparmio economico dedicato alla donna messicana adulta, considerandone i principali problemi di salute.

Si tratta di un sistema economico di prevenzione annuale basato su quattro obiettivi - della durata di tre mesi ognuno - selezionati in base alla valutazione delle principali malattie che colpiscono la donna messicana adulta.

Il primo trimestre è dedicato alle malattie metaboliche e include la diagnosi del diabete e delle malattie cardiovascolari. L’obiettivo del secondo trimestre è la nutrizione: grazie ai risultati ottenuti sarà possibile insegnare alle donne come alimentarsi in base all’età e ai relativi bisogni fisiologici. Il terzo trimestre è dedicato al cancro della cervice - il secondo tipo di cancro più diffuso tra le donne messicane, mentre l’ultimo obiettivo è dedicato al cancro al seno, il tumore più comune tra le donne di tutto il mondo.

Pagare un servizio utile per la propria salute, senza rendersene conto: questa è una delle caratteristiche più importanti di SaludenCuenta. Il pagamento è suddiviso in piccole rate settimanali, accessibili per le donne di qualsiasi classe socio-economica. Sono previsti, inoltre, diversi meccanismi per facilitare ulteriormente i pagamenti, come un tasso d’interesse del 4% e un programma di agevolazioni grazie alla collaborazione con le imprese locali affiliate.

SALUD *en* **CUENTA** si basa sull’unione delle due più importanti cooperative del Messico – Caja Popular Mexicana e Sistema Coopera – che coprono tutto il territorio della Repubblica Messicana. Il programma - grazie ad associati e stakeholders - punta sulla forza della collaborazione tra persone e aziende con lo scopo di raggiungere un obiettivo comune. Come indica la definizione stessa di cooperativa, che ha come caratteristica principale quella di prendersi cura della “propria” comunità, **SALUD** *en* **CUENTA** mira infatti ad occuparsi della salute della comunità messicana femminile, che secondo le statistiche è destinata ad aumentare considerevolmente di numero, raggiungendo in breve tempo il 28% della popolazione.

Basandosi sulle principali teorie dell’economia comportamentale e del paternalismo libertario, **SALUD** *en* **CUENTA** provvede ad un cambio di conto automatico, ma sempre reversibile, per le donne che dispongono di almeno 5000 pesos sul proprio conto bancario, senza danneggiare la situazione economica di quelle che non raggiungono tale cifra.

Molti altri sono i vantaggi e i servizi SaludenCuenta: a seconda del tema trimestrale, per esempio, vengono proposti eventi e conferenze con specialisti, perché l`informazione è uno strumento molto prezioso; sono previsti, inoltre, sconti e agevolazioni nei negozi locali associati, che contribuiscono al “fondo” di prevenzione con ogni transazione eseguita.

Altro elemento di fondamentale importanza è il Doctor de bolsillo, un contatto diretto e personalizzato con il medico di fiducia, sempre raggiungibile via telefono e sms; su richiesta, inoltre, è possibile avere a disposizione una seconda opinione medica per garantire un risultato ancora più preciso.

Cliccando sul sito web **SALUD** *en* **CUENTA**, infine, è possibile trovare informazioni e dettagli relativi al tema trimestrale e - attraverso l’iscrizione - ogni donna potrà accedere ad un’area riservata alla propria storia clinica, dove saranno raccolte informazioni mediche dettagliate, da condividere con medici e famigliari.

Salud en Cuenta
in Italiano

SALUD *en* **CUENTA** [WHAT] è un servizio per promuovere e incrementare le azioni preventive, che trasforma automaticamente un acconto in un programma annuale di risparmio, dedicato alla [WHO] donna adulta in [WHERE] Messico. Il programma di prevenzione è stato pianificato in base alle necessità della donna messicana con più di 45 anni. Loro dovrebbero appartenere a una delle cooperative del programma e avere un risparmio di più di 5,000 pesos (pari a 295 euro). La popolazione messicana sta invecchiando così velocemente che nei prossimi anni si quadruplicherà e [WHY] il sistema sanitario Messicano non è pronto per questo. Come abbiamo visto nei capitoli precedenti, il sistema sanitario in Messico è povero e saturo. In modo da preparare il Sistema Sanitario Messicano a questo calo demografico dobbiamo trovare dei canali alternativi fuori del sistema pubblico è questa la ragione per la quale proponiamo questo sistema. Un servizio annuale con obiettivi trimestrali relazionati con la prevenzione che quasi qualsiasi donna messicana può pagare.

SERVIZIO PRINCIPALE

Il servizio principale di questo sistema è il FONDO DI PREVENZIONE. Questa caratteristica offre attenzioni private e personalizzate a un prezzo più basso ai membri di **SALUD** *en* **CUENTA**. Com'è possibile? Semplice, come lo scopo delle cooperative dice: mettendo le persone insieme per raggiungere un obiettivo comune. D'accordo con dottori e laboratori, parte della comunità e membri delle cooperative, per offrire un prezzo più basso a queste donne. In modo che le donne abbiamo il servizio a un minor prezzo mentre i dottori e i laboratori otterranno più pazienti e clienti.

Ci sono quatro obiettivi annuali, tutti sono stati selezionati per essere i principali problemi di salute delle donne adulte messicane. Il primo trimestre è dedicato alle Malattie Metaboliche.

Le malattie relazionate con i disturbi metabolici sono la principale causa di morte nella donna adulta. Diabete e dislipidemia sono alcuni esempi. Queste possono essere individuate attraverso un esame del sangue. Malattie correlate con questi disturbi possono essere prevenute o trattate in uno stadio iniziale.

Il secondo trimestre è dedicato alla nutrizione:

Sulla base dei risultati delle analisi del sangue e il check-up generale, il professionista della nutrizione sarà in grado di personalizzare la dieta delle donne alle loro esigenze specifiche, in base ai precedenti come: età, attività, fattori genetici e così via.

Il terzo trimestre è dedicato al cancro alla cervice:

Le donne latinoamericane hanno maggiori probabilità di un cancro alla cervice rispetto ad altre razze. Questo tipo di cancro è stato per tanti anni il più diffuso in Messico, adesso il cancro al seno è al primo posto in classifica. Per prevenire questo tipo di neoplasia maligna è necessario realizzare un pap-test da un ginecologo al meno una volta all'anno.

L'ultimo trimestre è dedicato al cancro al seno.

Nell'attualità il cancro al seno è il tipo di cancro più comune al mondo, la nazione messicana non è la eccezione.

Il rischio di avere cancro al seno incrementa con gli anni, ed è considerato anche più alto quando si parla di genetica. Per una diagnosi precoce di cancro al seno gli auto-esami sono suggeriti una volta al mese e la mammografia una volta l'anno, specialmente dopo 45 anni. Il servizio comprende la mammografia
e visita ginecologo che insegnerà alle donne come eseguire l'autoesame correttamente.

SERVIZI COMPLEMENTARI
SISTEMI DI ABILITAZIONE

Ci sono dei servizi complementari al fondo di prevenzione. Per esempio: Il pagamento senza rendersi conto è stato creato in base al risultato delle interviste, la gente pensa che la prevenzione sia una cosa che dovrebbe essere gratis o non rappresentare uno sforzo per l'utente. Secondo questo, abbiamo distribuito i pagamenti in piccole rate settimanali che quasi qualsiasi donna potrebbe permettersi (pari a 1,60EUR). In Messico è molto comune comprare cose attraverso questi sistemi di pagamento a rate senza interessi, questo è il modo in cui i messicani acquistano cose che altrimenti sarebbero impossibili di acquistare, perciò abbiamo applicato lo stesso principio a questo servizio facendo l'attenzione privata accessibile alle donne, un'attenzione medica di qualità con medici e laboratori certificati. Al fine di mantenere questi standard di qualità, abbiamo incluso un sistema di valutazione dei pazienti ai medici.

Il nostro obiettivo principale è fare la prevenzione accessibile a tutti, perciò abbiamo pensato che un tasso d'interesse più alto potrebbe coprire quasi nella sua totalità il canone annuale. Nella nostra ricerca, abbiamo trovato che un 4% è un interesse alto ed è possibile applicarlo a questo sistema. Così, con il 4% d'interesse e un conto con più di 35,000 pesos (pari a 1,900EUR) il canone annuale è praticamente pagato.

Il terzo sistema abilitato è uno sconto speciale da parte dei negozi affiliati. Salud en Cuenta cerca di valorizzare e appoggiare l'economia locale e la comunità perciò i negozi locali sono invitati a partecipare in questo sistema, offrendo uno sconto ai membri di Salud en Cuenta. La metà di questo sconto è subito applicato agli acquisti mentre l'altra metà è consegnata in modo di un assegno da essere bonificato direttamente al fondo di prevenzione.

SERVIZI COMPLEMENTARI
SISTEMI DI APPOGGIO

I sistemi di appoggio sono tanto importanti quanto i sistemi di abilitazione, i sistemi di appoggio offrono informazione e aiuto alle donne in modo di conoscere meglio se stesse e il suo corpo, insegnandole perché la prevenzione è importante e appoggiandole quando abbiamo bisogno.

Eventi speciali sono organizzati nelle cooperative usufruendo degli spazi destinati per le riunioni mensili dei membri. Professionisti della salute sono invitati a parlare e condividere informazioni relative con il tema del trimestre con queste donne, allo stesso tempo di promuovere se stesse.

Altro elemento di fondamentale importanza è il Doctor de bolsillo, un contatto diretto e personalizzato con il medico di fiducia, sempre raggiungibile via telefono e sms. Allo stesso tempo attraverso questo servizio i dottori sono pagati per ogni chiamata o messaggio risposto.

Perché sappiamo che la salute è una questione importante, se un membro non è soddisfatto o non è sicuro di un risultato, su richiesta, offriamo anche un secondo parere medico.

Anche se il nostro utente attuale non è tecnologico ma a causa del fatto che è in costante aumento e guardando avanti Salud en Cuenta offre anche una piattaforma web con le informazioni speciali sempre in relazione con l'obiettivo del trimestre. Attraverso questa piattaforma gli utenti possono controllare e condividere con il personale medico e la famiglia, la loro storia clinica. Un luogo dove poter raccogliere e controllare tutte le informazioni riguardanti la salute.

Tutti questi servizi fanno di **SALUD** *en* **CUENTA** un progetto completo e fattibile.

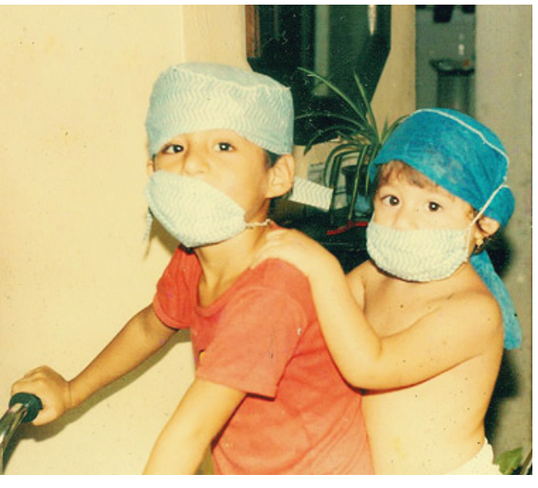


Figure 01. My brother and I. Mérida, Yucatán, México.
Photograph by Miguel Alcocer Selem / 1988

Figure 02. My dad and I. Mérida, Yucatán, México. Photograph by Erubey Ramayo / 2011

A Doctor's Daughter

Since I was born, I grew up among hospital crews, medicines, and playing with medical supplies because my father is a medical doctor, with a specialization in Gynecology. I'm not the kind of person who is scared about going to hospitals -and their smell- I'm very used to it. Hospitals -in particular, Hospital Materno Infantil [Children Hospital] in Merida, Mexico, my home town- was my playground during Summer Breaks. I used to open the oral contraceptive's cases to play with them. Indeed, I still love oral contraceptive's cases but now I know what they are for.

My favorite day at the hospital was consultation day, because I could stay with my dad. Once a week he had to see around thirty women that arrived from all of the state of the Yucatan, in Mexico. People in Merida, the capital city, twenty years ago rather than go to a private doctor used to go to a public hospital like Hospital Materno Infantil [Children Hospital], where my father worked. Public hospitals were for low-income people. People with no education at all or with a very basic one were the most common people to see at the hospital. People who travel more than one hour from outside of Merida in order to arrive before 7 A.M. so they would have the opportunity to see a doctor. My father has always been grumpy. I remember him most of the times having an argument with these women because of something that I was not conscious about. I thought it was because he was like that. Years later, I realized that one of the women was seven months pregnant and she has never visited the doctor during her pregnancy, having eight children at home. My father saw cases like these every day. He was always grumpy because of their lack of responsibility and information about their own health. This lack of responsibility and information comes from our socio-cultural context and the dominance of the "macho" figure very much inbred in Mexican culture.

During Summer Holidays spent at my father's office, while I was a teenager, I saw so many pregnant young women of my age. Once, I remember one day I saw one give birth between the hospital's chairs because she lived so far away from the public hospital that she did not make it on time to the operation room. I was shocked about it. Suddenly, all the information around me becomes important. New words to my personal dictionary appeared: prevention, sexual diseases, and contraceptives. Hospitals were no longer the fun place they used to be for me.

Some years later, I started to hear so often the word: Papanicolau. I was already studying at the university. My father, in his private medical office, was offering a service pack as a promotion: 150 Mexican pesos (about 8 euros) including a doctor´s appointment, a Papanicolau Test and Analysis Results. He pasted posters around his medical office that I designed for him. The result, it was not a big success. People can be apathetic about their own health, most of them just go to the doctor when they are sick or they need to see a doctor. I was part of this group: if my father would have not being always remembering me the things I needed to do, I would just have ignored that fact. Bingo! That was the same thought my dad had. He started to call women to remember them that they had a Papanicolau Test one year or six months before, and it was time for a new test. This worked and women started to come periodically to have their tests done. More than five years ago, cervical cancer was one of the main causes of dead in Mexican women. Nowadays, breast cancer is heading the list around the world.

So, my starting point for this thesis is: Why we do not gather resources in order to have the best care at the best price possible? Why women do not have a personal "Dr. Miguel Alcocer" (my father's name) who cares for you, keeps you updated, reminding you and pushing you to do the things you need to do in order to prevent diseases? And why we do not have all our medical information in one place, so we can share it with our medical staff or even our own family? Let's have it. During this project we will discover what senior women think, want and what they really need. In order to offer them a solution, according to these parameters.

“ The design process is the **specific series of events, actions or methods** by which a procedure or set of procedures are followed, **in order to achieve an intended purpose, goal or outcome**.[1] **”**

- Best K, 2006

Methodology

“The design process consists of a series of activities and methods, which are pulled together, in a way, which meets the requirements of a problem or project. Though there are similarities which can be seen across various case studies referenced by academics and practitioners” (Clarkson and Eckert, 2004).[2]

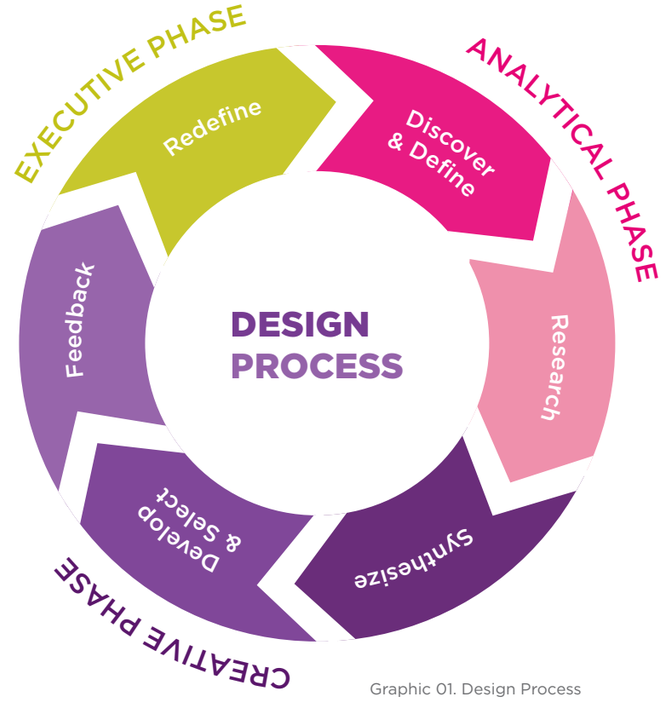
There is no concluding definition to explain the design process. Many theories agree that even though research has been done since 1950, there is not a satisfactory result on describing design process.

The design process was born from the Bauhaus in the early 20th century, and at the beginning it was applied exclusively to the industrial design processes. It changed not only the product, but also the way in which they were produced. Companies successfully accepted this new approach and changed their process and products on the basis of the Bauhaus Theories.

The first model of a design process was made by Bruce Archer in 1963 and published on the Design Magazine. This process included three main phases:
1) Analytical phase (divided into two steps: a) Programming and b) Data Collection),
2) Creative phase (divided into three steps: a) Analysis, b) Synthesis, and c) Development)
3) Executive phase (Communication).[3]
Design process for the first time was broken into key stages. Since that moment on, the design process has been applied to different fields such as science, engineering and manufacturing.

Design evolved and broadened into new disciplines like interaction, experience and service design. These disciplines have found their basis on the Design Process.

Taking inspiration from The Design Process of the Chicago Architecture Foundation, NASA’s Engineering Design Process, Design Council’s Double Diamond Design Process, and of course, from the Bauhaus Design Model, the design process model of this thesis is divided into six steps and three key stages settled by Bruce Archer.



Graphic 01. Design Process

ANALYTICAL PHASE

DISCOVER & DEFINE
Answering the questions: *who? where? why?* To set the basis that head us to define the selected theme.

RESEARCH
Before you are able to design, it is imperative that you have a clear understanding of the users’ goals and needs. We can use different tools and methods to develop this step: observation, interviews, photographs, and sketch or design toolkits. It is also important to see what already exists and how they are working to learn about it.

CREATIVE PHASE

SYNTHESIZE
During this stage of the process, designers take into consideration the entire information gathered in the previous stages and analyze how this could impact the project. What do the users do? How do they do it? And why do they do it? Analyze motivations and intentions from the user, all this coming from the information gathered. Create personas and their customer journeys in order to identify opportunities.

DEVELOP & SELECT
At this stage in the design process, designers can start brainstorming to create scenarios based on the opportunities identified at the previous stage. Some methods can be use by designers to facilitate creativity. E.g. IDEO’s toolkit, Six thinking hats, Mind maps, and so on.

FEEDBACK
No solution is perfect the first time around, prototyping can help the designer try out ideas with a real user, to understand how the idea works and to refine ideas. It is a low-cost solution and it can save you time and money testing your idea with relevant people. Prototyping can help you see if it works or not.
Based on prototyping results you can modify or confirm your idea.

EXECUTIVE PHASE

REDEFINE
With feedback coming from prototyping, designers can go back, revise and improve the final solution.

Objectives

• To develop a new prevention-driven PSS dedicated to Mexican senior women applying all the knowledge and tools learned from PSSD courses

• To research and analyze my user from a HCD –Human Centered Design- perspective

• To increase awareness and acknowledgment to a sick-driven Mexican society, specially senior women

• To deliver a feasible and coherent solution

ANALYTICAL PHASE

01 DISCOVER & DEFINE

Figure 03. Photography by American Anthropological Associations RACE: Are We So Different?. Moses, Yolanda. 2010

Women around the world

Cleopatra, Joan of Arc, Catherine the Great, Marie Curie, Simone de Beauvoir, Sor Juana Inés de la Cruz, Santa Teresa de Jesús, Grazia Deledda... so many women have played a leading role in history even though history has not always being fair to women. The word “woman” comes from the Latin word ‘mulier’ which comes from the term “soft”.

We are close to 3,361,154,732 women[A] around the world, and no matter the birthplace, social class or skin color, women everywhere suffer subordination. Men always have a better life condition and more possibilities, access and control of the resources.

In the last decades, women’s situation has improved in so many countries but it does not mean that inequality has disappeared. So many women are still powerless and do not know their rights. They do not have the same opportunities nor the same working condition men have. For a woman, it is more difficult to have access to the highest levels at corporations. The same situation in governments around the world, women are still a minority in most of the parliaments and representative bodies. Living conditions, in general, are worst for women than for men.

According to the World Bank, women and girls nowadays are living in a better situation than their grandmothers.[B] Despite the fact that there have been many advances in this area, women are still behind from the economic point of view.

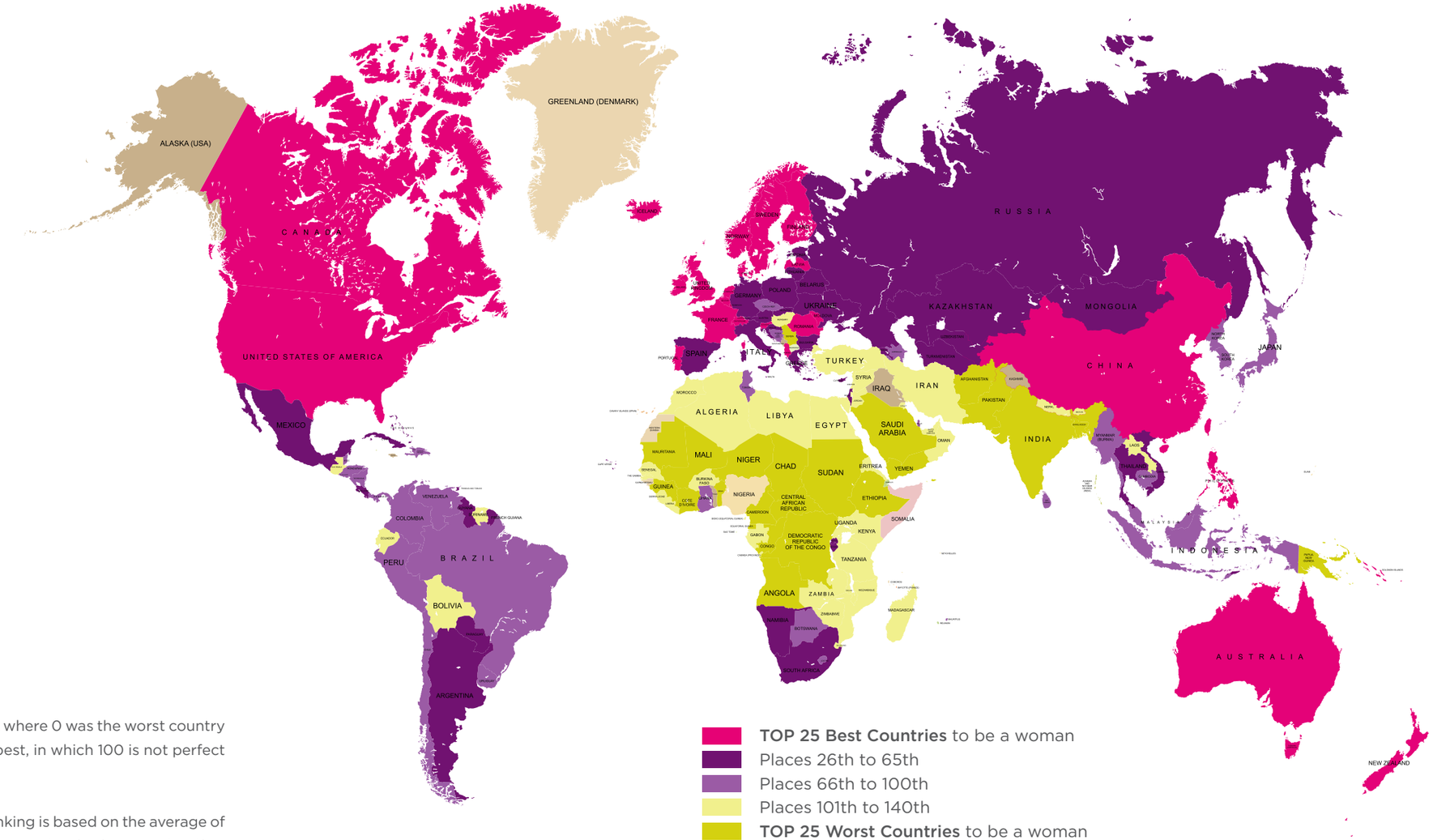
China and India, two of the most populous countries in the world, have an overwhelming number of male births and an exaggerated presence of male children under 5 years old. This fact suggests the presence of selective feticide and infanticide by gender in these two Asian countries.

The past century was the most violent of the history and the biggest targets were always women. We are affected not only during war, but also in peaceful nations. Violence is used as a way to control.

Women’s and men’s health are different due to biological factors, but it is also the result of gender inequality. Health inequalities are manifested by diseases and in the way health is perceived. It is a fact that women live longer than men, but health conditions are worse. E.g. in México more than 70% of men think their health is “good or very good,” while that perception is reduced to a 62% among women.[4]

Inequalities affect women in every aspect of their life: health, education, employment, living conditions, and even when making crucial decisions about their bodies.

The Worst and Best Places
for Women



Graphic 02. The worst and best places for women. Newsweek and The Daily Beast / 2011

In 2011, Newsweek and The Daily Beast launched their list with the Worst and Best Places for women analyzing dozens of data for 165 countries in order to determine which countries offer women the most expansive rights and the best quality of life. Data analyzed came from important sources, such as: United Nations Progress of the World's Women 2011-2012, World Economic Forum, Global Gender Gap Report 2010, World Health Organization World Health Statistics 2010, World Bank, World Development Indicators, among other important documents.[C]

These two important journals based on the data extracted created a list that highlighted not only where women are enjoying relative freedom and access to human rights and justice, but also countries where deficiencies remain.

By setting the rankings of the best and worst countries for women, they analyzed data on five categories: justice, health, education, economics, and politics. To determine the ranking, each country was given a score of 0 to 100 based on those five factors, where 0 was the worst country and 100 was the best, in which 100 is not perfect but the best.

Each country's ranking is based on the average of the five final category standard scores. In other words, the final ranking is based on how much better or worse a country is for women when measured against the average level of women's rights for all 165 countries.

The ten best places for women are: Iceland, Sweden, Canada, Denmark, Finland, Switzerland, Norway, USA, Australia, and The Netherlands. The ten worst places for women are: Chad, Afghanistan, Yemen, Democratic Republic of Congo, Mali, Solomon Islands, Niger, Pakistan, Ethiopia, and Sudan.

While women in Nordic countries are enjoying greater levels of equality, power, health, and well being among women than anywhere else, on the other side of the list, in Chad, women have almost no legal right, 10 years old girls are legally married, which is also a reality in Niger, the seventh worst place for a woman. Most women in Mali, the fifth place, have been traumatized by female genital mutilation. Meanwhile, in the Democratic Republic of Congo, 1,100 women are raped every day. In Yemen, a man is free to beat his wife whenever he wants.[D]

One of the more surprising facts in the Newsweek list is that women's education improves economies. Some examples are Brazil, South Korea, Turkey, and Indonesia, countries with a past of colonialism or tyranny but countries that have chosen to educate women and grant them legal rights.

As can be appreciated on the graph n.02, Nordic countries are situated among the best countries for women. Canada is the first country of America to rank in the list on the 3rd place while United Stated of America was rank on number eight. Philippines with 86 points out of 100 and ranking on 18th place, is the first Asian country on the list.

In general, Europe and North America can be considered good places to be a woman, while Africa and Middle East can be considered the worst places for women.

Women's role in Mexico

Women history in Mexico plays a very important role since the beginnings of Mexican culture until nowadays in all social, cultural, politics, economic, and educational aspects that represent a large period of time plenty of efforts, many struggles, and sacrifices.

According to Michelle Zimbalist Rosaldo, a social, linguistic, and psychological anthropologist famous for her pioneering role in Women's Studies and the anthropology of gender, there are two different spheres in which women and men interact: public and domestic. The public sphere is related with all the activities away from home (politics, industrial, military) and the private sphere that is characterized by the activities inside home (taking care of children, cleaning, cooking). This separation came from the first primitive settlements where men were the ones to go out and women had to stay put. Splitting sexual roles by function: men were designated to produce and women to the reproduce.[5]

Another important fact on women's role was the creation of the concept of family. Family became a socio-economic nucleus in society, where children and women became dependent of men. In the Pre-Hispanic Period, in some cultures a family was considered: a patriarchal and an authoritarian one. Patriarchal because what we have seen before with the creation of the family as a concept, was the male who was in charge of bringing resources for the family. Women had (again) the function of reproducing, a very important role for Pre-Hispanic cultures because depending of the social class, women were the agent in charge of the replacement of working forces (talking about the working class) and for the noble class, an agent who transmitted power through procreation. Always inside the limits of family life such as: matrimony and maternity.

Submission and subordination were the Pre-Hhispanic conditions of women. They could not participate in any activity related with power, wealth or prestige, such as priesthood, the world of commerce or war.

During the Colonial Period, as result of mixing races, new ethnic, castes, and social groups appeared. In this period the differences between class, ethnicity, and gender were more and more obvious. Women's situation during Colonial times did not change drastically. Women still had a passive participation with different activities depending of the geographical position: urban and rural. Catholic religion was an addition to the women's life and played a very important role in their life from this period on. Catholicism determined that the position of women were right beside their husbands, who they had to obey and respect. Women for the Catholic Church had the same range of an underage. Even though they could have properties, it was always a man the one to manage them. A husband in case of a married woman or a father/tutor in case of a single one.

Figure 04. La lucha de las mujeres en México. Unknown / 1910

In the first years of an Independent Mexico (1821), women worked on the country, on food, as artisans or as servant. 65% of women were servants, 2% worked as artisans, 10% worked on the food field, and the rest worked in other activities.[6]

Since 1870, under Porfirio Diaz's government, women started to be included in the society through education. They would be educated to be good mothers, wives, and daughters. Since women started to be educated, they started to ask for more, and more respect, more rights, more power, going outside the boundaries settled by the male society.

Since that moment on, women had fought for recognition as equals. Fighting for gender equity even though biological factors give women the first disadvantage (we will develop this theme more in the next chapter) and from the negative effects originated by attitudes, behaviors, culture, and institutions.

If in XIX century, women only could work as a servant or artisan, during this period they started to work as employees, secretaries or stenographers. By 1890, there were 183,293 workingwomen. That number represented 26.5% of the economically active population of Mexico. By 1900, this numbers increased and from 13,607,259 Mexican inhabitants, 399,617 were workingwomen.

Middle class and working class women increased their presence in the public sphere. They took care of organizations and social movements. Female teachers were protagonists of this fight. They were pioneers of the feminism in Mexico searching for equal opportunities with men.
During the Mexican Revolution (1910), women started to express their interest to be part of the public sphere(until now only reserved to men). Women presence in a men's world started when during this war period, men were not

Figure 05. Soldaderas. Unknown / 1910
Source: http://nottoexceed240days.files.wordpress.com/2011/02/soldaderas1.jpg

enough for war and women were called to be part of the army and they fought side by side with men. Those women were named Adelitas o Soldaderas. This is an important fact in women's revolution. They started to go out, and actively participated in the socioeconomic world.

By 1940, there were 153,630 educated men in Mexico and only 71,362 women: one out of ten women were educated.[E]
In this period, women's education had been beneficiated by quality of information but considering the knowledge about their body and sexuality, the situation was not the same as it was. Modesty, frequently confused with ignorance, was still a taboo for women.

American cinema of that period was in charge of communicating new morals and new habits. Beauty prototypes changed from chubby, shy, and passive to a stylized figure based on diets, exercises, and weight obsessions. Women were more integrated into society, but alienated from something that she had to be part of.

By 1947, Mexican President Miguel Alemán allowed the first attempt to grant women the right to vote. This first attempt prepared the society to finally receive officially women's right to vote in a presidential election in 1953. Women's right to vote allowed them to exercise this right, but there were still some stigmas about losing their femininity and forgetting their role as mothers and wives.

The launch of contraceptive pills was another important factor in this journey. Pills offered something that women did not have before: the option to choose if they wanted to accomplish their role as mothers or not. This fact was extremely controversial and it was a very important step towards the equality with men.

As a result of all the women movements in the XXth century, in Mexico it was declared a principle of equity between men and women and it was included in the Mexican Constitution of 1974. The 4th article says: "Men and women are equal to the right; this will protect the organization and development of the family. Every person has the right to decide on a free, responsible and informed way about the number of children desired."

During the 1976, 1982 and 1995 Mexican economical crisis, women had increased their participation in the money market helping with the family income and with a better quality of life.

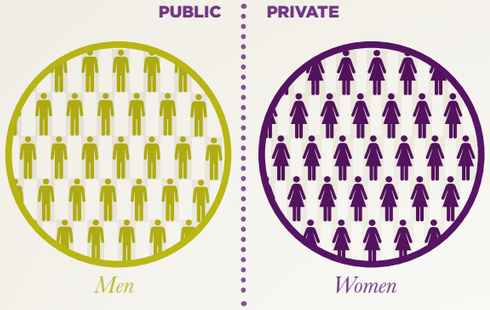
Nowadays, feminism is not a fight to get the same rights. It is a direct questioning of a patriarchal, authoritarian, and individualist men's world. We, as women, have the responsibility to change women's education towards success. Change has to come from us. A change in both spheres: both public and private.

Figure 06. Tlayudas and the hands of women. Norma Hawthorne / 2012

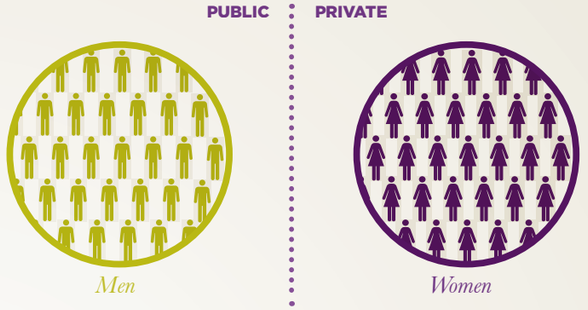
WOMEN'S ROLE IN MEXICO

FROM PREHISPANIC TO NOWADAYS INFOGRAPHIC

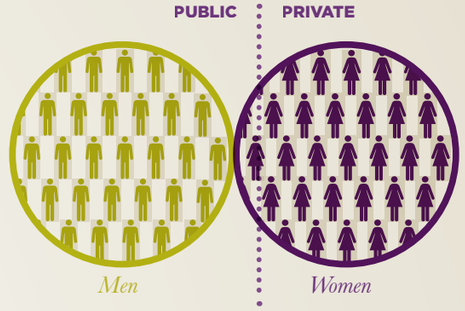
PRE-HISPANIC
Mesoamerica



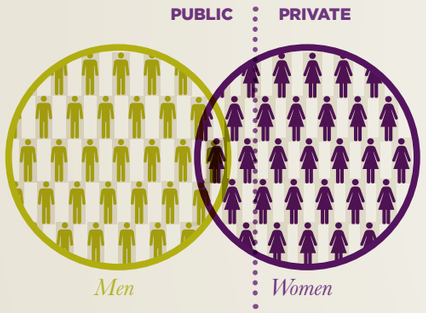
COLONIAL
(1521)



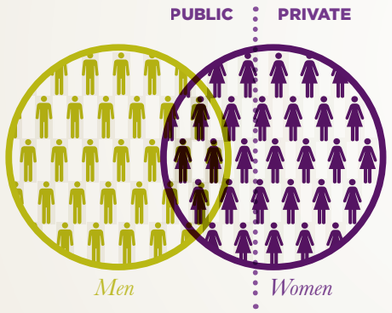
INDEPENDENT MEXICO
(1822)



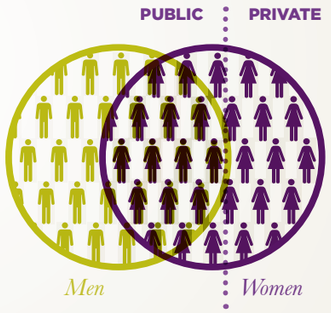
PORFIRIATO
(1870)



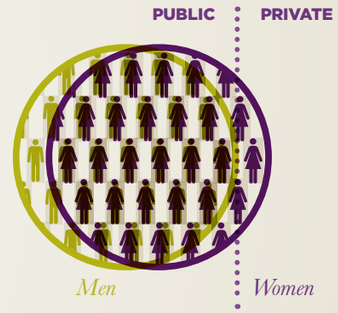
MEXICAN REVOLUTION
(1910)



ECONOMICAL CRISIS
(1976/1982/1995)



NOWADAYS
(2011)



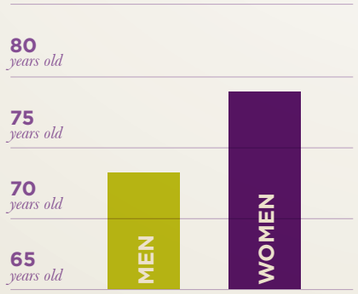
WOMEN'S STATISTICS *in Mexico*

There are **55,2 millions of** women in Mexico *(by 2010)*

There are **97** males by every **100** female in Mexico

** Data from: Sistema de información y estadística para hombres y mujeres / Instituto Nacional de las Mujeres*

WOMEN'S LIFE EXPECTANCY *in Mexico*



** Data from: Sistema de información y estadística para hombres y mujeres / Instituto Nacional de las Mujeres*

WORKINGWOMEN *in Mexico*

7 in **10** are workingwomen

** Data from: Sistema de información y estadística para hombres y mujeres / Instituto Nacional de las Mujeres*

WORKINGFORCE *in Mexico*

** Data from: Sistema de información y estadística para hombres y mujeres / Instituto Nacional de las Mujeres*

Graphic 03. Infographic: Women's role in México

Stages of women's life

If we think on anatomic differences between men and women, we should consider the body as a whole, from the smallest particle to their sensitivity and behavior.

Women have reproductive functions. That is the main difference between men and women, and that is also the reason why there are special characteristics.

Talking about physiological and morphological evolution, women's life is divided into four stages: childhood, puberty, adulthood and advanced adulthood. While according to history, philosophy, psychology and arts women's life is divided into an ancient tripartite division of Maiden, Mother and Crone.[G]

MORPHOLOGIC AND PHYSIOLOGIC PHASES

Starting with anatomical and functional phases, during childhood there is not a big difference between male and female. This is the phase of life that goes from birth, preschool and school phases, until the development of the reproductive organs. This fact sets the beginning of puberty.

The second phase is puberty; which is characterized by morphological (anatomical) and physiological changes that set the beginning of this phase. In females, one of the anatomical changes is the growing of the breasts. In this phase, the female breast will get to the adult dimension. In the genital zone, the appearance of pubic hair starts and the development of external and internal reproductive organs, in particular with changes in ovaries that start ovulating. This change is also related to the uterus. Another change is the appearance of the first menstrual bleeding, named menarche, and this event occur in young women between the ages of 8 and 14. Menarche changes between girls depending on diet and race. Puberty lasts until the young woman is 18 years old, an age that in some cultures begins the next phase: the adult one.

On the other hand, adulthood in women is considered a period approximately between 18 and 60 years old. This phase includes the reproductive phase; it is the phase in which the human being can reproduce and it lasts until a woman is 40-45 years old. The reproductive phase finishing line can change based on diet and race, and at the beginning of menopause. The principal characteristic of menopause is the disappearance of menstruation and the permanent cessation of the primary functions of the reproductive organs. Advanced adulthood in women starts around 60 years old and it lasts until the moment of dead. It is characterized by the progressive degeneration of functions belonging to all the systems that are part of all living beings.

THE MAIDEN, THE MOTHER AND THE CRONE.

While the first section is based on anatomic and functional changes of the body, ancient divisions are organized around goddess cultures, blood mysteries, and body wisdom. [G]

On this section, there are events, which profoundly influence women's lives, such as: menarche - the first monthly flow of blood; childbirth, which is accompanied by blood from giving birth; and menopause, when a woman's "wise blood" remains inside her to give her wisdom. Menstruation, ovulation, pregnancy, childbirth, and menopause are such intense physical and psychological experiences that these are transformed into body wisdom.

The first stage is the Maiden. During this stage, a woman's task is to discover her individual creative potential while she is learning and preparing herself for the future: developing skills, gathering experiences, and building a conscious mind that will prepare her for adult responsibilities.

Sexually, this should be a period of exploring pleasure, without the burden of motherhood.

Figure 07. The Three Graces. Peter Paul Rubens / 1639

The Maiden Stage does not end with the first intercourse, but with pregnancy and the birth of the first child.

The second stage is the motherhood. The developmental task for a woman is to accept responsibility. The psychological change that comes with the transition to motherhood is driven by hormones not present in masculine bodies. Prolactin, one of the most powerful hormones released with birth is the nursing hormone, which has impressive properties for increasing the patience and nurturing abilities needed during this stage.

For women who do not give birth, there are many ways to learn and express the lessons of this stage: nurturing others, taking responsibility for those in need, and mothering stepchildren, relatives' children, and pets.

The last stage is the Crone. A woman's task is to share wisdom under this stage. In Neolithic times, Crone women were the tribal matriarchs. The Wise Woman teaches knowledge gained from her skills and life's experience. This stage of life, more than any other, is a time of giving back to society the wisdom accumulated through the years.

The change from Mother to Crone is a more gradual than the one from Maiden to Mother, so dramatically marked by the birth of the first child. The transition begins when a woman notes changes in her cycle. The symptoms can change so drastically from one woman to another that no one can predict this event. Women in this stage are coming to the end of caretaking duties and they must consider their own needs above those of others.

The integration of the three women- The Maiden, The Mother and The Crone –can enable women to express their special individuality, more intensely.

Invisible woman
Gender inequality in health

The World Health Organization describes health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."[7]

HEALTH TRIANGLE

The health triangle is a measure of the different aspects of health designed by the Health Department of Georgia State University. It consists of: Physical, Social, and Mental Health.[8]
Physical health deals with the body's ability to function. Physical Health includes all the factors that can affect our body in this category such as: exercise, sleep, nutrition, drugs, and weight control.

Mental health deals with the way we think, feel, and cope with daily life. It includes learning processes, stress, and mental disorders.
Social Health deals with the way we react to people within our environment. This includes: public health, family relationships, and peer relationships.

If one side of the triangle is affected, it loses the balance. Talking about Social Health, women are born with disadvantages because of the fact of being a woman. Gender inequality affects people not only socially, but also mentally, and physically.

According to the World Health Organization, the main determinants of health include the social and economic environment, the physical environment, and the person's individual characteristics and behaviors.[9]

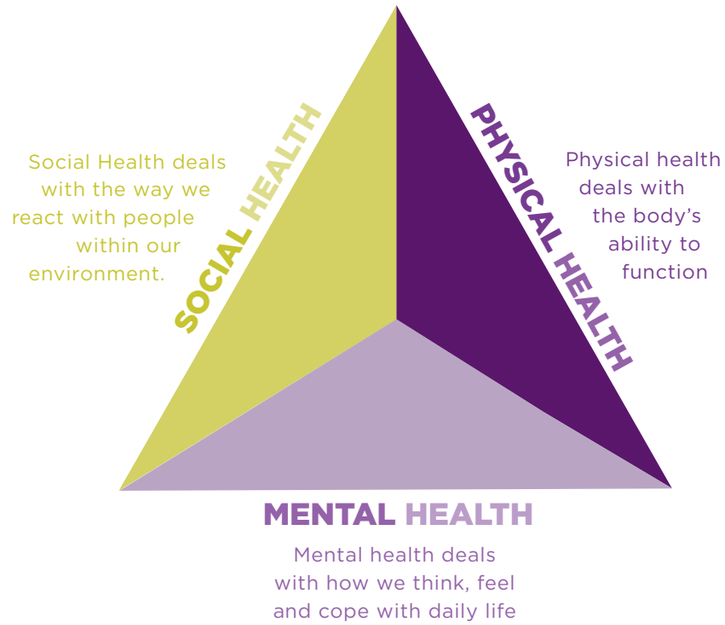
Specifically, social determinants of health are the conditions by which people are born, they grow, live, work, and age. The social determinants of health are mostly responsible for health inequities.

Through space and time, we have seen how women have been affected by social conditions. Governments, religions, mass media and culture are responsible for women's positions in a men's world. Girls in some countries are fed less, educated less, and more physically restricted; and women are typically employed and segregated in lower paid, less secure and 'informal' occupations. Gender hierarchy governs how people live and what they believe.

Restrictions on their physical mobility, sexuality, and reproductive capacity are perceived to be natural; and in many instances, accepted codes of social conduct and legal systems condone and even reward violence against them.

In the medical sciences, history is not very different. Gender inequality damages the health of millions of girls and women across the globe. Some people may think that gender inequality is given by biological conditions, but it has been proven that social conditions are the main factors and they can be changed. Biology is not our destiny.[10]

In most countries women's life expectancy is higher than men. However, there are also a number of countries, such as: Bangladesh, Tonga, Afghanistan, Nepal, Malawi, Benin, Botswana, Cameroon, Central African Republic, Kenya, Niger, Nigeria, Pakistan, Qatar, Tuvalu, and Zambia where women's life expectancy is lower, or equal to that of men (WHO, 2006). This is caused by the social and economic context



Graphic 04. Health trangle designed by Georgia University. 1998

-gender inequality is higher in these countries-, the physical environment -they are developing countries and sanitary conditions are not optimal in the most of them-, and the person's individual characteristics and behaviors -black race is genetically more exposed to some diseases than other races, example: cancer and maligners tumors.

Some health conditions are determined primarily by biological sex differences. Others are the result of how society splits socialize women and men. However, many health conditions reflect a combination of biological sex differences and gendered social determinants.

According to The Global Burden Disease made by WHO in 2002, about 68 out of 126 health conditions, and health risk factors, have at least 20% differences between women and men.

Women are more likely to suffer some conditions, E.g. Women have 2 to 3 times more probability to suffer from depression than men. Some studies relate this fact with other biological factors related to menstrual cycle, menopause, and other causes; while social factors like abusing during childhood may play a more important role than biological ones.[10]
Other important factors that really affect women's health are: lack of awareness of knowledge about women and the existence of a health problem) and acknowledgement (recognition that something should and can be done about a particular health problem). Lack of awareness and acknowledgement are not exclusively to low-income women, even if they are their favorite victims. For high-income people, combining these factors, plus apathy or fear, can become easily part of them.

Even though, women are the first in line when talking about health care. They are the first health provider when talking about their families; and they dedicate more time taking care of others beside themselves.

> **“ It can be sad but not surprising, that women have been treated often without equity** in social relationships, politics, business, education, research, and to the health care system **”**
>
> *- Bernardine Healy, Yentl syndrome, 1991*

Figure 08. Invisible woman. Dave Knapik / 2011

Invisible woman
Yentl syndrome

As for the disease, women have been invisible to the health care system, to diagnosis processes, and even to treatments. Since it was published by The New England Journal of Medicine, this situation is known as «Yentl's Syndrome». Women health problems have been reduced to social, cultural, and to other kind of causes that have hidden their physiology, their condition, and their environment.[H]

Until the decade of the 1990's, Medical sciences have been androcentric. This means that 20 years ago this science only had men as the center of all their investigation. They studied men and their physiological and anatomical characteristics, as well as the evolution of medical conditions and treatments. From 1992, medical studies started to consider women and their health as an individual subject.

During the 1980's there was a general thinking that women couldn't suffer some diseases thanks to their genetic and hormones exclusively from females. E.g. cardiac diseases. The reality was even worst; there are diseases and disorders in which mortality is 30 times higher in women than in men -cardiac problems included-. [10] When they discovered that women could actually have cardiac problems, a medical solution was easy to find: treat women as if they were men. This is the starting point of Bernardine Healy's investigation, what we know now as: Yentl's Syndrome.

Dr. Healy was the first researcher that discovered that mostly medical studies, trials, and investigations were made on men. A lot of the drugs that we use nowadays have been only tested on men. It represents a higher risk to suffer negative consequences by using them.

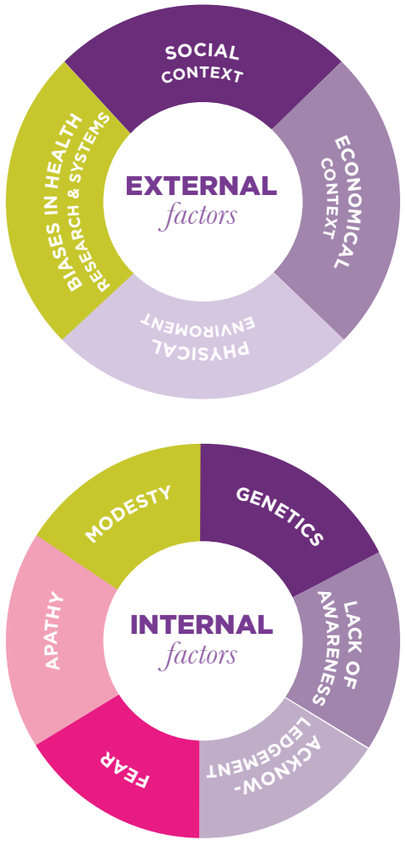
In 1977, the US Food and Drugs Administration (FDA), prohibited the use of fertile women in any clinical trial and it took 15 years to retract affecting in this way the result of a lot of clinical trials. With the aim of protecting women and children, they affected them excluding them from drugs studies after they will use them. For example, AIDS clinical trials have been tested in more than 40,000 adults, but only 15% of these were women. Almost all the anti-inflammatory drugs used by now were tested only in men.[11]

Another social factor in health inequality comes from health specialists. They think women complain too much, considering 25% of their diseases as psychosomatic problems. Women's symptoms have been minimized to psychological complaints. There is a study that proves this; doctors pay more attention to men's complaints than women's.

> **“ Medical sciences is not objective nor definitive**[H] **”**
>
> *- Carmen Valls Llobet, 1996*

Women have been invisible because their problems have been considered equal to men's problems or even easier. Women have been catalogued as NO-MEN and they have been excluded by society.

World life expectancy shows that women live longer than men. This affirmation is the reason why so many people think that women are naturally protected, but at the same time they have a higher burden of diseases, disorders, and disabilities along time. (Carmen Valls Llobet, 1991). It's true, women live longer but they spend more time and money in health services (excluding natural conditions such as maternity).



Graphic 05. Main determinants on women's health

Health in Mexico
Institutions and actors

When a person gets sick and requires special care, he/she has to go to hospitals, look for medical specialists, and use modern and sophisticated equipment in order to specify the type of problem he/she has encountered. However, personal commitment towards prevention is equally or more important than the activities that are performed in a hospital or in a private medical office.

In Mexico, according to the law, there are several organizations that fight against diseases, reducing mortality, and improving life expectancy of Mexicans. In the public sphere, there are organizations such as Instituto Mexicano del Seguro Social (IMSS), Instituto de Seguridad Social para los Trabajadores al Servicio del Estado (ISSSTE), Secretaría de Salud (SS), Desarrollo Integral de la Familia (DIF) and Cruz Roja Mexicana.[I]

Some of these organizations, ISSSTE and IMSS, serve only to government employees or to those who work for companies that pay the corresponding fee to provide them health care. Others, like Secretaría de Salud, provide medical care to anyone, even if they are not covered by any kind of social security or health insurance. There are also institutions like Cruz Roja Mexicana that cover their expenses through donations. They provide their services to anyone who needs it, regardless of their social or economic position.

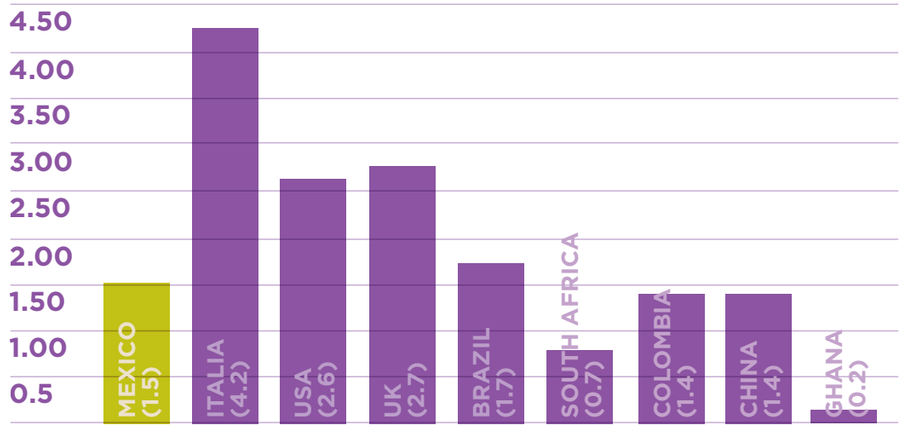
In 2005, Seguro Popular (Universal Care) was launched to serve a larger number of Mexicans. The objective of this program is to provide medical coverage to low-income people that does not have any kind of social security. This program is voluntary and free, but does not cover major health problems that affect Mexicans: such as chronic degenerative diseases or serious injuries.

Despite all of this, almost 55% of Mexicans do not have any social security.[K] This high number

55% of Mexicans doesn't have social security according to the *Sistema Nacional de Información en Salud: SINAIS*

Graphic 06a. Social Security situation in Mexico

Physicians
for every 1000 inhabitants



** Data from: world health organization*

Table 01. Physicians density (per 10 000 population)

of people without social security is a major concern for the Mexican government and its citizens.

Seguro Popular does not have hospitals. The insured must be sent to one of the hospitals belonging to the government or the federation. This fact helped to increase the saturation of public health services in Mexico. Services that are already insufficient for the Mexican population.

** Data from: SINAIS*

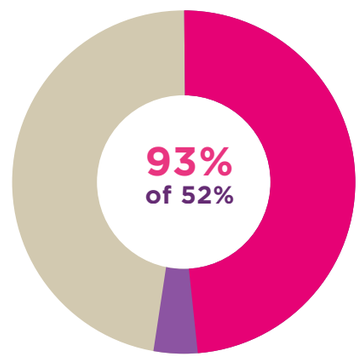
Graphic 06b. Physicians total density in Mexico

There are 187,868 physicians in Mexico, which means 1.5 physicians for every 1000 inhabitants, according to World Health Organization and SINAIS's data. This numbers can be compared to other Latin American countries, as can be appreciated on table no. 01, Brazil and Colombia have 1.7 and 1.4 physicians for every 1000 inhabitants, while Italy, being one of the countries with the highest rates, has 4.2 physicians for every 1000 inhabitants. On the other hand, we found Ghana, one of the poorest countries in the world, with only 0.2 physicians for every 1000 inhabitants.[L]

According to the World Health Organization, Mexico has a total expenditure on health of 525 dollars per capita, 52% of this expenditure is coming from private expenditure, and 93% out of this 52% is coming directly from Mexican citizens.[L]

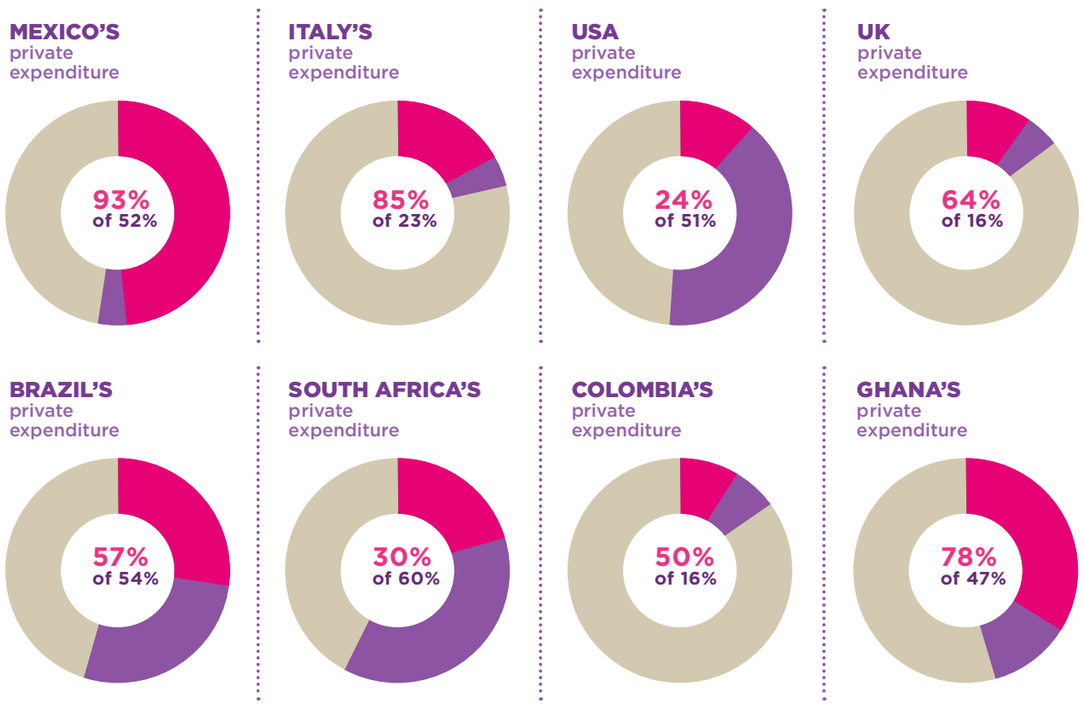
As it can be appreciated on the graphic no. 08, Mexican private expenditure can be compared to

Private expenditure
on health *in Mexico*



52% of private expenditure, **93% of this came directly from the pocket of users,** according to the *World Health Organization*

Graphic 07. Private expenditure on health in Mexico



Graphic 08. Private expenditure comparison graphic

the United States' private expenditure with the difference that in the United States only 23% out of this 51% is coming from citizens.

In Mexico, the private medical sector is integrated by many units and many individual doctor's offices. This sector is heterogeneous in terms of its capacity and service. It was thought for a long time that private medicine provided services only to a small group - 5% of the population - who could afford them.

By 2005, the Sistema de Encuestas Nacionales de Salud (National Health Surveys System) was created and the first national survey was made, and the perception changed. Surveys discovered that the private sector represents only one third of the outpatient services. Seventeen years later this first survey has proven that almost half of Mexico's population seek private medical services.

The Encuesta Nacional de Salud - National Health Survey - has shown that people without insurance nor social security are the ones who use the services of private medicine the most. But also, a significant number of people with social security use them. Thus, the uninsured population is the one who paid more for medical care. In relation to the population coverage, about a quarter of hospital admissions are done in the private sector, in particular during pregnancy or childbirth and in second place, in cases of surgery.

The role of private medicine in Mexico is important, especially because it serves a great part of Mexican population. It has available beds and medical staff who represent an important part of the Mexican Health System.

Mexico is getting older
and has a female face

Mexico is experimenting a fast demographic transition.

The first stage of the transition happened in the 1930's when mortality rates were decreasing, along with birth rates increasing caused by a high population growth. The second stage was characterized by a declining birth rates which slowed population growth. By 1960, the fertility of Mexican women was 7.0, while by 2000 it decreased to 2.4%.[12]

In the last 50 years, the average life of Mexicans doubled from 36 years in 1950 to 74 in 2000. It is expected to continue to increase in the coming decades up to 80 years by 2050. This is a similar level to those of Japan, one of the countries with highest life expectancy in the world.

As it happens in the whole world, Mexican women live more than men. By 2050, experts say that life expectancy will reach 83.5 years for women and 79 years for men.

THE PYRAMIDAL POPULATION OF MEXICO

The pyramidal population of Mexico will lose its triangular shape, the main characteristic of a young population. It will transform into a large rectangle with a bump at the top, typical of aging populations.

On the graphic no. 09, we can appreciated that in 1970 more than 70% of the population had less than 15 years old. By 2000, there is a bump in the middle pyramid that reflects the increasing number of young people and a narrower pyramid base. This is due to the decrease in births.

Forecasts indicate that the base of the pyramid will continue to shrink in the coming decades. The largest generations born between 1960 and 1980 will start to increase the size of the top of the pyramid as they reach 60 years old. This will produce important changes on the shape of the pyramid, which will become wider at the top and narrower at the base.

** Data from: CONAPO predictions*

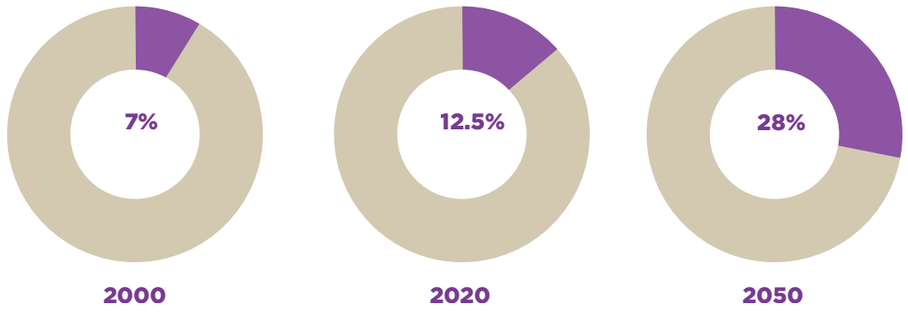
Graphic 09. Mexican Population pyramids 1970-2050

FROM 7% TO 28%

The aging process in Mexico is not reversible. Tomorrow's senior adults are already born. The largest generations born between 1960 and 1980, will become the group of people with 60 years from 2020 on. By 2000, as the graph shows, the proportion of adults was 7%. It is estimated that this percentage will increase to 12.5% in 2020 and 28% in 2050. It means that from 6.9 million of senior adults nowadays, on the next 40 years México will have 36.2 millions. Which means that México have only two decades to prepare the conditions to manage the impact of this process. The average age of Mexicans will change from 27 years in 2000 to 43 years in 2050.

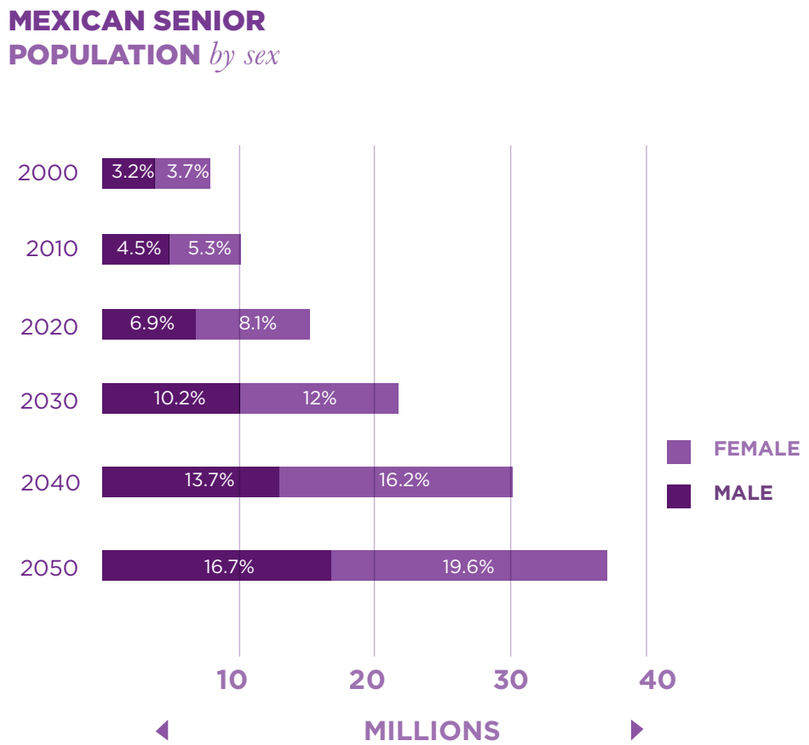
Another indicator of the aging process of a population is the average age of that population. During the past thirty years, the average age increased only five years from 22 years to 27 years. In comparison with the next thirty years, the average age will increase more than ten years and by 2050 it will reach a maximum of people of 43 years old.[12]

This means a restructuration in terms of social services and a reorganization of institutions. The government will have to meet the social needs of employment, housing, education, and health care of an increasing number of senior citizens.



Between 2000 and 2050, **SENIOR ADULT POPULATION WILL GROW FROM 7% TO 28%** according to *Consejo Nacional de Poblacion*

Graphic 10. Aging evolution 2000-2050



Graphic 11. Mexican senior population by sex graphic

AGING HAS A FEMALE FACE

Men die more than women at all ages. This means that there are more women than men in old age. This is common in all countries, but is even more evident in developing countries where life expectancy between men and women is bigger. Despite the fact, that there are more males than females at birth, male mortality rates are higher than women. Approximately at 24 years old, the number of men and women who die are equal. From that moment on, there are more women than men who die.

As can be appreciated on graphic no. 12, in the next forty years, this difference is going to be wider.

HEALTH CHALLENGE

One of the biggest challenges of this demographic transition is the impact on health services.

As the population is getting older, this will represent an increase in the demand of healthcare services. Mexican public healthcare services are already overload and senior adults need more attention than other groups. Diseases associated with this group tend to be chronic and degenerative, which means they are long-term, involve more technology, more expensive medicines, and longer periods of hospitalization.

By 2000, leading causes of death in senior adults were cardiovascular diseases, malignant neoplasms, diabetes mellitus, digestive diseases, and respiratory diseases. In the future, this trend will increase; which means that the cost of health care for senior adults is going to be higher and higher over time.

The health of senior women

People say that once you are 45 years old, this is the time true maturity begins. In this phase, senior adults have the opportunity to take care of themselves again.

Without a doubt, women's personality can be affected in these years. The awareness of this young adult stage is complete, the growth of children, the starting of physical decline, and the close proximity to death are factors that affect women's moods and make them think about the life they have lived.

Because of all this, it is important to understand this new stage in their lives and consciously incorporate these changes as part of life. Besides, they have to accept these changes as a new opportunity to achieve new goals from the point of view of senior women.

There are several elements that influence women´s health when they mature: genetics, environmental factors, lifestyle, and health care received in the past.

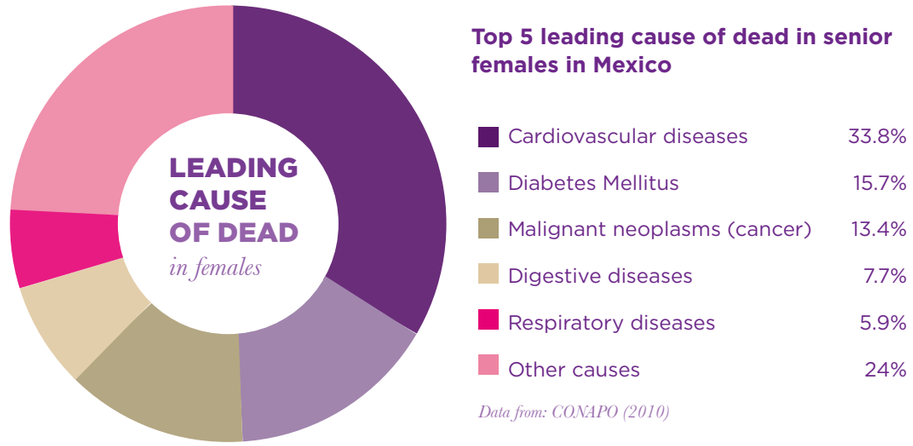
In Mexico, the leading causes of death among senior women are: malignant tumors, diabetes mellitus, heart diseases, liver diseases, strokes, and accidents.13 However, many of these causes of death and disability can be prevented or delayed with early diagnosis and treatment.

A large number of health problems, such as tumors, diabetes and heart problems could be detected and treated by practicing periodic check-ups in order to detect these problems in an early stage. This could change the situation and decrease death rates related with these diseases.

CARDIOVASCULAR DISEASE

People consider cancer as the leading cause of death. However, cardiovascular disease is the main threat to senior adult's health in almost the whole wide word. For a long time, people thought that women were almost immune to this disease. Nowadays, it has been proved that cardiovascular disease affects men around 50 years old, while in women it happens 10 years later.[14] Risk factors related are: age, diabetes, overweight, smoking habit and lack of physical activity.

Suggested preventive actions for cardiovascular disease are: a clinical check-up at least once a year and a chemical blood test. This clinical chemistry blood test must recognize factors such as: C-reactive protein, lipoproteins, triglycerides, and glucose.



Graphic 12. Principal health problems that affect women in Mexico

MALIGNANT NEOPLASM

The most spread cancer after 45 years old is breast cancer. Risk factor is even higher when direct familiar precedents are founded. On the other hand, there is no proof there is a relation between breast cancer and obesity.[15] In the last years, mammography has been accepted as a routine check-up for women over 40 years old. Frequency changes on every woman, depending on familiar precedents.

Although cervix cancer is less common than breast cancer in women of 45 years old or higher, it is suggested to practice a papanicolau test once a year or every other year. On the other hand, this test is not necessary for women with a radical hysterectomy.

DIABETES MELLITUS

Age, obesity, and family precedents are the main risk factors. It is proved that diabetes itself is a risk factor for developing cardiovascular disease and stroke. In senior adults, diabetes is the leading cause of blindness, lower limb amputation, and kidney failure.[14] This is why it is important to prevent or delay the onset of diabetes in women, especially if risk factors are higher. For all the senior women is always recommended to prevent overweight and obesity.

Routine tests in adult women are: fasting glucose, quantification of lipoproteins, triglycerides, and uric acid.

STROKE

There has been an increasing frequency of strokes that occur in women with a high rate of mortality and disability. Risk factors include age, genetics, smoking, hypertension, and high cholesterol and triglycerides.[16]

Biochemical markers for detecting the risk of stroke are the presence of C-reactive protein in the blood, high cholesterol and triglycerides, increased PAI-1, and interleukin-6.[17]

It is important to consider risk factors for the most common problems in senior women. Nowadays, life expectancy for women is around 80 years old. That is why women should apply measures that help provide a better quality of life in this stage.

> **“ Socioeconomic status** is the ability to access a set of goods and lifestyle.[18] **”**
>
> - *Heriberto Romo, AMAI 2009.*

Figure 09. Piernas de Barrio. Orianomada / 2005

Socioeconomic status
in Mexico

Socioeconomic status is a consumer segmentation and audience that defines the economic and social capacity of a household. [18]

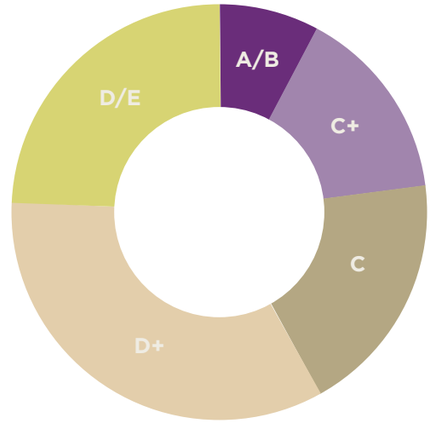
In Mexico, households are classified into six levels. Taking them under consideration, nine characteristics of Mexican homes and schooling of the household head.

Since 1994, the socioeconomic level index of the Asociación Mexicana de Agencias de Investigación de Mercados y Opinión Pública (AMAI) has become the most used criteria for market research in Mexico. The AMAI uses a rule known as 13x6. This means that households are classified into six levels based on 13 variables:

1. Schooling of household head
2. Number of rooms
3. Number of bathrooms with shower
4. Floor type
5. Number of light bulbs
6. Car
7. Boiler
8. Washing Machine
9. VCR/DVD
10. Toaster
11. Vacuum Cleaner
12. Microwave
13. Laptop

Points are assigned to each variable based on the value of family income.[9]

The distribution of socioeconomic levels in Mexico are:



- **A/B** — **7.8%**
  +85,000 MXN (+4.700EUR)
- **C+** — **15.1%**
  35,000 - 85,000 MXN (1.970 - 4.099EUR)
- **C** — **18.9%**
  11,600 - 34,999 MXN (644,00 - 1.970EUR)
- **D+** — **33.9%**
  6,800 - 11,599 MXN (377,00 - 643,00EUR)
- **D/E** — **24.2%**
  0 - 6,799 MXN (0 - 376,00EUR)

Graphic 13. Socioeconomic distribution in Mexico

PRINCIPAL CHARACTERISTICS AND DIFFERENCES AMONG SOCIOECONOMIC LEVELS IN MEXICO[19]

SOCIOECONOMIC LEVEL A / B

This is the group with the highest standard of living and income in the country. It represents only 7% of the population.

Most of them have their own homes with an average of 8 rooms. These homes are built with materials of quality. They have sanitation and running water. The families own two cars on average. The head of the household usually has a bachelor and/or a master degree. Food represents only 7% of total expenditure. The biggest expenses are: education, entertainment, communication, and transportation.

SOCIOECONOMIC LEVEL C +

This is the second layer with the highest standard of living and income in Mexico. It represents 14% of the population

This group has big houses with 5 or 6 rooms, built with materials of quality. They have optimal sanitation and water systems at the home. They own an average of 1 to 2 cars. The schooling of the household head is a bachelor degree. Food represents 12% of total expenditure, while 50% is divided among education, entertainment, cars, and credit card payments.

SOCIOECONOMIC LEVEL C

It represents the 18% of the Mexican population. Their main characteristic is having reached an adequate level of convenience.

75% of them have their own home with 4 bedrooms. Almost all of them have an adequate system of sanitation and water. Over half of them have an automobile. The schooling of the household head is an average of high school. Food represents the 18% of total expenditure, with other expenses in education, entertainment, communications, vehicles, and credit card payments.

SOCIOECONOMIC LEVEL D +

This is the largest and most representative group of Mexican society.

This group has small houses with 3 rooms and cement floors. Almost all of them have bathroom and shower. Only one over four has a car. Middle school is the average education level of the head of the household. The biggest part of the total expenditure is represented by food, transportation, and services.

SOCIOECONOMICAL LEVEL D/E

This is the poorest segment, representing the 25% of the population.

They have a house, but only half of them own it. The houses have 2 rooms, cement and soil floors. One out of four has no bathroom and less than half of them have a shower. The schooling of the household head is usually elementary school. Most of their expenses are on food, transportation, and services.

** Data from: Asociación Mexicana de Agencias de Investigación de Mercado y Opinión Pública*

Graphic 14. Historic evolution of socioeconomic levels in Mexico

HISTORIC EVOLUTION OF SOCIOECONOMIC LEVELS DISTRIBUTION

Almost 80% of Mexicans think of belonging to the middle class. Using only the income of individuals, middle class can range from 30% to 60% of Mexicans.[20] In any case, these studies also indicate that there has been a remarkable growth in the middle class in Mexico from the early 90's to the present.

Half of the Mexicans who were born in a house with one or two rooms now have a bigger house for his family. In addition, change was not only in size but also in quality. From 1970 to the present, houses with drain system increased from 32% to 86%; houses with tap water increased from 59 to 93%, and houses with electricity service increased from 42 to 98%.[21]

In telecommunications and computing, change has been even more evident. Twenty years ago, there were seven phone lines for every 100 of inhabitants, now there are 92 lines for over 100 inhabitants. Computers with internet access increased from 3 to 6 in less than ten years, paid television has grown three times in less than 15 years.[21]

Today, we live in a different country, with a stronger middle class than ever before. Being middle class is not a financial issue, but a consumption factor.

EXPENDITURE ON HEALTH BY SOCIOECONOMIC LEVELS IN MEXICO

Over the past four years, due to the crisis, there was a decline in household spending in Mexico.

In the last four years expenditure on health care and prevention decreased in all the socioeconomic levels affecting especially lower levels because of increasing prices on food, services, and transportation according to the Asociación Mexicana de Agencias de Investigación de Mercado y Opinión Pública (Mexican Association of Research Agencies Dealing with Marketing and Public Opinion).

That means that while an A/B person spends approximately $2,500.00 pesos (140,00EUR) per month; a D/E person spends, during the same period, only $80.00 pesos (4,70EUR).

ANALYTICAL PHASE

02 RESEARCH

Figure 10. Cancer de Mama Clinic. Jackson, Jackie / 2011

Human Centered Design

Human-Centered Design (HCD) is a process and a set of techniques used to create new solutions for the world. Solutions include: products, services, environments, organizations, and modes of interaction.[10]

Human-Centered Design is a process that has been used for the last decade in several organizations to create desirable, feasible, and viable solutions.

Not only women know what they want, people know what they want too. Human-Centered Design not only helps you to connect with people, but also to transform this information into ideas. It is called human-centered because it focuses on the user’s needs, goals, and desires. This is the user we are designing for.

The most important part of this process is what IDEO calls the HEAR phase. During this stage, designers should hear, see, and collect stories, comments. Everything could be used as an inspiration for design. On my design process methodology, the “hear phase” is included within the research stage.

RESEARCH goal

Understanding needs, goals, interests, motivations and frustrations of senior women on an specific geographical zone (Mexico).

RESEARCH methods and toolkits

Choosing the right research methods is very important on a design project. Due to the fact that every challenge is different from another, methods should be too.

For this project, the selected methods were:

- Survey
- Individual interview
- In-context immersion (with photographic record)
- Expert interviews

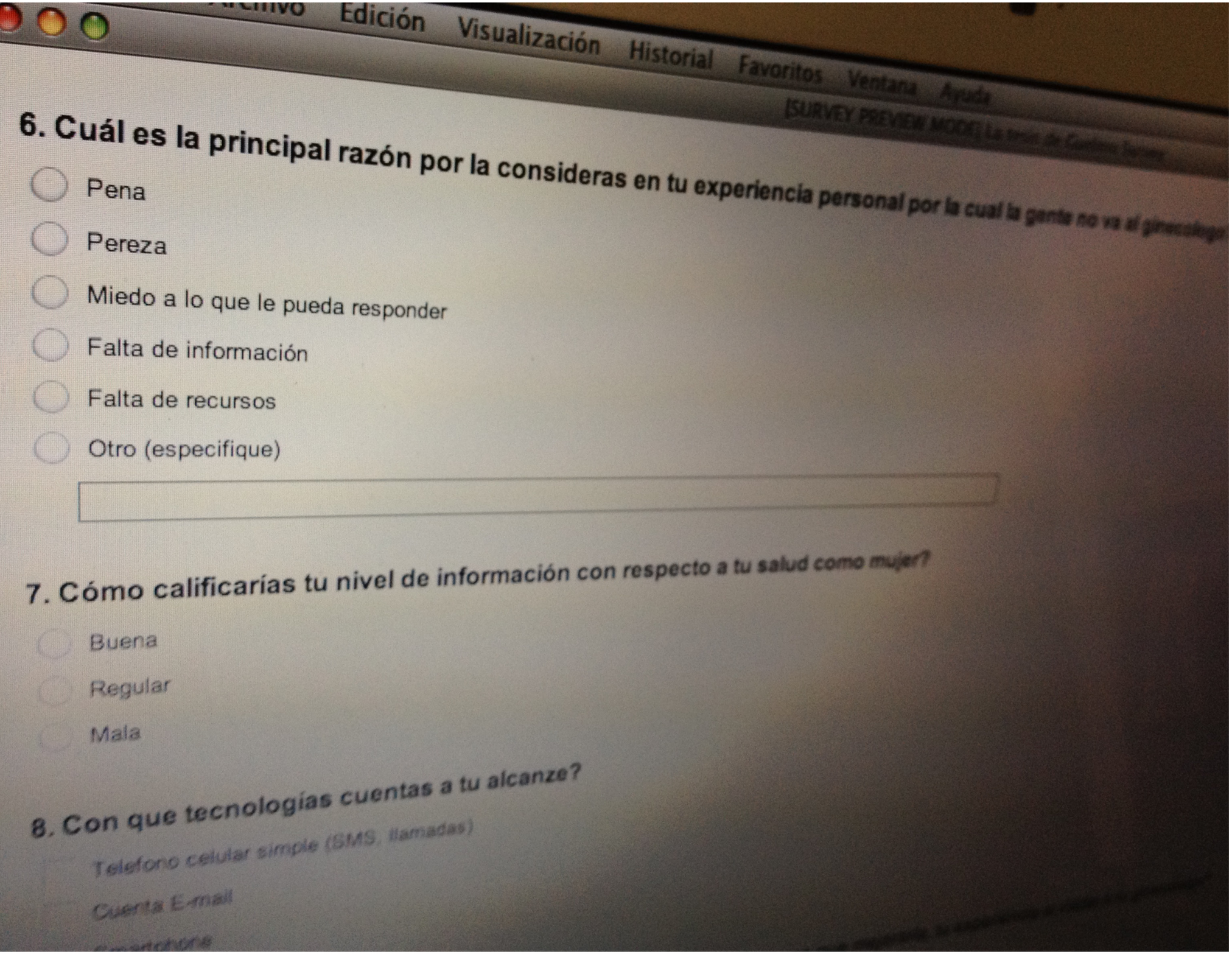


Figure 11. La tesis de Guelmy Survey - surveymonkey.com. Alcocer, Guelmy / 2011

Method 01

Survey

It is a method for collecting quantitative and qualitative information about a certain topic.[M]

Toolkit

It is a surveymonkey.com (free online survey website)[N], e-mail account and a short list of questions.

A web-based survey was applied as a first step to screen possible users and decided the list of topics and questions for the individual/ experts interviews. Thirty five women answered this 10-questions survey divided in three parts: general information, medical information, and technological information.

Some interesting outcomes were:

74% of these women only go to the doctor when they were sick

20% of these women have never visited a gynecologist

42% have chosen their doctors through a friend

The most spread technologies among these women are: SMS messages, low-tech mobile phone, and e-mail.

Figure 12. Interviewed women. Alcocer, Guelmy / 2011

Method 02

Individual Interview

Individual interviews are critical to most designing research, since it enables a deep and rich view into the behaviors, reasoning, and people's lives. If possible, a meeting is arranged to meet the participant at his/her home or workplace, so one can see them in context.[22]

Toolkit
Pen, notebook, vehicle or computer with Skype software.

During November and December, 10 women between 44 and 60 years old were interviewed through phone calls or in-context interviews.

Questions were developed around eight main topics:
- General Information
- Health Level (according to them)
- Information Level about Health
- Medical Visits
- Public and Private Healthcare Services
- Main Health Issues
- Acknowledgement of Family Precedents
- Preventive Actions

Outcomes:
Almost every woman interviewed felt good, therefore they think they are healthy

6 out of 10 have public health care, but only 3 of them use these services.

3 out of 6 who have health care, but they rather visit a private doctor.

1 out of 10 has private healthcare insurance.

Most of the half of the women interviewed have chosen their doctor because of a friend, coworker or family recommendation.

2 out of 10 rather go to their doctor's appointment alone because it is faster.

Instead, others rather go to their doctor´s appointment with somebody because they can share responsibilities.

8 out of 10 answered without any problem about family precedents.

3 out of 10 women think that people do not go to the doctor because of lack of money

4 out of 10 think that people do not go to the doctor because of lack of information

In the next phase, we will analyze the gathered information from a qualitative point of view and transform it into key insights that will work as designing opportunities.

Figure 13. In-context immersion photographic research. Alcocer, Guelmy / 2011

Method 03

In-context immersion

Meeting people where they live, work, and socialize and immersing themselves in their context reveals new insights and unexpected opportunities.[22]

Toolkit
Camera

On December 2011, during a visit to Merida, Mexico, I had the opportunity to carry out in-context immersion to have a better understanding of my user. What do they do? What do they like? Who is around? This can help in the designing process in order to detect some designing opportunities or even stakeholders.

As we can appreciate on the pictures, some normal activities for Mexican women are: grocery shopping, cooking, banking, and spending time with friends and family. We will analyze these activities deeply in the next chapter.

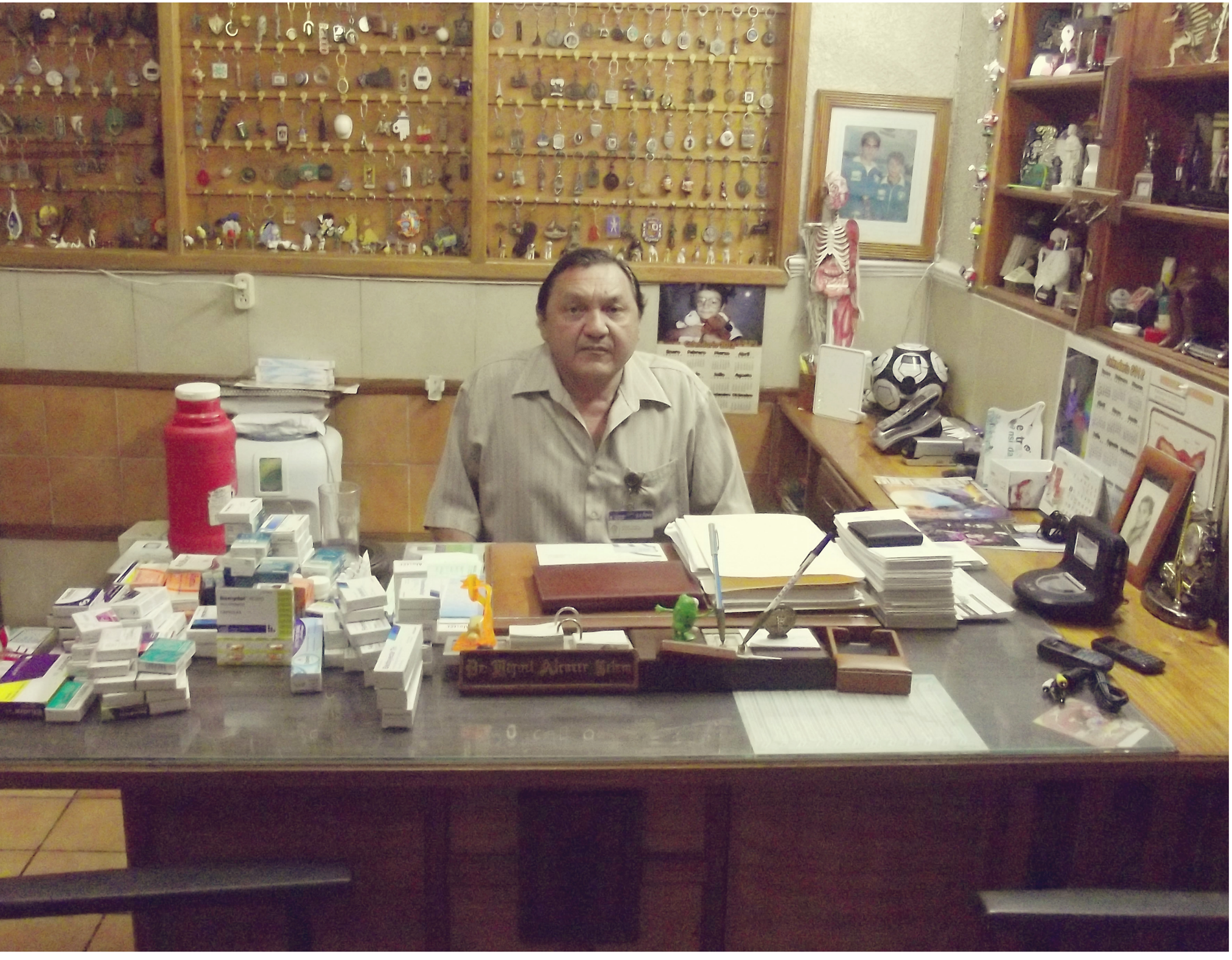


Figure 14. Expert Interview. Erubey Ramayo / 2011

Method 04

Expert interview

Experts can be called upon to provide in-depth and technical information. Reaching out to experts is particularly useful in cases where the team needs to learn a large amount of information in a short period of time.[22]

Toolkit

Pen, Notebook, Vehicle or Computer with Skype software.

For this challenge, medical and technical information is necessary in order to understand healthcare needs for women. Interviewing health specialist was a good way to enter this world. Questions around five main factors were asked to these doctors: principal preventive actions that a senior woman should accomplish (frequency and age suggested), information that a doctor should know about a patient, reasons why they think people do not visit a doctor unless they are sick, main causes why women visit a doctor, and the technology available to them.

According to doctors, these are the principal preventive actions that a senior woman should accomplish:

Preventive action	Women from 40 to 49 y.o.	Women from 50 to 64 y.o.	Women +65 y.o.
General check-up	Once a year	Once a year	At least once a year
Thyroid test	Every 5 years	Every 5 years	Every 5 years
Measuring blood pressure	At least every 2 years	Every year	Every year
Measuring cholesterol	At least every 2 years	Frequency depends on medical record	Frequency depends on medical record
Bone density	Frequency depends on medical record	Frequency depends on medical record	At least once and talk with your physicians about future tests
Measuring blood sugar concentration	Once a year	Once a year	At least once a year
Mammography	Once every one or two years	Once a year	Once a year
Pap test	Once a year	Once a year	Once every one or two years
Test for hidden blood in stool		Once a year	Once a year
Eye examination by ophtalmologist	Once every two or three years	Once every two or three years	Once every one or two years
Ear examination	Once every ten years	Once every five years	Once every five years
Lunar examination	Monthly self-examination. Once a year examination by a doctor	Monthly self-examination. Once a year examination by a doctor	Monthly self-examination. Once a year examination by a doctor
Dental check-up	One or two times every year	One or two times every year	One or two times every year

Table 02. Prevention actions divided by age

The information that a doctor should know about a patient is divided into two categories: 1) medical history that includes pathological precedents, and non-pathological precedents, and 2) a physical examination. The report of these activities is also called Medical Record.

Medical Record[O]
According to the Norma Oficial Mexicana (NOM-168-SSA1-1998) [Mexican Official Ruling] a Medical record is a collection of writings, graphics, imaging of any kind, in which health personnel should write the records, notes, and certificates of their intervention, according to health regulations.

Medical record is compiled with the following information:

General Info
Name
Age
Date of Birth
Residence

Pathological precedents
Childhood diseases
Non-surgical diseases
Surgical diseases
Accidents
Fractures
Blood transfusions
Allergies
Disabilities
Family Precedents (beginning with parents, siblings, and if necessary, with grandparents, uncles, and cousins)

Non-pathological precedents
Habits (smoking, drinking alcohol, exercising, taking drugs, eating)
Vaccines
Personal Hygiene
People or animals at home

Physical Examination
General Inspection
Vital Signs
Examination of head, neck, thorax, abdomen, extremities and genitals

Interviewed doctors did not think that money is the main reason why people do not go to the doctor, but their level of education. They mention Cuba as an example, a poorer country than Mexico but with an incredible health education and system.

As well as the interviewed women, doctors agree that women only get a doctor appointment when they feel sick or instable. There are not preventive-driven actions.

Technology available changes from doctor to doctor based on age or technological background. They agree to offer 24-hour consultation through technological devices: phone calls, SMS, Facebook, BB messenger or even a webcam. They think that being a doctor is to be available to patients.

“Services that were once only available at a doctor’s office or hospital are now available on-demand through low-tech, affordable solutions **”**

– *PSFK Future of Health. August 2010*

Trends

For a designer, it is very important to be aware of what is happening around him/her, in order to create something different and according to the context. This is why we love to find and spot new trends.

It is important to highlight how technology and information are playing an important role in people’s life and how they are receiving health care. It does not matter if people are at home, at a city or in a rural setting.

According to the Research2Guidance Magazine, an estimated 500 million people worldwide are expected to be using mobile healthcare applications by 2015. There were nearly 17,000 health apps available in major app stores in November 2010, with 57% of them being aimed at consumers rather than health care professionals.[P]

The following trends show the latest innovations in the world of physical and mental health.

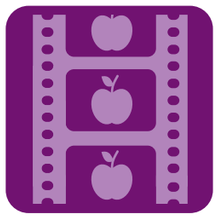
HEALTHY BYTES

This trend consists of sending messages through digital platforms (such as SMS or e-mail) with important information regarding health issues from doctors to Community Health Workers (CHW), to a group with special needs or directly to patients with specific information.

DR. VIRTUAL

These trends talk about remote communication through doctors-patients or doctors-community health workers, also known as tele-medicine. They use devices such as computers, smarthphones or tablets.

This trend can be split into two different areas: Fast personal consultation and Health for everybody, everywhere.



VIDEO SCHOOLING

Educating people through videos that contain important information for them, it can be recorded on different languages for a better understanding for the community. They are played on digital platforms such as computers, mobile phones, smartphones or even tablets.

DR. VIRTUAL

Fast Personal Consultation

It consists of tools for getting quick answers about health, guidance about how to react to some situations and saving time in useless one-to-one consultations doing this through personal devices.

ADD-ONS

This trend consists of adding devices to your mobile phone or computer so it can work as a tool for a basic health examination.

DR. VIRTUAL

Health for Everybody, Everywhere

This one is more about reaching remote areas through technological devices such as computers and an internet connection where there are no specialized doctor or just health community workers with a basic training in order to help people in remote communities.

FolloWell

This trend consists of different methods and tools for measuring, monitorizing, visualizing, and tracking our health.

Health is a game!

This trend talks about introducing games in order to encourage healthy habits or healthcare needs. This trend follows the rules: setting an objective, rules, a feedback system, and participation.

I'm with you!

To use platforms in order to create communities that support themselves in case of life-changing conditions (emergencies, diseases...). They support each other, share information and strategies to apply.

MoodMap

Nowadays, emotional health is as important as physical health. That is the reason why so many people are taking care of emotions through tools like mapping or using technological devices to help people's mood.

DYI diagnosis

This trend talks about tools for making an auto-diagnosis before going to a health worker. It may include the use of technological devices.

Story-telling Objects

This trend talks not about a new idea but a new way of applying it. People used to tell stories in order to increase the emotional attachment to a product, but this time, the product itself is going to tell its own story.

Kind-Sharing

This trend talks about unexpected acts of kindness to people you care about using online tools. A gift to friends through cell phone or tokens of appreciation for somebody that helped you can be just some examples we can find.

At the same time, we can divide these trends into categories that will help us analyze the next step: study cases.

The first group is formed by: Healthy Bytes, Video Schooling, and Story-telling Objects. This category can be named as **INFORMATION CONTAINERS.**

Why information containers? Because it doesn't matter if they are bytes, frames or 160 characters they are containing important information that sooner or later is going to arrive to the final user.

Why information containers? Because it does not matter if they are bytes, frames or 160 characters, they are containing important information that sooner or later is going to reach the final user.

The second group is formed by: Dr. Virtual (two versions), I'm with you, and Kind-Sharing. This group can be called **PEOPLE CONNECTORS.**

Through platforms, electronic devices, vending machines, and human contact, these trends are connecting people all over the world. It can be for a serious reason or even just to make others smile, people are coming together to create something bigger than themselves.

FollowWell and MoodMap are part of the third group, the **TRACKING TOOLS.**

Exclusively through platform or apps, these tools help individuals to track symptoms, moods, exercise or eati The last group is formed by: Add-ons, Health is a game, and DYI diagnosis and they are **REALITY SWITCHERS.**

A reality switcher can change a simple mobile phone into a first aid device, or a personal computer into a sophisticated medical device, or even better, change reality into a game where you can be the main character.

Trends identified during this project and the following study cases used to explain them are the result of the innovation taking place around the globe.

Figure 15. Text in the city. Photo taken from PSFK report Future of Health / 2010

CASE STUDY 01

Information Container

TEXT IN THE CITY

Mount Sinai Adolescent Health Center

http://textinthecity.posterous.com

Trends: Healthy bytes and Dr. Virtual

Mount Sinai Adolescent Health Center created a program in partnership with a mobile company named "Text in the City." This program provides information and education about health issues to teenagers through one of their principal means of communication: SMS. This service offers also questions and answers, reminders and weekly SMS with essential information.

Where?
New York, USA

Motivations
Provide a free and reliable health education platform for teenagers in a friendly and anonymous way.

Figure 16. Joyce Ndago and Maria Nuela, two MoTeCH field staff. AppLab / 2010

CASE STUDY 02

Information Container

MoTeCH

Grameen Foundation, Columbia University's Mailman School of Public Health and the Ghana Health Service

http://www.grameenfoundation.applab.org/section/ghana-health-worker-project

Trends: Healthy bytes and Dr. Virtual

Funded by a grant from the Bill & Melinda Gates Foundation, the Mobile Technology for Community Health (MoTeCH) initiative is a collaboration of Grameen Foundation with Columbia University's Mailman School of Public Health and the Ghana Health Service. MoTeCH uses mobile phones to increase the quality of neonatal and prenatal care in rural zones of Ghana.

The 2-years project delivers important information through mobile phones. Pregnant women register themselves by providing their phone number, the name of the area in which they live, their estimated due date, and their language preference. They will then begin receiving SMS and/or voice messages that provide information about their pregnancy, the location of the closest health facility, and specific treatments that they should receive during their pregnancy

Where?
Ghana

Motivations
Provide relevant health information to pregnant women and encourage them to seek prenatal care from local facilities and help community health workers identify women and newborns in their area in need of healthcare services

Figure 17. Women watching videos from First Day Project. Photo taken from PSFK report Future of Health / 2010

CASE STUDY 03

Information Container

FIRST DAYS

Berkeley Institute of Design

http://www.cs.berkeley.edu/~divya/research/firstdays/overview.html

Trends: Video school and I'm with you

Two parallel projects developed by the Berkeley Institute of Design use the power of mobile video in which healthcare workers go home to home in India in order to show short videos to their patients and explain different topics such as maternal health. They also created a Youtube channel where people talk about their experience. It brings this way a one-to-one feeling.

Where?
India

Motivations
Helping Accredited Social Health Activists to engage their patients in discussions about various topics related to maternal health.

Figure 18. Texting. Smith, Allen / 2012

CASE STUDY 04

People Connector

TRUTH ON CALL

http://www.truthoncall.com/

Trends: Healthy bytes and Dr. Virtual

This San Francisco-based company gathers a team of health specialist to answer questions through SMS. Government, pharmaceutical executives and doctors are their target. This service encourages collaboration between healthcare providers during difficult situations.

Where?
San Francisco, USA

Motivations
Connecting industry directly to the source of knowledge. Encourage collaborations

Figure 19. Virtual medicine as effective as physical doc visits. Mearian, Lucas / 2011

CASE STUDY 05

People Connector

HELLO HEALTH

http://hellohealth.com/patients/

Trends: Dr. Virtual Fast personal consultation

This web-base service offers online scheduling, prescription renewal, personal health records, and secure instant messaging, video visits and privacy of information, all in one tool.
You can save time with this service through the video visits from home or work, as it is shown on their video.

Where?
USA

Motivations
Engage people on their own health administration. They are given the tools and the staff to do it.

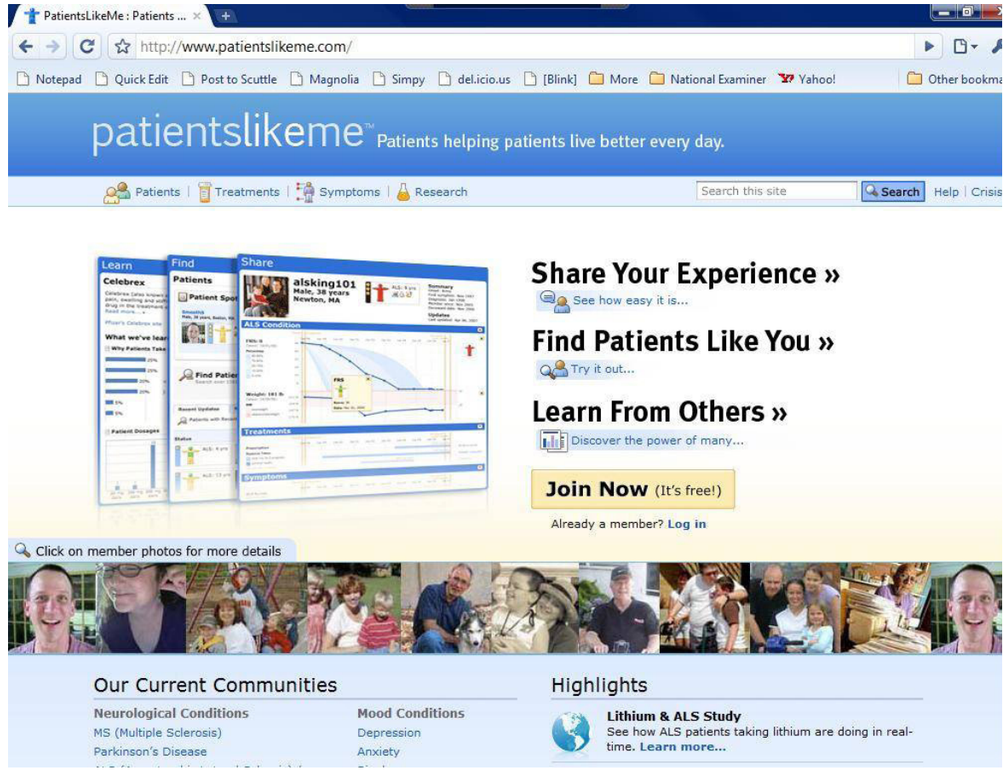


Figure 20. Patients like me website / 2012

CASE STUDY 06

People Connector

PATIENTS LIKE ME

http://www.patientslikeme.com/

Trends: I'm with you

This is a website that allows patients with life changing conditions to communicate with people passing through the same situation. It also allows the patients to share experience and strategies on how to overcome certain situations related to their conditions. Users can learn from first-hand experience how to deal with sickness.

Where
USA

Motivations
Taking away geographic boundaries and learning from people how to deal with some conditions that maybe people around do not know how to do it.
.

Figure 21. NIKE+ GPS app. Andy D. / 2011

CASE STUDY 07

Reality Switcher

NIKE+

Nike

http://nikerunning.nike.com/nikeos/p/nikeplus/es_MX/

Trends: Health it is a game!, Story-telling objects, FolloWell and I'm with you

Nike launched this eco-system in September of 2010. This system connects a small accelerometer attached to or embedded in a shoe. It communicates with either the Nike+ Sportband, a receiver plugged into an iPod Nano, or directly with a 2nd, 3rd, or 4th Generation iPod Touch, iPhone 3GS or iPhone 4 in order to register all your runs. Nike+ has also a website where you can log in social networks and participate in competitions with friends encouraging healthy habits.

Where?
Worldwide

Motivations
Create an alternative reality through a challenge where you are not just running, you are competing against your friends and the runners around the world.

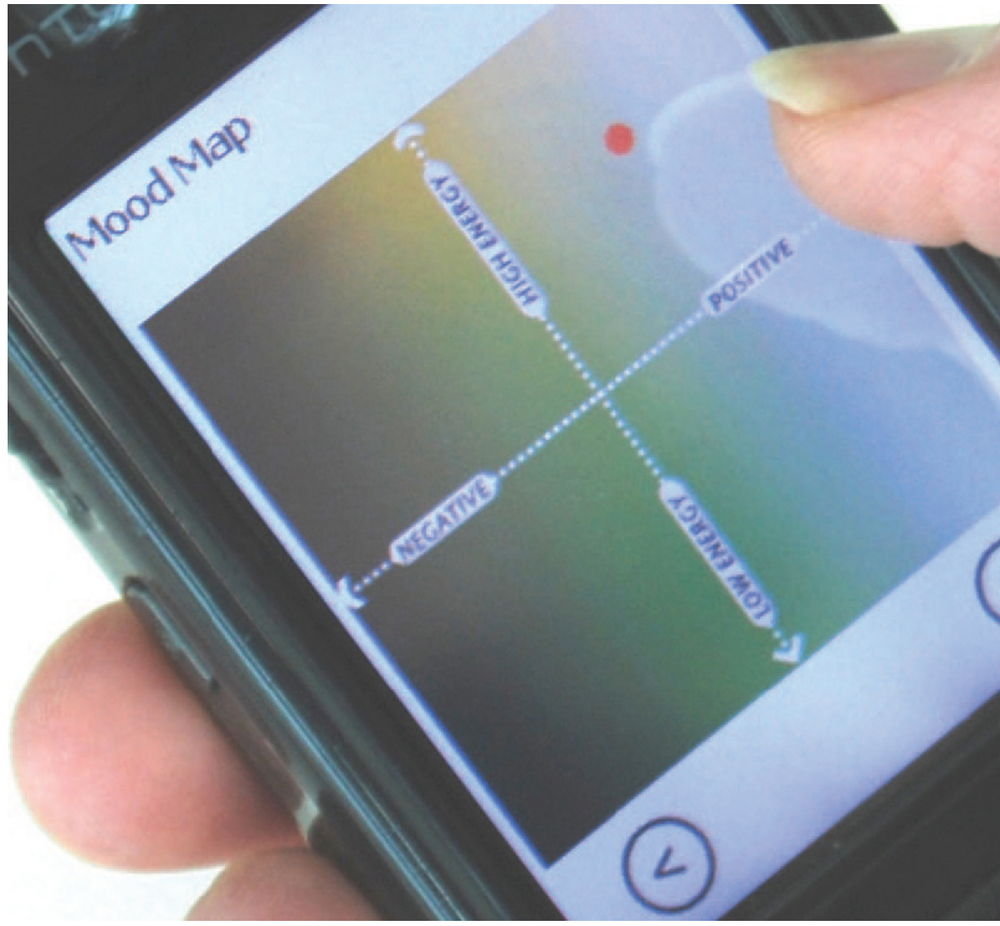


Figure 22. Intel app. Photo taken from PSFK report Future of Health / 2010

CASE STUDY 08

Tracking Tools

MOBILE THERAPY

Intel

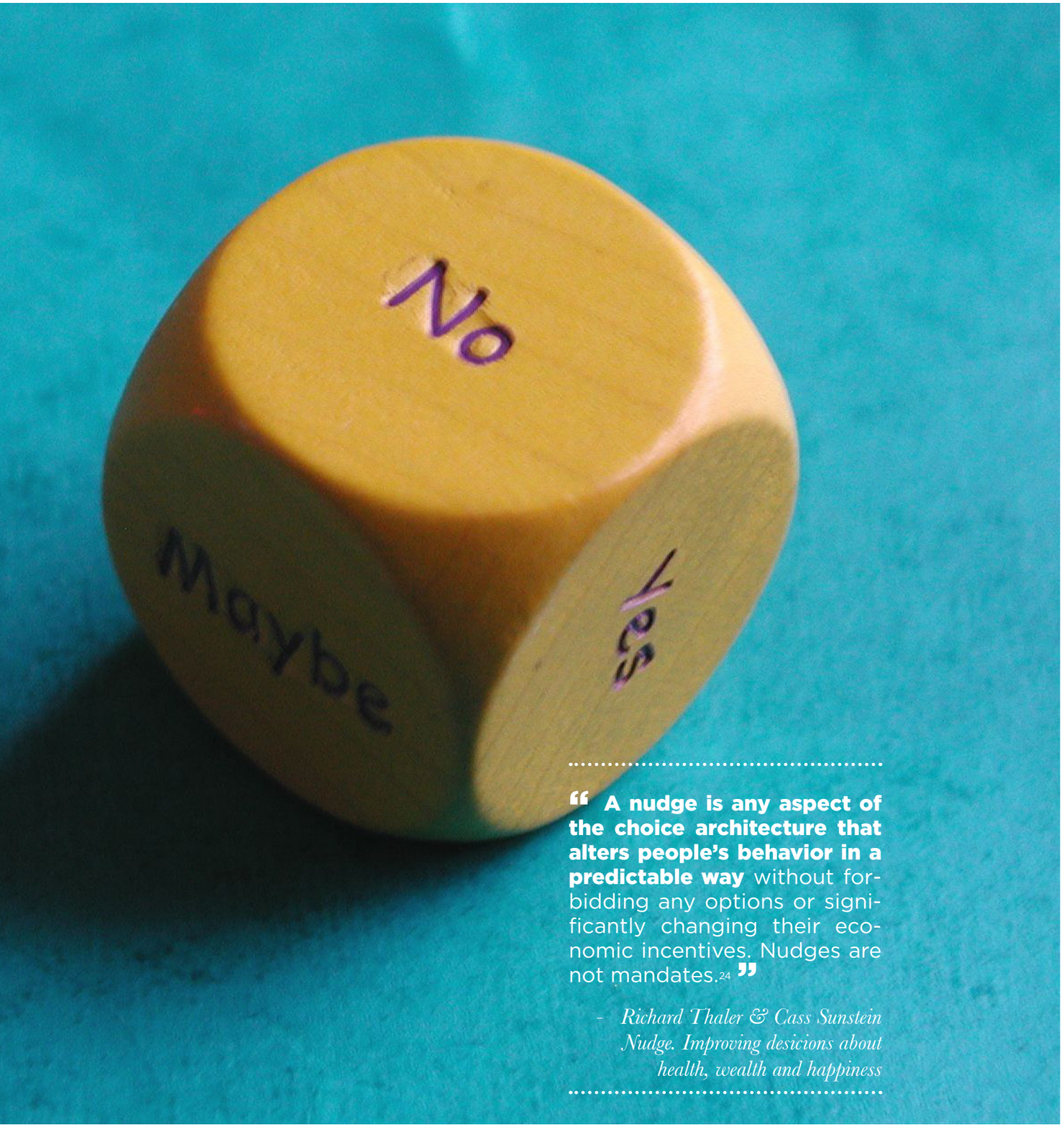
http://www.mhealthjournal.com/196642/mhealth-summit-2010-intel-pavillion-tech-demos/

Trends: FolloWell

Intel has developed an application called "The Mobile Therapy". It works by displaying a "mood map" on user's cell phone randomly during the day. Based on the information given by the user, the application suggests therapeutic exercises (breathing, stretching, among others) with the aim of improving their mood.

Where?
USA

Motivations
Helping people through stressing situations and bringing psychotherapy concepts to people that in other ways cannot have access to it.



> **“ A nudge is any aspect of the choice architecture that alters people’s behavior in a predictable way** without forbidding any options or significantly changing their economic incentives. Nudges are not mandates.[24] **”**
>
> *- Richard Thaler & Cass Sunstein*
> *Nudge. Improving desicions about health, wealth and happiness*

Figure 23. Indecision dice. Heinrichs , Anne-Lise / 2007

The power of a nudge

There is a point where behavioral economy and psychology converge, where this kind of economy studies the effects of social, cognitive, and emotional factors on the economic decisions of individuals and institutions, and the consequences for marketing prices, returns and the resource allocation.[Q] Traditional economic treats humans as if they know what they need. The problem begins when we discover that: we are not like that. Usually, we eat too much (sometimes because a McDonald’s cashier offers us a “great” deal), we drink too much, we choose watching TV over going to the gym, or we do not save enough money. But what if rather than leaving people to decide or giving them a list of “dos and dont’s,” we use a libertarian paternalist point of view. In other words, helping people make the choices they would make for themselves. But unlike ‘hard’ paternalists, who ban some issues and mandate others, the “softer” one aims only to skew your decisions, without infringing greatly on their freedom of choice.[R]

According to Thaler, Sunstein and other behavioral economists, they want to highlight the best option, while still leaving all the bad ones open. They say it is better for everyone to be automatically enrolled in a pension scheme or organ donation, but giving them an option to get out of it. Sunstein and Thaler in their book Nudge say: “choice architecture can guide, or nudge, people toward making better choices. A nudge is a way of organizing and presenting choices ‘that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives.’”[24] To count as a nudge, the intervention must be easy and cheap to avoid.

In order to be considered as a nudge, the intervention must be easy to avoid.

A nudge can make all the difference, setting up the decision in the way people can act in their best interest, without interfering with their freedom of choice.

Choice architecture describes the way in which decisions are influenced by the way the choices are presented. It is by arranging the choice architecture in a certain way that individuals can be nudged in a certain way without taking away their freedom of choice. A simple example of a nudge can be placing healthy foods in a school cafeteria at eye level, while putting less healthy junk food in harder to reach places. Individuals are not prevented from eating whatever they want, but arranging the food in that way has the effect of decreasing consumption of junk food and increasing consumption of healthy foods.

Thaler and Sunstein also set the status quo bias, as a nudge that companies are being using for

the last years. This is when people are very likely to continue a course of action since it has been traditionally the one pursued, even though this course of action may clearly not be in their best interest.[24] An example of the status-quo bias at work is when magazine companies offer trials of their magazines samplers for free, but then, after the trial has ended, companies continue sending magazines and charging the customer until he or she actively ends the subscription. This leads to many people receiving and paying for magazines they do not read. But, what if we applied this principle to use people's apathy in order to do something about their health automatically?

Another interesting principle set by Thaler and Sunstein is the herd mentality. We are very influenced by other people's actions. There is a famous study guide by Solomon Asch using peer pressure.24 A group of young people was asked to answer some obvious questions about the length of two lines. The lines are clearly different but peer pressure make people answer that the lines were of the same length even if they know this was false. Herd mentality influenced their answers. How many times have we had made things just because our friends have done them before?

We, as designers, should understand the power of nudging people and become choice architects. We have to organize the context in which people make decisions and guide them to make better choices. The use of behavioral principles could help us help people in different aspects of life.

CREATIVE PHASE

03 SYNTHESIZE

> “ Quantitative and qualitative methods help project designers better understand **what people desire, how they think, and what they do.**[26] ”
>
> – *Fabio Sergio, Materials for Design October, 2009*

Figure 24. Maya women in hipiles next to a Day of the Dead altar. Photo courtesy of Xcaret/2010

User Analysis
Mexican Senior Women

As we can see in the previous chapter, it is not the same thing to be a woman in Europe than in Africa or in Mexico. We can talk about 5.3 millions over 55 million women living in Mexico.

Seven out of ten Mexican women are part of the Mexican working force within the public sphere. Mexican women are workers, nurses, alarm clocks manufacturers, cooks, maids, teachers, babysitters, coachers, guardians, psychologists, and taxi or bus drivers, etc.

During the research phase made for this project, we discovered some of the daily, recreational activities and context of our middle-class user. Usually, women are in charge of the housework but not always of the household management. Activities such as cleaning, cooking, buying groceries, paying bills, taking care of children or older people are some activities that not-working women perform every day. You can see these women at banks or spending Wednesdays in the supermarket taking advantage of the discount day.

In Mexico, working mothers usually get help from family by taking care of the children. This role changes when these children grow up and need help from seniors to take care of their own children themselves. Working women can also get external help to clean, cook or do the laundry. There are women, often coming from rural area, that help these women do the housework. These women commute everyday to sustain their families. Family is the most important aspect of their life for all these women and they help their family whether bringing extra money home or just by being there all day in order to take care of the house. The Mexican family is often a patriarchy, where men are the head of the household.

Groups of reunited women are very common in different contexts, from the high-class women having coffee with friends to groups of women sitting outside their home talking.

Almost every woman’s activity is for the sake of her family and the reason behind this may be the main characteristic of women: the ability of giving life.

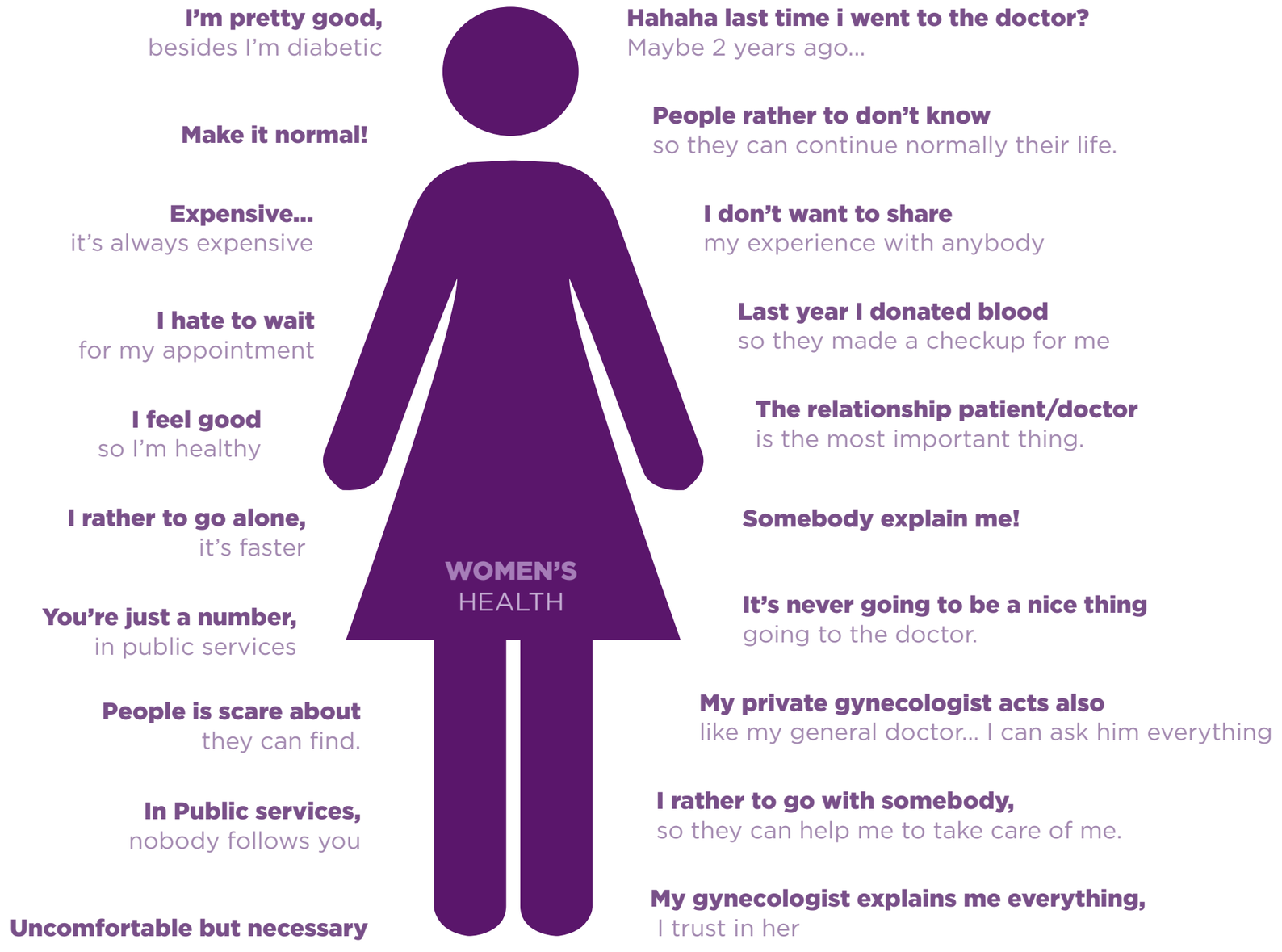
User Analysis
Key Insights

Insights are revelations – the unexpected things that make you sit up and pay attention.
- IDEO

The research phase is completed if in this phase we are capable to identify patterns, themes and relations on the collected information. This can be difficult, but these links and relationships among them will lead us to real solutions for the problems.

Discovering insights from collected information is like unveiled hidden information behind user's answers. This hidden information can give us a new perspective for our project.

There are twenty key insights that we extracted from interviews and observation made for this project. This includes surprising, interesting, and important information which can uncover a path to follow in this designing challenge.



Graphic 15. Key insights

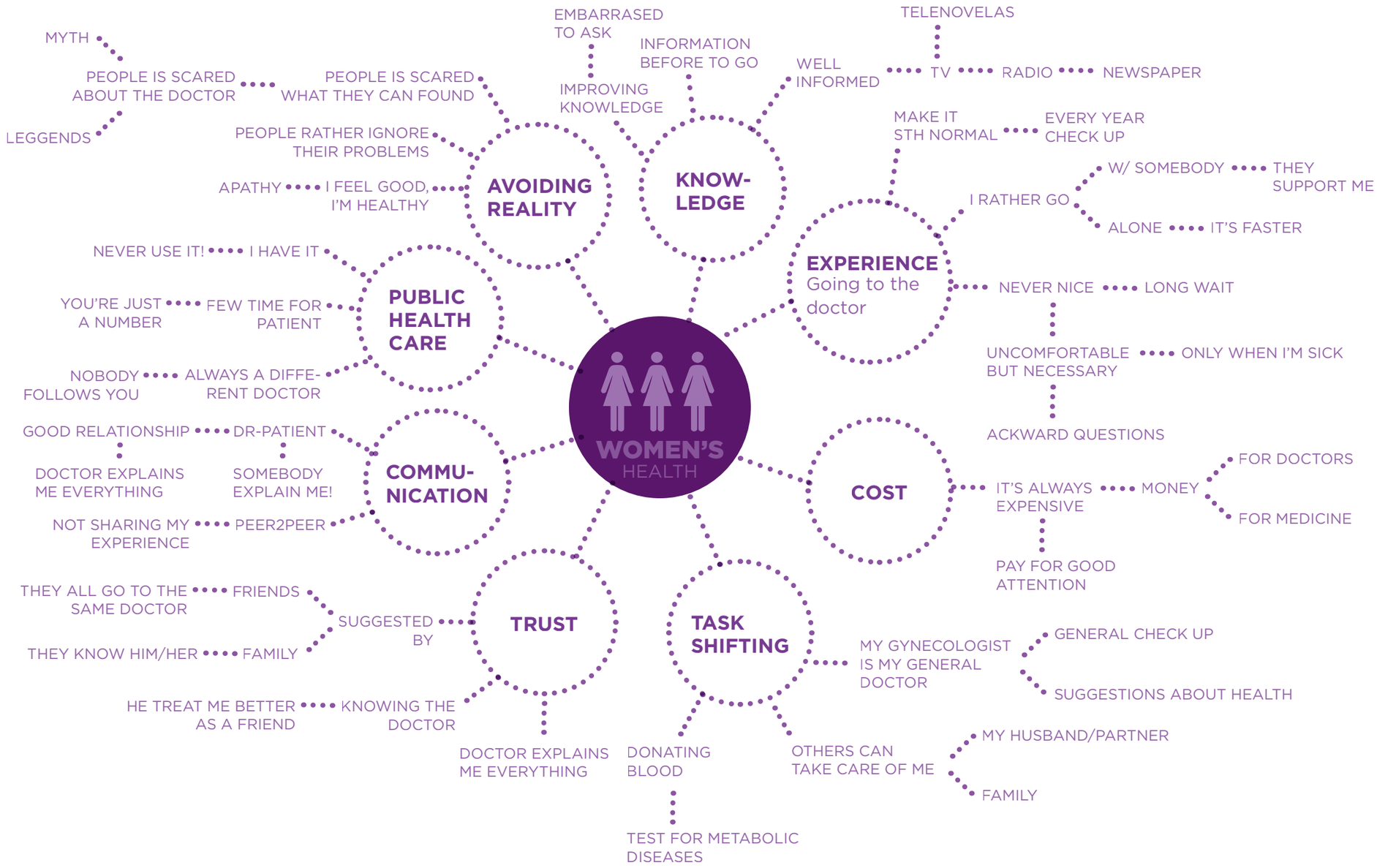
User Analysis
Mind Map

Once we have discriminated details from interviews and observation, we start to discover some links among the gathered information. We are able to cluster these findings into themes or big thoughts to create a MIND MAP.

A MIND MAP is a tool to represent ideas around a central key word. Mind maps are used to generate, visualize, structure, and classify ideas, and as an aid to study and organize information, solving problems, making decisions, and writing[5]

Designers use mind maps as a guide through the learning subject besides giving a quick overview about the topic.

As we can appreciate on graphic no. 16, we have eight information clusters that summarize what is important about senior women health.
THE EXPERIENCE: Feelings, wishes and thoughts about the doctor's office appointment experience.
COST: They think health is expensive in every way.
TASK SHIFTING: Changing roles of people or even changing actions to have another aim.
TRUST: Mechanisms that women use or need in order to be comfortable in a doctor's office.
COMMUNICATION: This theme has two different perspectives: from the patient-doctor relationship and communication to peer communication.
PUBLIC HEALTH CARE: Feelings and thoughts about Mexican public health care situation.
AVOIDING REALITY: Why people do not go to the doctor´s office according to the women's perspective.
KNOWLEDGE: What women would like to know and mean.



Graphic 16. Mindmap

User Personas incarnate the motivations, goals and desires of end-users identified during the research phase.[26]

Personas are fictional characters created to represent the different user types within a targeted demographic, attitude and/or behavior set that might use a site, brand or product in a similar way.[25]

The aim of creating personas is to allow designers to get to know users, as they were close friends or family. All personas should be named and photographed to help us humanize them.

In this case, our five personas were synthesized from data collected from observation and interviews with users. However, important information was also gathered from alternative sources (experts interviews).

“ I have to give back to the society,
not everybody
is as lucky as I am. **”**

Figure 25. Josefina. Gettyimages / REB Images

Persona 1

JOSEFINA
The Socialitè

BACKGROUND
Age: 65 years old
Socio Economical Status: High (B)
Civil Status: Married
Education: College
Occupation: Housewife
Hobbies: Going out with friends, reading books, and newspapers, going to church, and the mall.
Technological devices: Mobile phone with photo camera and Internet connection.
She is a mother of two sons and a daughter.
She lives at the Country Club.
She is a member of a Social Club.
She is very active socially, from the social club to church.
Her husband is a retired manager from an important company.

MEDICAL BACKGROUND
She has diabetes, so she does check-ups regularly with private doctors.
She has private medical insurance.
Physically active
She drinks socially and smokes regularly.

GOALS
To socialize
To keep family together

NEEDS
Being healthy
Exercise
Quit smoking

“ I need to give my family the opportunities,
I did not have **”**

Figure 26. Lupita. Ronnie Kaufman/Larry Hirshowitz

Persona 2

LUPITA
The Struggling Survivor

BACKGROUND
Age: 48 years old
Socio Economical Status: Low (D+)
Civil Status: Single
Education: Elementary School
Occupation: Domestic staff
Hobbies: Watching TV, reading magazines and newspapers, going to church.
Technological devices: Basic mobile phone
She is a single mother of a grown-up son.
She lives in a suburban area and she commutes every day.
She works for a wealthy family.
Sometimes, she also takes care of her granddaughter.
She gets economical help from her grown-up son.
Her son and granddaughter are the most important people in her life.

MEDICAL BACKGROUND
She feels good but she does not know if she is healthy or not.
Not physically active
She is a member of a government social security service (Seguro Popular) but she tries not to go because it is always crowded and the medical staff is not always polite.

GOALS
Being accepted by others
Educate well her son

NEEDS
Have a better medical attention
Understand medical information
Manage the money in order to end the month without revolving debts.
Not being alone.

“ I always have some money saved for emergencies, you never know. **”**

Figure 27. Patricia. Gettyimages / Fuse

Persona 3

PATRICIA

The Money Ant

BACKGROUND
Age: 50 years old
Socio Economical Status: High medium (C+)
Civil Status: Divorced
Education: Graduated from college
Occupation: Housekeeping
Hobbies: Go out with friends and family, watching TV, reading books and newspapers, going to church
Technological devices: Basic mobile phone
She is a mother of two grown-up children
She receives a pension from her ex husband
She takes care more of others than of herself.
After the divorce, she had enough free time for doing more things.

MEDICAL BACKGROUND
She is a healthy woman
Physically active
She only goes to the doctor when she does not feel well.
She does not have a medical insurance; she is always treated by private doctors.
She is asocial smoker
She drinks alcohol socially

GOALS
Socializing
Keeping family together, healthy, and safe
Getting more quality with less money

NEEDS
Managing money in a better way
Being Healthy
Saving money
Self-esteem
Guidance
Being active
Keeping occupied

“ I’m so sure the doctor is wrong, that I need a second opinion **”**

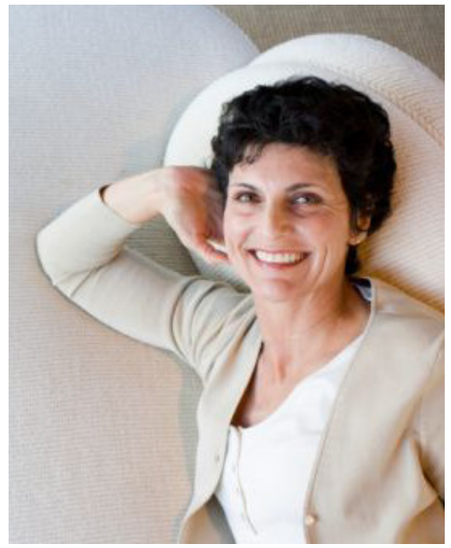


Figure 28. Miriam. Gettyimages / Fuse

Persona 4

MIRIAM

The Hypochondriac
Self-centered

BACKGROUND
Age: 58 years old
Socio Economical Status: Medium (C)
Civil Status: Married
Education: Master
Ocupation: A retired teacher
Hobbies: Watching TV, reading books and magazines, going out with friends, traveling.
Technological devices: Basic mobile phone
She is a mother of a teenager and a grown-up son.
She takes care of herself more than she does for others.
She cares too much about health problems to the point to make them even bigger.

MEDICAL BACKGROUND
She has cholesterol problems and related issues.
She goes often to the doctor sometimes even without a reason.
She has health insurance from her work, but she goes to private doctors to get a second opinion.

GOALS
Socializing
She wants to have a simpler and relaxing life after working for 30 years.

NEEDS
Self-esteem
Guidance
Control Information

> **“ I need a 48hrs day** to do everything I need to do **”**

Figure 29. Ana María. Gettyimages / Larry Dale Gordon

Persona 5

ANA MARÍA

The Bare Necessities
Daughter, Wife and Mom

BACKGROUND
Age: 43 years old
Socio Economical Status: Medium (C)
Civil Status: Married
Education: College
Occupation: Public accountant
Hobbies: Watching TV, magazines and newspaper, going to the mall.
Technological devices: Mobile phone with photo camera and Internet connection.
She is a mother of an underage child
She is the health's manager of her family and parents.
She has no time for herself

MEDICAL BACKGROUND
She had has minor medical problems in the past but now she is fine.
She does not go the doctor because she has no time.

She has healt insurance from her job but due to big health issues, as surgeries, she rather save some money and goes to private doctors to receive a better attention.

GOALS
Keeping family together, healthy, and safe
Earning enough money to have a better life
Offering her family better opportunities

NEEDS
Being healthy
Having Time for herself
Self-esteem
Guidance
Trust-worthy source of Info
Help on managing

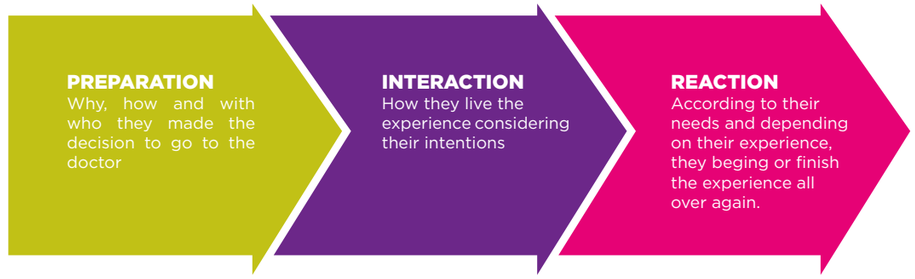
Customer Journey

Customer Journey Map is a method of visually representing the actual and everyday user experience of a service. Mapping journeys is one of the simplest and most useful approaches to understand services, gaps in service, and to identify and design opportunities for improvement and innovation. The mapping, representation and analysis of a journey -an experience over time- have many functions and can be applied to service design and innovation at various stages.[T]

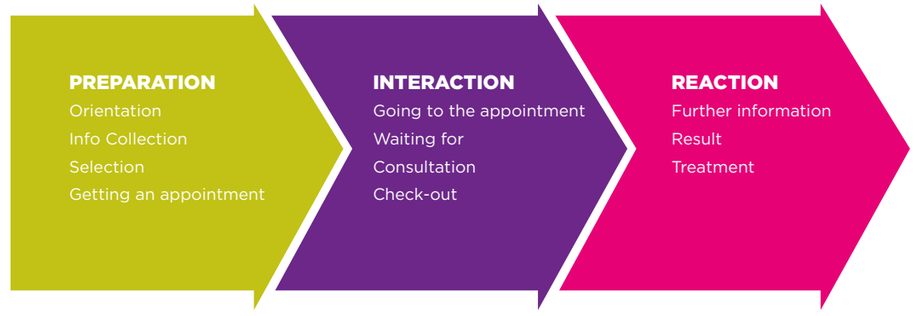
Customer Journey allows us to map in a same place: personas, intentions, motivations, stakeholders, touch points, and the interactions among them. This user-centered approach is helpful in redesign service designs because it reveals real formal and informal data from touch points and stakeholders.

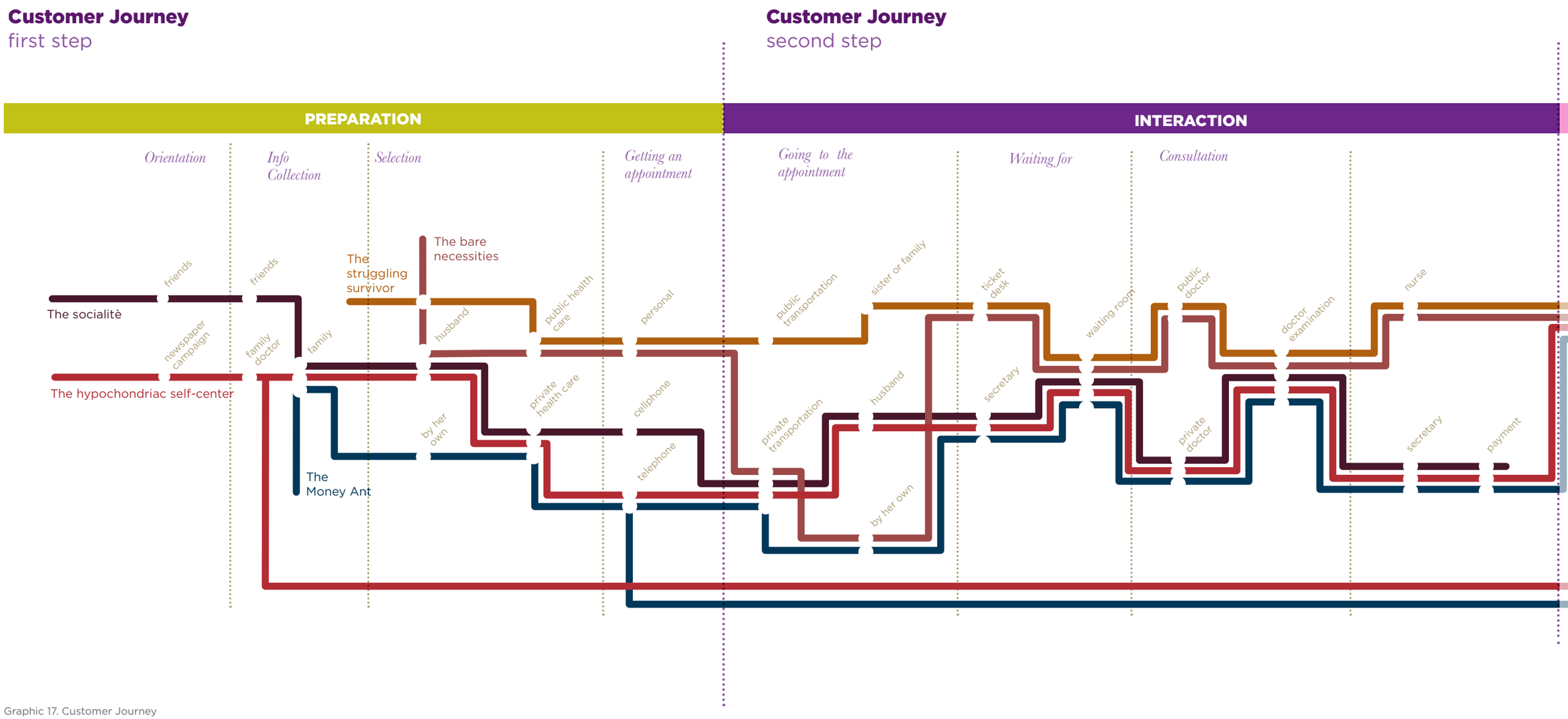
For this project, we have divided the journey into three steps: 1) Preparation, 2) Interaction, and 3) Reaction. At the same time, these steps are subdivided into several categories.

CUSTOMER JOURNEY STEPS

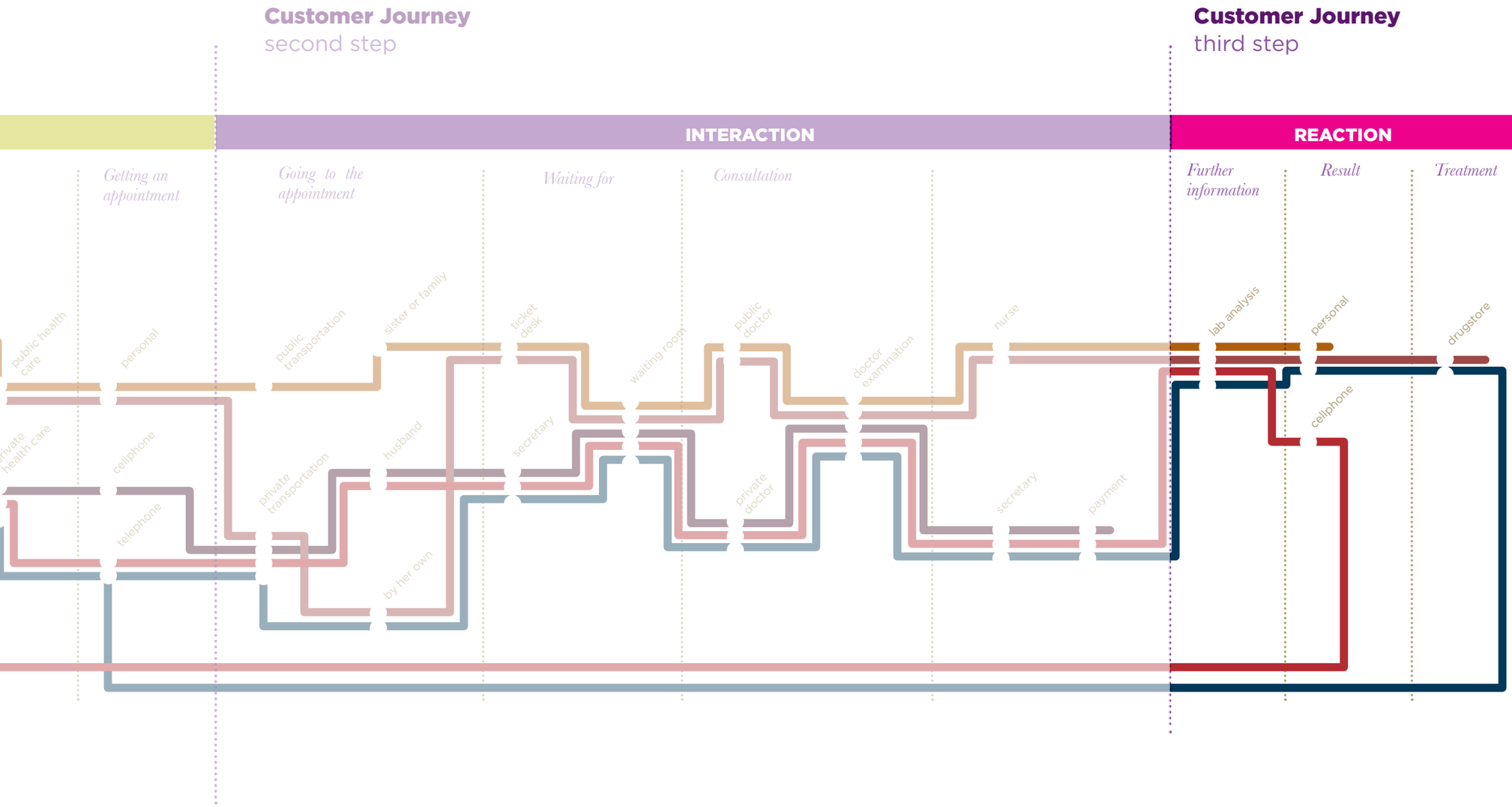


CUSTOMER JOURNEY STEPS AND CATEGORIES



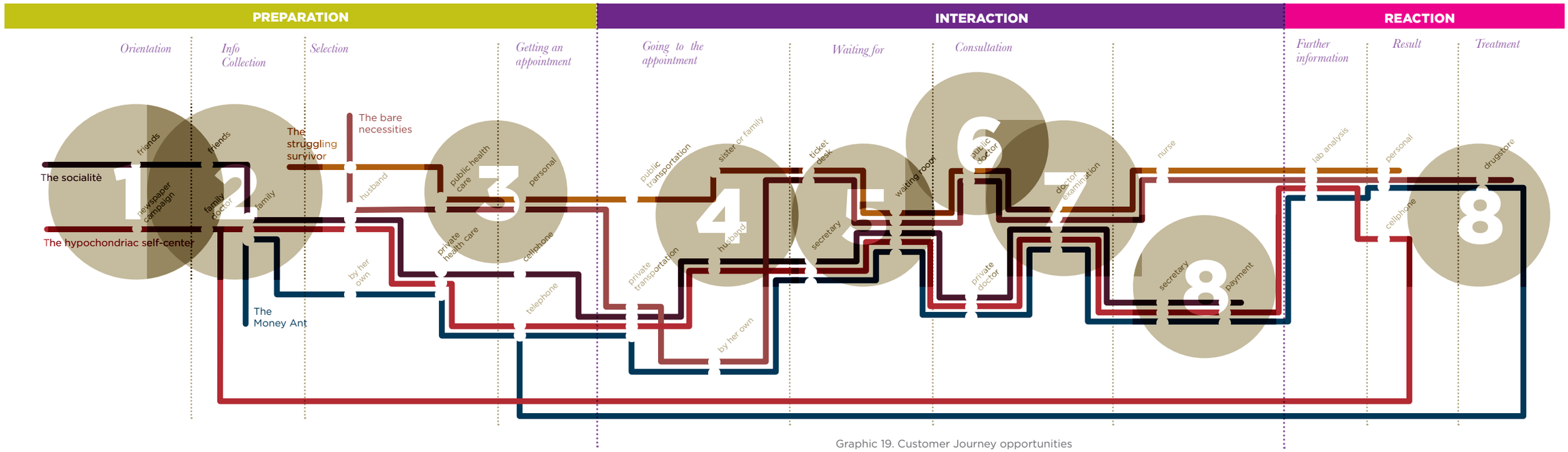


Graphic 17. Customer Journey



Graphic 18. Customer Journey

Customer Journey
Recognizing Opportunity Areas



Graphic 19. Customer Journey opportunities

1 **ORIENTATION** is not arriving to all the personas

2 **INFO COLLECTION** Not always there is a professional advice

3 **GETTING AN APPOINTMENT** Long lines to get an appointment on public health services

4 **GOING TO THE APPOINTMENT** is sometimes a collective experience

5 **WAITING** is something that everybody hates about going to the doctor

6 CONSULTATION in Public Health services you are just a number

7 CONSULTATION can be a bad experience if staff is not professional enough

8 PRIVATE MEDICINE AND TREATMENT can be expensive and one reason why people do not finish their treatment on time

Problematic Areas within Mexican Public Health Care Services

Figure 30. Public hospital. Alcocer, Guelmy / 2011

Figure 31. Patients' medical records. Alcocer, Guelmy / 2011

Overcrowded Public Health Care Services

As we have seen in the first chapter, Mexican public health care services are not enough for the amount of affiliated people.

Hospitals show a wide deficiency due to saturation, lack of medical staff, and shortage of medicines. The implementation of Seguro Popular made this situation even worst. Mexican government offers this service but does not invest in medical staff, medical facilities or medicines.

Receiving a simple laboratory test result can vary from 48-hours (maximum time for a private lab) to 720-hours, this means that users could wait almost for a month to get their results.

People like numbers

During our photographic research on public health care institutions in Mexico in the consultation area, we found these folders with numbers. These numbers are not other than patients, patients with names, age and a family, but for our institutions they are not more than numbers.

Doctors working for public institutions have to fill out a specific number of consultations everyday, this means that even if they want to offer a service of quality to users, they do not have enough time because there are other 38 users waiting for him.

Long wai(s)ting time

Users have to arrive to public hospitals very early in the early morning in order to get an appointment no matter the weather outside. Every day, long lines can be seen in every public hospital. Users affirm that arriving early is the only way to get a place and get a service from medical staff.

This situation is seen as "normal" for medical authorities, who does nothing to fix it.

Important information hidden behind things

Public health care services give a great importance to valuable information like this. A hand-made poster hidden behind a water bottle is only an example of a "public campaign" for breast cancer. In this poster, they explain what it is, why and what you need to do in order to prevent it or detect it on time. But a hidden poster behind things is not the best way to communicate. Maybe the government could ask: why these kinds of programs are not working for everybody?

Figure 32. Public hospital reception. Alcocer, Guelmy / 2011

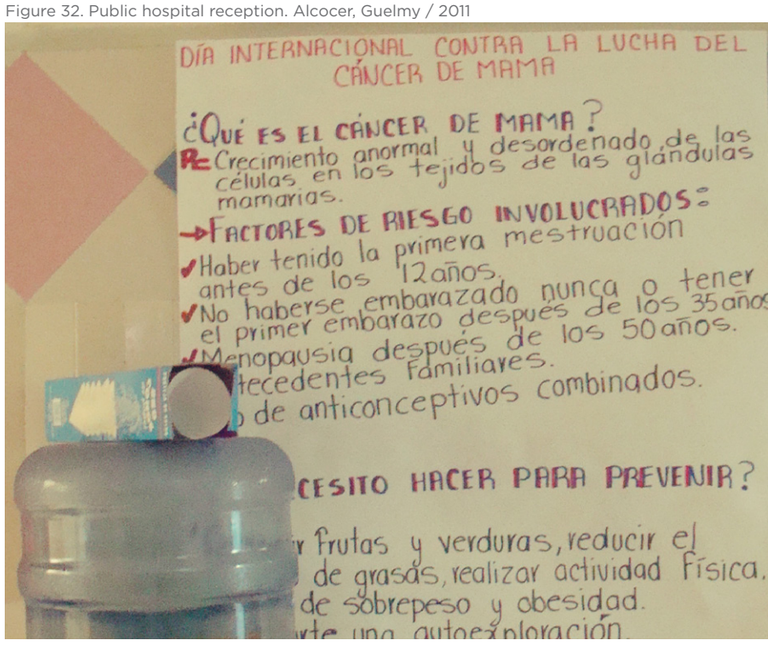


Figure 33. Information available. Alcocer, Guelmy / 2011

CREATIVE PHASE

04 DEVELOP & SELECT

Figure 34. Brainstorming process. Alcocer, Guelmy /2011

Creating opportunities
brainstorming

After analyzing and selecting insights and themes, it is time to change them into opportunities.

According to IDEO HCD toolkit, an opportunity area is a steppingstone for the generation of an idea.[22]

These changes are going to start with the phrase “how might we?” An open mindset question towards possibilities is required. It is important not to limit others or ourselves. In this phase, quantity is more important than quality.

Once the HWM phase is completed, we can proceed to answer the questions starting with the phrase “what if...” We should stop and answer every one of the “How can we” questions and come up with a big quantity of ideas that will help us on the next phase: scenarios building.

During this phase, we use post-its in different colors in order to differentiate HMW questions from the “what if” answers, as well as markers to connect ideas.

Scenario building

Scenarios are user- and task-oriented use cases, which provide examples of usage as an input to design and usability activities.

- Fabio Sergio. October, 2009

In order to create these scenarios, we analyze the insights that came out of the interviews, the cognitive map, and part of the research about healthcare services in Mexico.

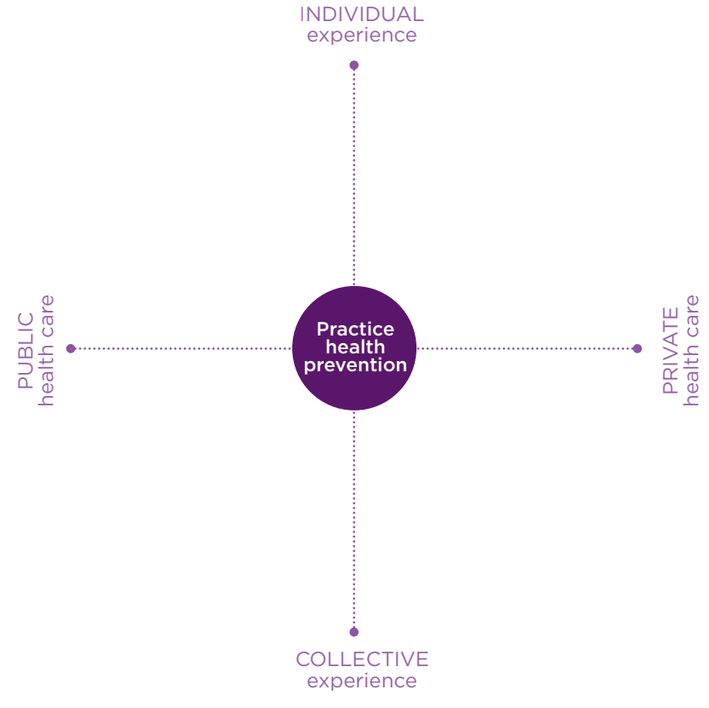
The first couple of polarities are referred to the kind of experience they could have: an individual or collective experience. The first one is related to introverted personalities and people that rather have privacy talking about healthcare issues; on the other hand, we found people that could need a supporting system around them, they do not like to do things alone or they are not used to, because of socially related factors.

INDIVIDUAL experience — COLLECTIVE experience

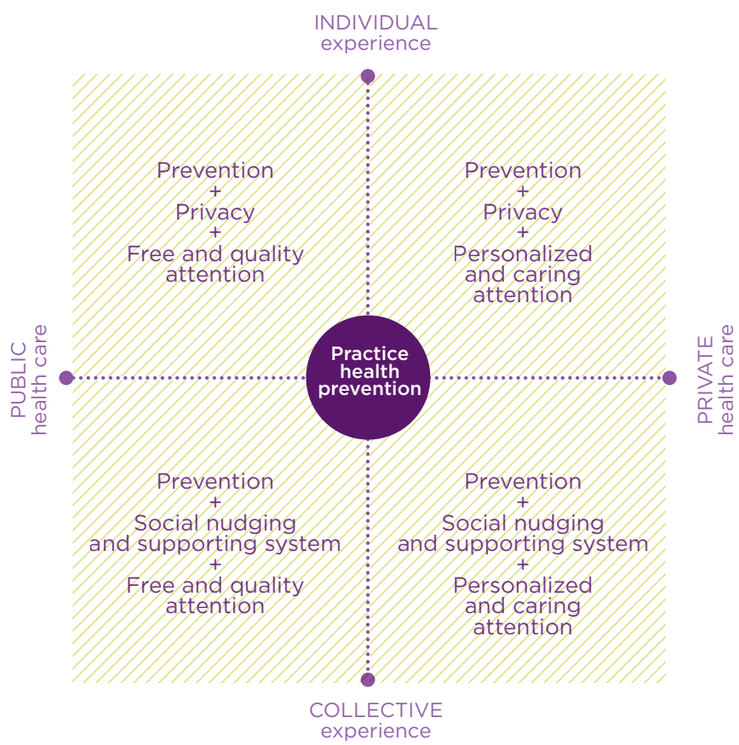
The second axis is related to the kind of attention they want/can receive. As we could see on the research section, Mexican healthcare system is divided almost 50/50 intro private and public healthcare. The first one refers to people that usually can afford private care and they are forced to acquire public healthcare. On the other hand, we have private care, a more accurate and personalized attention.

PUBLIC health care — PRIVATE health care

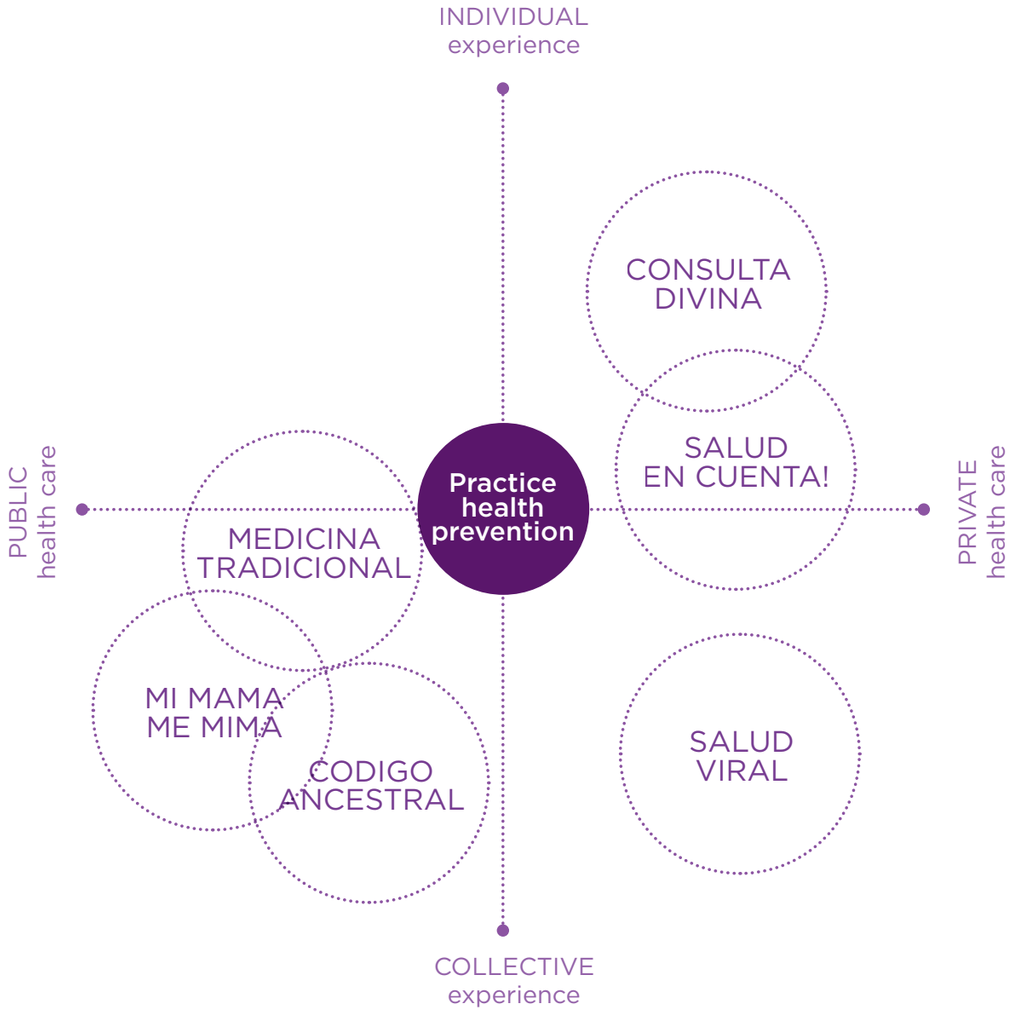
The intersection of these polarities is named SCENARIO MATRIX and it is going to be essential in the creation of concepts to develop our scenarios.



Graphic 20. Polarities and scenario matrix



Graphic 21. Scenario matrix and quadrants



Graphic 22. Scenarios

Figure 35. Scenario 1 Moodboard

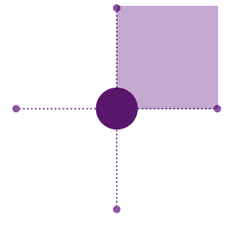
Scenario 1

CONSULTA DIVINA

DESCRIPTION:
This is a service to improve the experience of a healthcare visit. It consists of an Ipad/ Tablet application that follows you and guides you through your appointment and after it. You can choose who will be your companion as a reminder of a very popular TV-show among women: “Netas divinas”.

STAKEHOLDERS:
Healthcare staff
Carlos Slim Institute of Health
Telcel
Telmex

TOUCHPOINTS:
Tablet platform
SMS platform
Cellphones
Medical office



INDIVIDUAL&PRIVATE

Scenario 2

SALUD EN CUENTA

DESCRIPTION:
This is a yearly saving service with prevention-driven goals dedicated to adult women. They already are clients at preferential prices given by physicians and labs. They are also clients of this cooperative.

STAKEHOLDERS:
Caja Popular Mexicana
Private physicians
Private Labs
TELCEL
Local Partners
Correos de México

TOUCHPOINTS:
P.O.S.
SMS platform
Cellphones
Medical office

INDIVIDUAL&PRIVATE

Figure 36. Scenario 2 Moodboard

Scenario 3

SALUD VIRAL

DESCRIPTION:
Social game based on the metaphor of a viral contagion. It starts from a woman and spreads to her friends. This group of friends can share information, experiences, get lower prices going together, and get a better attention in a funny way.

STAKEHOLDERS:
Carlos Slim Institute of Health
Carlos Slim corporation (telcel, telmex, banorte)
Private Physicians
Private Labs
Private Clinics
Correos de México

TOUCHPOINTS:
Newspaper
Viral Kits
Cellphone
Web platform
SMS platform

COLLECTIVE&PRIVATE

Figure 37. Scenario 3 Moodboard

Scenario 4

CÓDIGO ANCESTRAL MAYA

DESCRIPTION:
This is a social game based on a fictional Mayan legend. Through this game families can discover their health precedents and, through missions modify some factors that can be dangerous for their health or at least, be aware of genetic factors.

STAKEHOLDERS:
Secretaria de Salud de Yucatán
Diario de Yucatán
Advertisers and Sponsors
Telcel

TOUCHPOINTS:
Newspaper
Kits
Cellphone
Web platform
SMS platform

COLLECTIVE&PUBLIC

Figure 38. Scenario 4 Moodboard

Figure 39. Scenario 5 Moodboard

Scenario 5

MI MAMA ME MIMA

DESCRIPTION:
This is a service that shifts the role of mothers as health manager (mother to daughter/ son's over 18 years old). He/she will be the bridge between information/doctor to mother. Based on "gamification" rules and "geolocation" social games, daughter or son can gain points and change them for prizes.

STAKEHOLDERS:
Secretaria de Salud de Yucatán
MTV latinoamerica
Telcel
Carlos Slim Institute of Health

TOUCHPOINTS:
Cellphone
Web platform
SMS platform
Universities

COLLECTIVE&PUBLIC

Scenario 6
MEDICINA TRADICIONAL

DESCRIPTION:
This is a service that encourages the use of traditional medicine and food in order to avoid secondary effects of menopause treatment, and metabolic diseases.

STAKEHOLDERS:
Secretaria de Salud de Yucatán
CICY
Ayuntamiento de Mérida
Nutre y Mueve tu vida

TOUCHPOINTS:
CICY installations
Green Areas
Mobile P.O.S.

COLLECTIVE&PUBLIC

Figure 40. Scenario 6 Moodboard

Scenarios Matrix
Analysis

In order to select the most accurate scenario to take it to the next level (prototyping), we are going to use this scenario matrix analysis (graphic no.23) to assign points according to five main categories that are meaningful for the project. Scenarios are rated from 1 to 5 points, where 1 is the lowest and 5 the maximum, depending on our subjective opinion.

Participation: this category is going to rate the level of involvement of the user in the project to be analyzed. How active is the user's participation in the project.

Awareness: this category refers to how much information my user is going to get. How much does my user's level of awareness is going to increase?

Personalized: the main factor to rate in this category is how much personalized is this project in relation to the user.

Supporting system: in this category, we are going to rate how trustworthy is the supporting system around the user. Who or what is supporting the user in the project?

Feasibility: one important thing in a project is how possible and feasible it is. Rates depend on how much technology, participation, and tools are needed for the project.

SCENARIO 1
The first scenario named "Consulta Divina" obtains eight points. This scenario has a low level of user participation. Even though information is flowing between doctors and patients it is not enough to receive just one SMS once in a while. Also, it obtains a low score from personalization, because there are just five characters to choose from; it is not custom made. Besides the SMS, there is no supporting system around this project and because of the technological needs of this project, feasibility also has a low score.

SCENARIO 2
"Salud en Cuenta" is the second scenario to be analyzed. It has a high rate because the user is actively participating in increasing her findings and also participating in talks or events. These talks and events are the same reason why awareness has a high rate, because the user is continuously getting valuable information. The supporting system around this project is strong in this project and it is shaped by specialist and supporting groups created for the same women involved. We think that this project is feasible because high technology is not needed, main actors can be interested, and it can be easily an integral part of senior women's life.

SCENARIO 3
"Salud Viral" has the higher score of participation because it is a social game, and active participation is needed. Information is flowing

	PARTICIPATION	AWARENESS	PERSONALIZED	SUPPORTING SYSTEM	FEASIBILITY	
Scenario 1 CONSULTA DIVINA	●●○○○	●●○○○	●○○○○	●○○○○	●●○○○	8
Scenario 2 SALUD EN CUENTA	●●●●○	●●●●●	●●●○○	●●●○○	●●●●●	20
Scenario 3 SALUD VIRAL	●●●●●	●●●●○	●●●●○	●●●●○	●●○○○	19
Scenario 4 CODIGO ANCESTRAL	●●●●●	●●●○○	●●●●●	●●●●○	●●○○○	19
Scenario 5 MI MAMA ME MIMA MUCHO	●○○○○	●○○○○	●○○○○	●●●●○	●●●○○	10
Scenario 6 MEDICINA TRADICIONAL	●●●●○	●○○○○	●●●○○	●●●○○	●●●○○	14

Graphic 23. Scenarios matrix analysis

between friends and that is why it gets 4 out of 5 points available. This project is designed according to the most important health themes in senior women's life such as: diabetes, cholesterol, breast cancer, etc. "Salud Viral" is based on the supporting system which is based in group of friends. Feasibility is a problem issue because it needs some technological knowledge that maybe the user does not have.

SCENARIO 4

The fourth scenario is "Código Ancestral Maya". Because of the same reason than the previous scenario, it is a social game. This scenario has a 5 out of 5 points in participation. In this project, people have to discover familiar precedents and learn about this through missions, but information is coded and there is not direct information arriving to the user in order to increase her awareness. "Código Ancestral" is the most personalized project among this series of scenarios because when families discover their familiar precedents they receive personalized missions according to what they have discovered. The supporting system in this case is very high because there is a complete family involvement. Feasibility is affected not because of technology, but because of availability from members.

SCENARIO 5

"Mi mamá me mima mucho" is a saying that every Latin American child wrote in elementary school. The level of participation is low and even though it is a social game, the active participation came from the son/daughter. Awareness is low rated because it just processed information arriving to the final user. There are not much personalized actions for the user, since everything is designed around the bridge (son or daughter). There is a strong supporting system because there is a familiar involvement, whose mission is pushing the mother to take care of herself. Feasibility is medium because we think that young people can be interested in this social game, but the son-mother relationship can damage this project.

SCENARIO 6

"Medicina tradicional" is the last scenario to be analyzed. It received a high rate of participation because women have to plant their own "medicine" and take care of it. This project does not offer medical or first hand information that could increase women's knowledge about health. Plants, fruits and vegetable were chosen especially for this women, so there is a medium level of personalization in this project. Because of this, women have to get around to plant and take care of it, this can become a supporting group of women. These are women with similar age and needs. There are some missing elements that could affect feasibility in this project such as: spaces where to realize it and the level of effective participation from women.

The selected scenario was the number 2: "SALUD en CUENTA." In the next chapter we will proceed with the prototyping for this project and see how it works in the real context with real users.

CREATIVE PHASE

05 FEEDBACK

Figure 41. Prototyping Toolkit. Alcocer, Guelmy /2011

Prototyping

According to NESTA and "thinkpublic," prototyping is an approach to develop, test and improve ideas at an early stage.[27]

Prototyping helps designers experiment, evaluate and adapt before more resources are involved. It allows you to try out your ideas in a low cost way and it can be conceived in a small scale. Besides giving you immediate feedback to help you refine your ideas.

Prototyping will help you learn and build from others. Designers need to be willing to learn and change in order to get advantages from the results of this process.

Selecting the right people is important for this phase. For the area of Knowledge and expertise a branch manager of a local cooperative was selected. It is also relevant to choose a representative group of users to test our ideas, and a location ideal for prototyping. In this case, having enough space at home was the meeting point.

Every project is different and prototyping as well. Prototyping for this project was divided into two parts:

In the first part, we considered talking to the main stakeholders (cooperative) and listening to their point of view about the project and what was an important point for the feasibility of it. We arranged an appointment with the branch manager of "Caja Crescencio" in order to introduce her a presentation on how the project should work and asked their opinion about it.

For the second part, we recreated the cooperative at home inviting five women, who were possible users. Women met the requirements of age, sex, membership in a cooperative, and first of all willing to participate in the prototyping.

First Part:
Stakeholder interview

For this first part of the prototyping, an interview with a branch manager of Sistema Coopera – Caja Crescencio Rejon was arranged.

At the day of the interview, Lic. Guadalupe Solís welcome us to her office were we explain her the aim of our visit. My family has been part of this cooperative from the very begining and it has become an important part of member's life.

In this part our Toolkit was:
- Laptop
- Photocamera
- Notebook
- Project presentation

We started with a short introduction and a few questions about the cooperative, such as: what is needed in order to open an account? In relation with this, she answered that the most important thing is to be a member is to know the cooperative and it mechanisms but official requirements are an ID, proof of address, birth certificate and pay a small fee to cover management costs.

We were interested in how small is this management fee, so she explained us that in order to cover the cost of the carnet and other management cost the fee to open an account is 60.00 pesos (3,33EUR).

We also asked her about the benefits of belonging to a cooperative. In relation to this, she answered that members can enjoy a lot of benefits, among these: increasing saving habits, having access to credits and getting the higher interest rates in the market (interest rates from 2 to 6%).

In our observation to the cooperative space, we have seen a poster promoting a life insurance sponsored by MetLife. This life insurance is offered to members of the cooperative about this, Lic. Solís explained us that is an optional service for members and it cost 120.00 pesos (6,66 EUR) every month and includes a 150,000.00 pesos insurance.

After getting to know a little better the cooperative, we proceed through a slide presentation to introduce her to our project: Salud en Cuenta. The concept, benefits and supporting data were explained in this presentation in order to expose the reason why we think is a feasible project.

When we finished to present the project, we proceeded to ask her opinion or suggestions about. She said that the project was very interesting and for sure, a good option for female members of the cooperative. Her main and only suggestions was to present it to the members in order to measure their interest and if they would like to have this service. Which link us to the second part of the prototyping.

Figure 42. Prototyping First Part. Alcocer, Guelmy /2011

Figure 43. Prototyping Second Part. Alcocer, Guelmy /2011

Second Part:
Presenting to the members

In the second part of the prototyping we recreate the cooperative at home, five senior female members of the cooperative were invited to participate. We create some posters, signage and carnets using the following toolkit:

- Large paper sheets
- A4 paper sheets
- Markers
- Pen and pencils
- Ruler
- Cutter
- Chairs
- Photo camera
- Computer

All this tools were created to make it more appealing for our guests, using very cheap materials and infrastructure available.

On the day and hour settled for our appointment, there were 4 out of 5 women. We invite one to one to enter, take a number and wait for her turn. We called them one to one to explain that her account just change to this new account with amazing benefits, also delivering them their new carnet and the discount card.

The process was clear and easy for them, they seemed to be very interested and these are some of the insights that we got from them:

• It's interesting how it covers the most dangerous areas for women's health

• People over 45 not always have solvency to have access to better services. This service can help them.

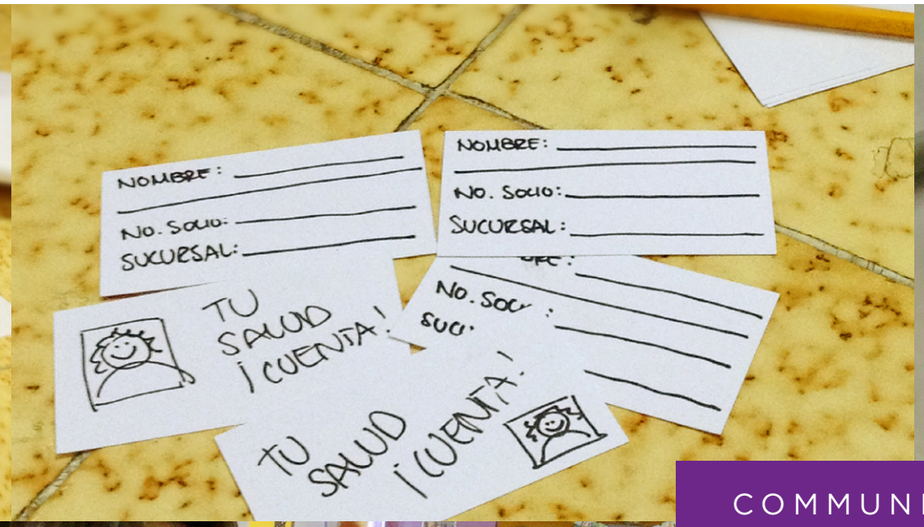
• At that age people start to reduce their income because they get retired making more difficult to pay for health

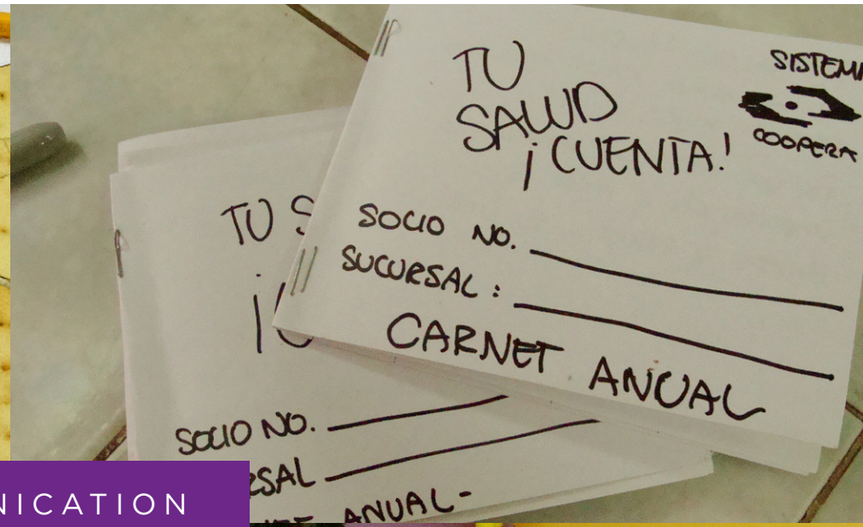
• Paying it without notice or without doing a big effort or passing through a lot of bureaucracy is a key factor because people would have less excuses

• Many women are reluctant to do preventive check-ups but having a lower cost can make it easy for them

• After 45 years, metabolic diseases become a big expenditure for women

As conclusion, both parts of the prototyping were positive and there were no changes suggested by any of the women that took part of this process.





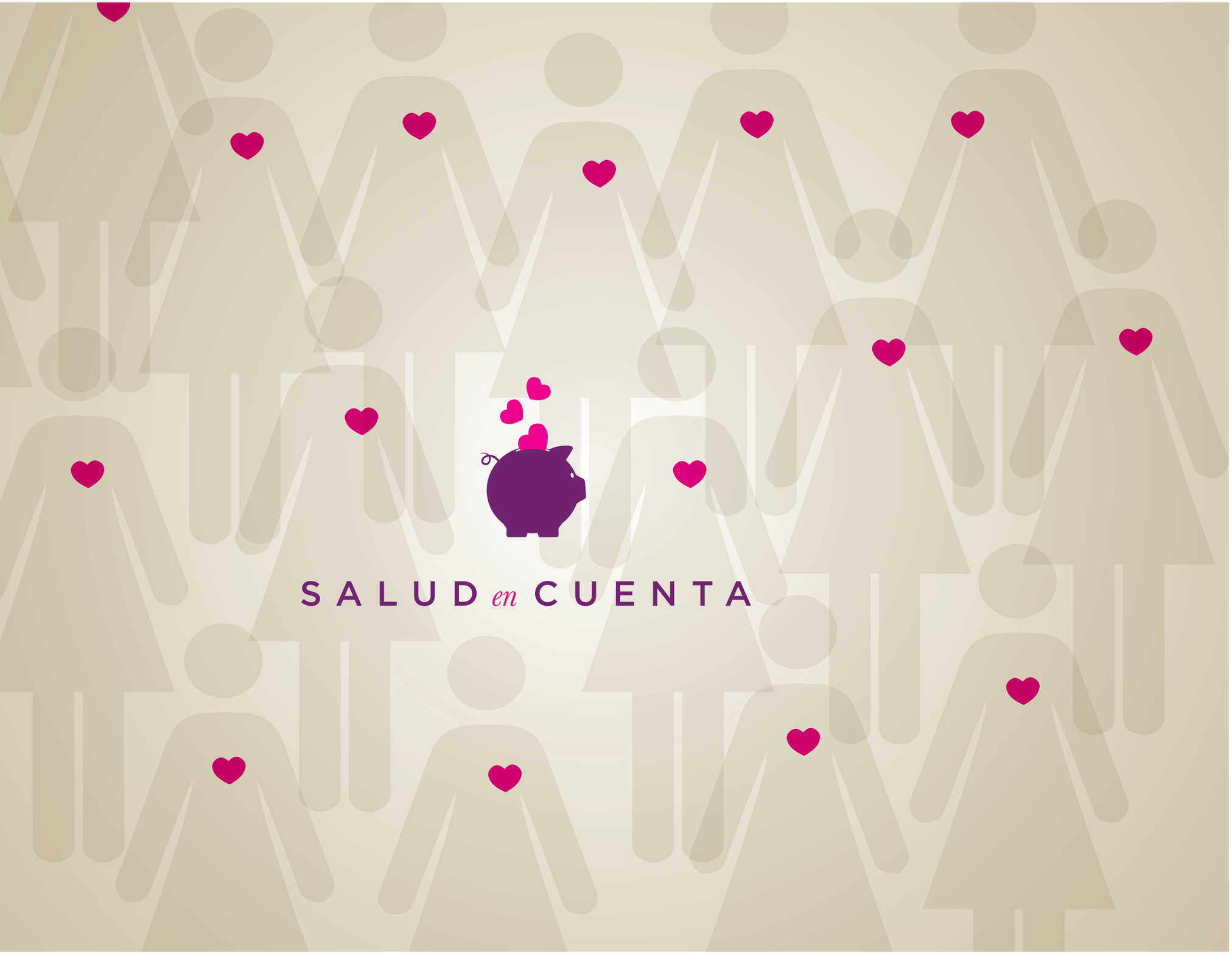
COMMUNICATION TOOLS

PROTOTYPING... ACTION!

Figure 44. Photo record. Gamboa, Mariana and Alcocer, Guelmy /2011

EXECUTIVE PHASE

06 REDEFINE

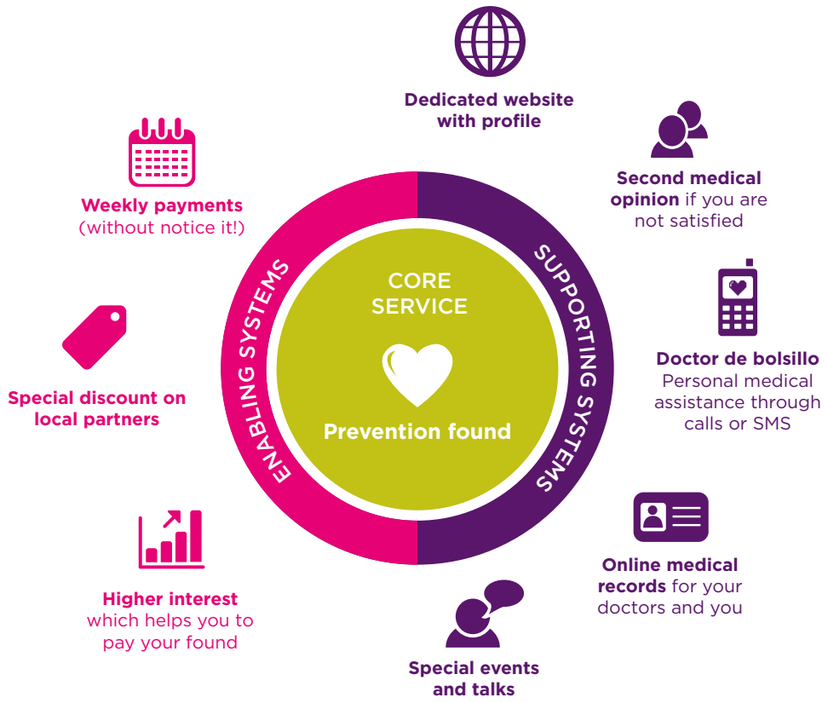


Graphic 24. Salud en Cuenta

PSS concept

Salud en Cuenta is a [WHAT] service-system to promote and increase health prevention that will transform automatically a normal saving account into a special annual saving-money program addressed to [WHO] senior women in [WHERE] Mexico. Preventing program is made according to the needs of Mexican woman over 45 years old. They should belong to one of the partner cooperatives (Caja Popular Mexicana and Sistema Coopera) and have a saving account with more than 5,000 mxn pesos.

Mexican population is getting older so fast that in the next years they are becoming 4 times more. [WHY] Mexican healthcare system is not ready for this. As we have seen in the previous chapters, Mexican healthcare system is poor and overloaded. In order to prepare Mexican social security for this population transition [HOW] we have to distribute healthcare attention out of the public services. This is the reason why we are proposing this system. An annual system with three-month preventive goals that almost every Mexican woman can afford. Changing mexican's behaviour from sick-driven to preventive-driven.



Graphic 25. Core and complementary services

Core Service

The core service of this system is the FONDO DE PREVENCIÓN (prevention found). This feature offers personalize and private attention at lower prices to the members of Salud en Cuenta. How is this possible? Simple, just as the cooperative's aim said: getting people together to achieve a common goal. In agreement with doctors and labs, who are part of the community and members of one of the cooperatives, to offer a lower price to these women. In this way, women get a lower price for volume and doctor and labs get more patients and clients. A win-win relationship.

There are 4 annual goals, all of them specially selected for being the main health issues on Mexican senior women. First three-month period is dedicated to:

METABOLIC DISEASES
Diseases strongly associated with metabolic disorders are the main health issues on senior women. Diabetes and dyslipidemia can be easily detected through a chemistry blood test. Diseases related with these disorders can be prevented or treated in an early stage.
A chemistry blood test and a general check-up are mandatory steps on prevention

The second three-month period is dedicated to:
NUTRITION
Based on the results of chemical chemistry blood test and the general check-up, a professional of the nutrition can personalize women's diet to their specific needs based on modifiable and not modifiable precedents such as: age, activity, genetic factors and so on.

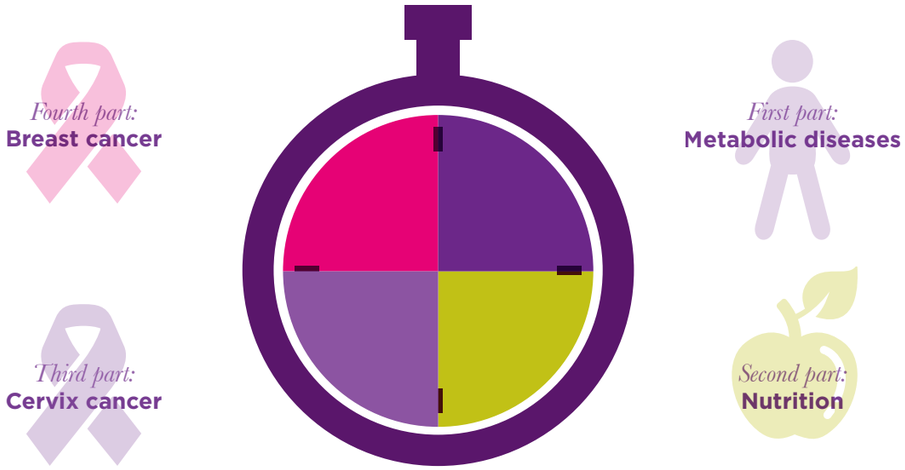
The third three-month period is dedicated to:
CERVIX CANCER
Latinamerican women are more likely to got cervix cancer than other races. Cervix cancer was the most spread cancer in Mexico for a long time, now Breast cancer took its place.

For preventing this kind of malignant neoplasm is necessary take a pap test made by a gynecologist, at least once a year. The service includes gynecologic visit and pap test with results.

And the last three-month period is dedicated to:
BREAST CANCER

Breast cancer nowadays is the most spread malignant neoplasm in women all around the world. Mexico is not the exception.

Risks get higher with age and it's even higher if there are family precedents. For an early detection of breast cancer self exams are suggested once a month and a mammography once a year, specially after 45 years old. The service includes mammography and gynecologist visit who will teach women how to perform self-exams correctly.



Graphic 26. Three-month goals

Complementary services
Enabling systems

There are complementary services around the prevention found. Paying without notice it was created based on an insight. Because people think that prevention is something that should be free or not representing a big effort for people.

We distribute the annual fee into small weekly payments that almost every woman could pay (1,60EUR). In Mexico, is very popular to purchase expensive items through a system of "paguitos" o "meses sin intereses" (fees without interest), this is the way in which Mexicans get items that otherwise will be almost impossible to get. So, we applied the same principle to this service, making private attention affordable to women. A quality healthcare attention with certified physicians and labs. In order to maintain these quality standards, we included a rating system from patients to doctors.

Cost Table

	NORMAL PRICE	REDUCED PRICE	REDUCED PRICE+10%fee
Clinical Chemistry blood test (to detect/control metabolic diseases)	400.00 mxn	250.00 mxn	275.00 mxn
General Practitioner consultation (to check blood test results and general check-up)	200.00 mxn	100.00 mxn	110.00 mxn
Nutrition consultation (based on blood test and check-up results teach women how to eat in base of her age and needs)	300.00 mxn	150.00 mxn	165.00 mxn
Gynecologic consultation & Pap Test	400.00 mxn	250.00 mxn	275.00 mxn
Mamography & gynecologic consultation (second visit to the gynecologist to analyze mamography results and teach self-test)	800.00 mxn	400.00 mxn	440.00 mxn
	2100.00 mxn	**1,150.00 mxn**	**1,265.00 mxn**
			+126.50 mxn 10% fee
			1391.50 mxn
			34% scount
	28.99 mxn WEEKLY (1,60 EUR)	**116.00 mxn monthly (6,80 EUR)**	**1391.50 mxn for year (81 EUR)**

Table 03. Costs

Our main goal is made prevention accessible for everyone, we thought that a higher interest rate could almost cover your annual fee. In our research, we have found that 4% is a high interest for checking accounts and it is possible to applied in this system. So, with 4% and an account with more than 35,000mxn pesos your fee is almost paid.

35,000 mxn x 4% = 1,400 mxn
82EUR

1,391.50 mxn (yearly fee)
81EUR

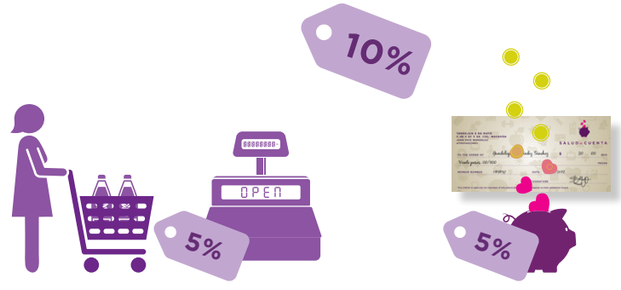
A third system that belongs to these enabling systems are: special discounts from local businesses. We want to support local economy and our community members. Local business members of one of the cooperatives are invited to make a discount to members of Salud en Cuenta.

Half of this discount is applied immediately to the purchase while the other half is going to her prevention found through a check.

This is how the discount works:

1. Lupita goes to Dunosusa to do buy groceries on the first week of the three-months period...

Dunosusa offers:



She has 400.00mxn in groceries with a 5% discount applied she pays:
380.00mxn

She will receive a **20mxn** check that she can deposit on her prevention found directly on the Cooperative

Week01/12
total to pay:
348.00 mxn (12 weeks)
-20.00 mxn (discount)
328.00 mxn

328.00/12(weeks to go)

Now she will pay
27.33mxn
instead 28.99mxn

2. During the same three-month period (4 week), Lupita goes to cut her hair with a partner stylist...

Ana Lucía offers:

She had a haircut which normal price is 150.00mxn with 7,5% discount applied she will pay:
138.75mxn

She will receive a **11.25mxn** check that she can deposit on her prevention found directly on the Cooperative

Week04/12
total paid:
129.32 mxn (4 weeks)

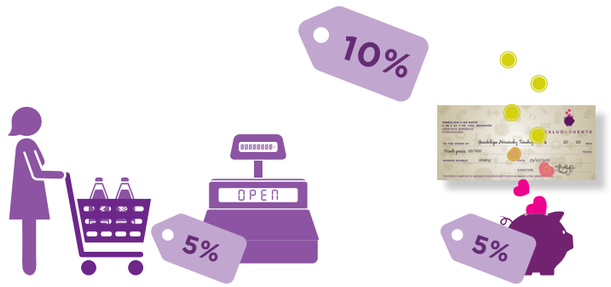
total to pay:
218.68 mxn (8 weeks)
-11.25 mxn (discount)
207.43 mxn

207.43/8(weeks to go)

Now she will pay
25.92mxn
instead 27.33mxn

3. On week06, Lupita comes back to Dunosusa to buy groceries...

Dunosusa offers:



She has 500.00mxn in groceries with a 5% discount applied she pays: **475.00mxn**

She will receive a **25mxn** check that she can deposit on her prevention found directly on the Cooperative

Week06/12
total paid:
192.41 mxn (6 weeks)

total to pay:
155.59 mxn (6 weeks)
-25.00 mxn (discount)

130.59 mxn

130.59/6(weeks to go)

Now she will pay
21.76mxn
instead 25.92mxn

Complementary services
Supporting systems

As important as the enabling systems, the supporting systems provide information and help to these women to get to know better themselves and their body. Teach them why prevention is important and support them when they need it.

Special events and talks are organized on the branches. Cooperatives use to get members together in order to take decisions together; they have designated spaces for these activities. Taking advantages of these spaces to invite professionals of the health to share information and promote themselves through talks, always related with the three-months goal.

Doctor de bolsillo is a personal medical assistance, a direct connection patient-doctor through SMS or calls. In this way, doctor can get paid for every call or SMS answered.

Members can contact their doctor:

BY CALLING A 900 NUMBER
Dialing 01 900 TU SALUD (01 900 8872583) and dialing doctor's code (available on medical receipt or on the list of doctors availables in your city delivered with the voucher)

It cost 5.00mxn/minute(1.00 for the 900 service for the whole call, 0.50 cents to SALUD en CUENTA and 3.50 mxn/minute to the doctor)

BY SMS TEXTING TO MISALUD (64 72583)

Text:
08472984 Hi Dr Perez! I'm Lupita Hernández...
DOCTOR'S CODE | MSG

It cost 2.00mxn/SMS (.50 cents for the SMS carrier, 0.50 cents to SALUDenCUENTA and 1.00 mxn/SMS to the doctor)

Because we know health is an important issue, if a member is not satisfied or not sure about a result, upon request, we offer also a second medical opinion.

Even though our regular user is not technological trained but due to the fact that is constantly increasing and looking-forward we are including a web platform with special information always related with the three-months goal.

Users can also control and share with medical staff and family their online medical record. A place where they can gather and control all their information related with health.

All this services made of Salud en Cuenta a complete and feasible project.

Figure 45. Caja Popular Mexicana, Oaxaca. Unknown /2010

Stakeholders

What is a cooperative?
A cooperative is an association of persons getting together voluntarily to achieve a common goal

Why a cooperative?[U]
•1 billion people are members of cooperatives worldwide
•A cooperative meets your needs because is owned by you
•Cooperatives care about their communities
•Cooperatives account for 100 million jobs around the world
•Cooperatives put people before profit
•Cooperatives are member owned and democratically run
•Cooperatives empower people, especially women

In comparison with a normal enterprise, Cooperatives are based on mutual help, responsibility, democracy, equality, equity and solidarity

CAJA POPULAR MEXICANA
Caja Popular Mexicana was the first cooperative in Mexico (1951). By 1994, 62 cooperatives around Mexico joined together to create Caja Popular Mexicana, Sociedad de Ahorro y Préstamo.[V]

Caja Popular Mexicana is a legal entity, non-profit, in which the member's responsibility is limited to payment of their contributions, and where the partners are grouped to ensure mutual aid through savings and credit.

They say: "We are a financial cooperative that improves the quality of life for its members, educates members in the culture of saving money and in the practice of mutual aid and providing competitive products and services."[V]

This institution, thanks to the trust of its members have managed to maintain their growth and expansion of its services. Currently has a presence in 22 states of Mexico, covering over

400 branches. Position that make it important for the cooperative sector in Latin America.

SISTEMA COOPERA

Sistema Coopera is the most solid cooperative financial institution of southeastern Mexico. Main objective is promote saving habit and mutual help.[W]

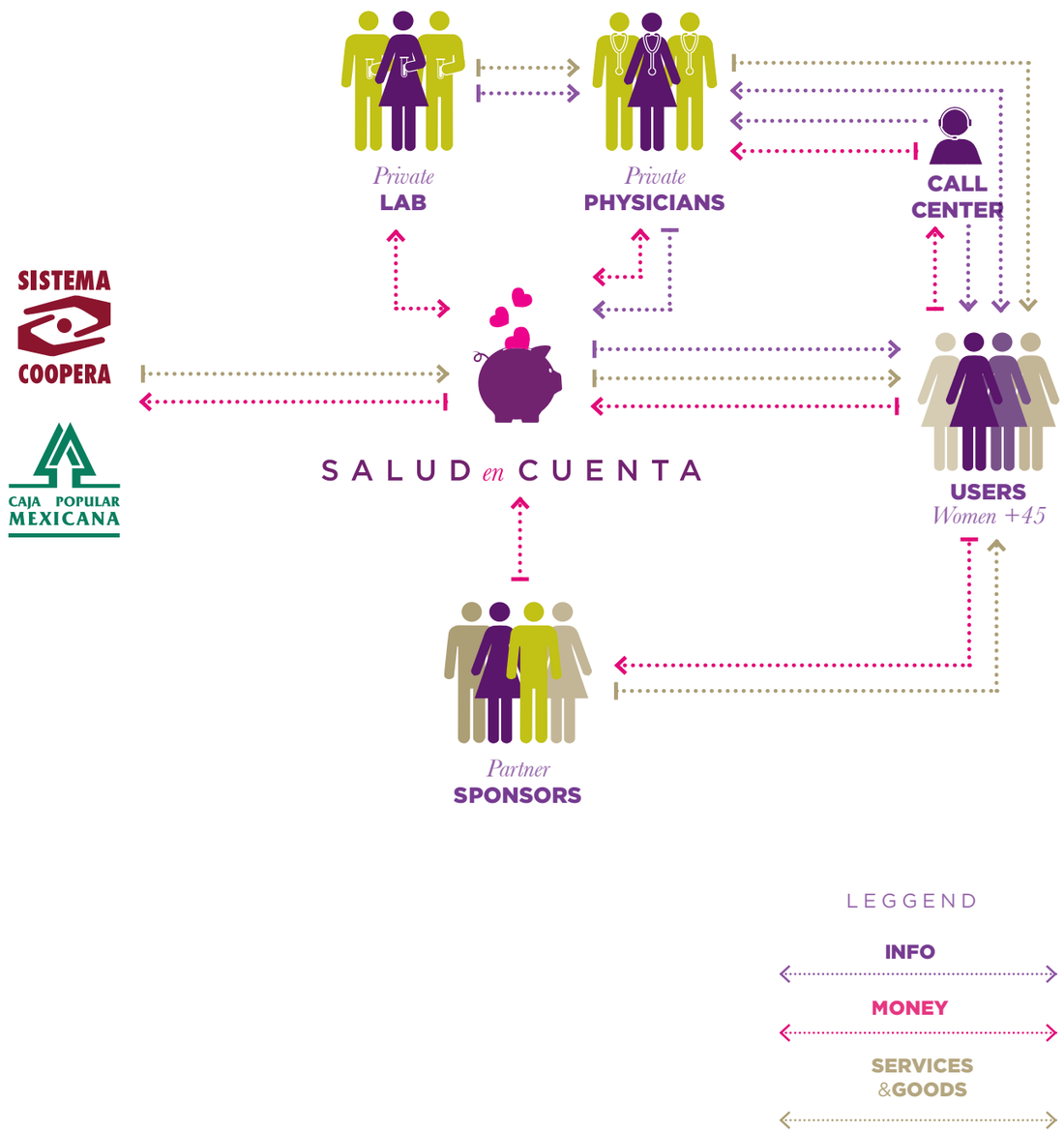
Its aim is improving the quality of life, help families to build their future and contribute with Mexican society to have a stronger economy

Their mission is to serve our members through savings and credit programs, training them and assisting them to improve their money management, encouraging and systematizing savings, within the principles of cooperation to contribute to make Mexico, a fair, free and fraternal place.

We are proposing a partnership between the two main cooperatives in Mexico – Caja Popular Mexicana and Sistema Coopera – Our aim with this partnership is to cover almost all the Mexican Republic. Caja Popular covers 22 out of 31 mexican states while Sistema Coopera covers the southeastern Mexico. In this way, we can cover 26 out of 31 states of Mexico. Between Caja Popular Mexicana and Sistema Coopera there are more than 500 branches and almost 2.5 millions of members.[VW]

Graphic 27. Covered area by Salud en Cuenta

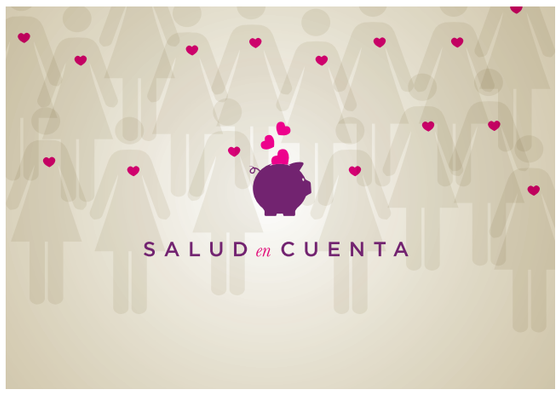
System Map



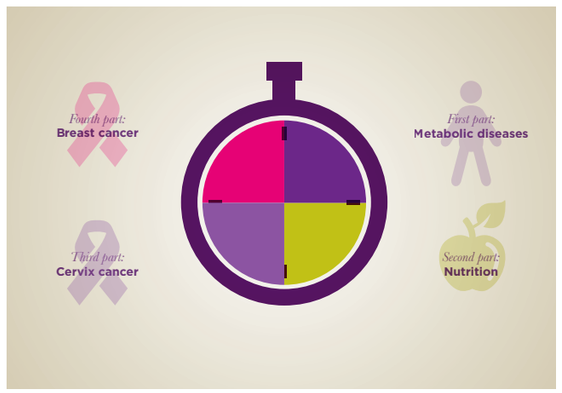
Graphic 28. System Map

Storytelling

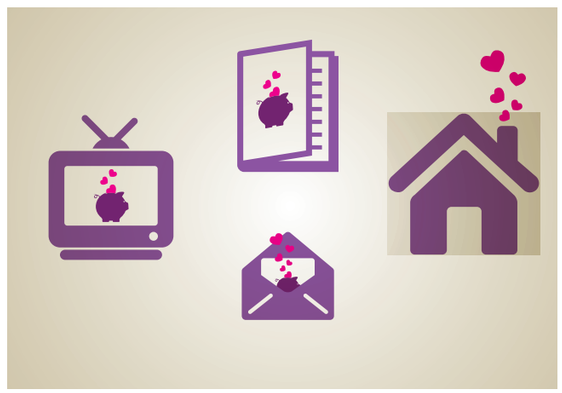
1. Caja Popular Mexicana and Sistema Coopera launch a new program called Salud en Cuenta



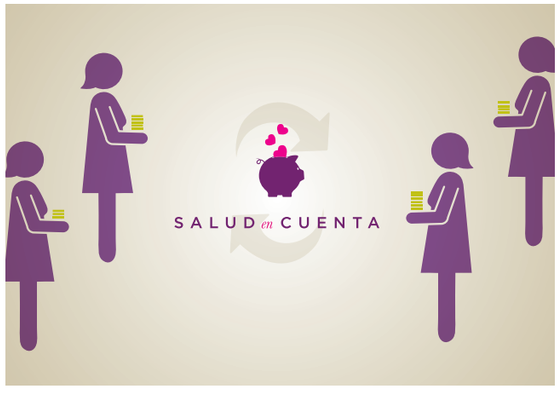
2. It's a saving-money program dedicated to their adult female members (+45years old) and their health



3. **SALUD *en* CUENTA** is an annual health prevention program with three-months goals: metabolic diseases, nutrition, Cervix cancer and Breast cancer



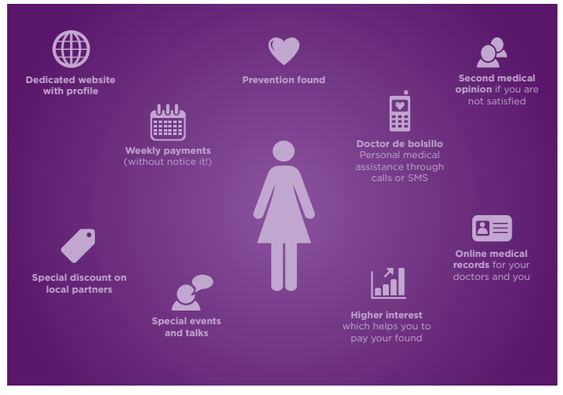
4. Advertising is made through local and national media, P.O.S. and mail.



5. For women with an account with more than 5,000 mxn is a default change.

6. Lupita like everymonth goes to the cooperative to save some money

7. She discovers that her account changed! Now her money is transformed in health!



8. Also, her new account has amazing benefits

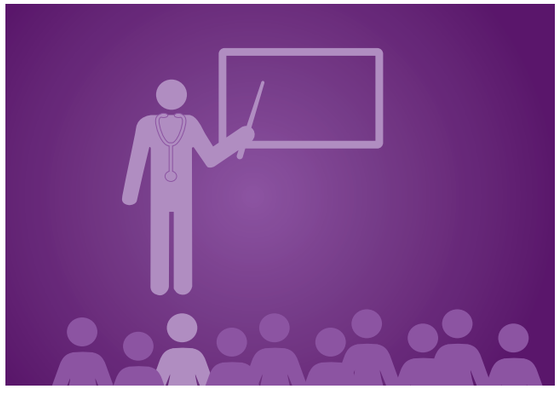
Storytelling

9. Lupita receives her new carnet - an annual carnet - and a discount card

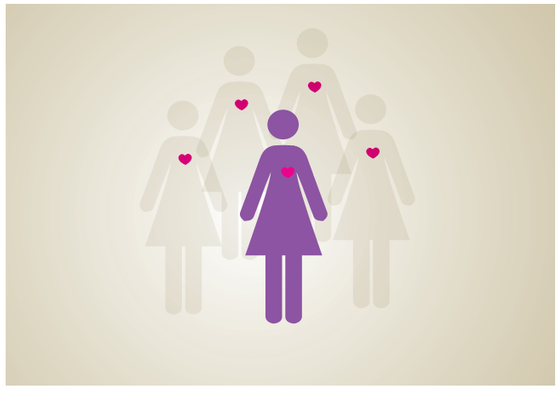
10. Inside her new carnet she can found interesing information about the topic of the three-months period.

11. Every week Lupita receives a SMS notification with info related with the theme, time and money missing to reach her goal

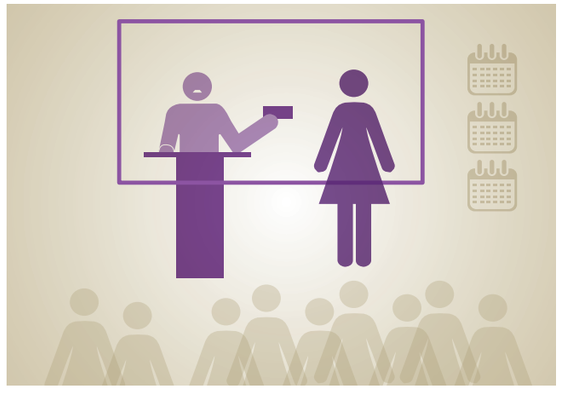
12. When she buys in one of the business partners of the program gets a discount, half applied directly to the total amount of the purchase and half goes to her prevention found.



13. Lupita checks her calendar and decides to go to a Physicians talk about diabetes and their consecuences on senior women.



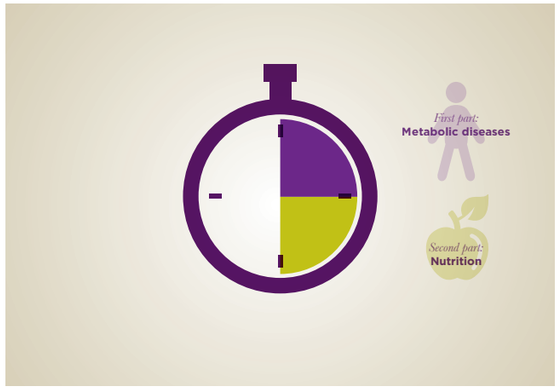
14. After the doctor's talk, she can talk and share experience with women just like her



15. At the end of the three-month period, Lupita reached her goal and on the monthly reunion of the members, she and other women are special guests to receive their coupon.

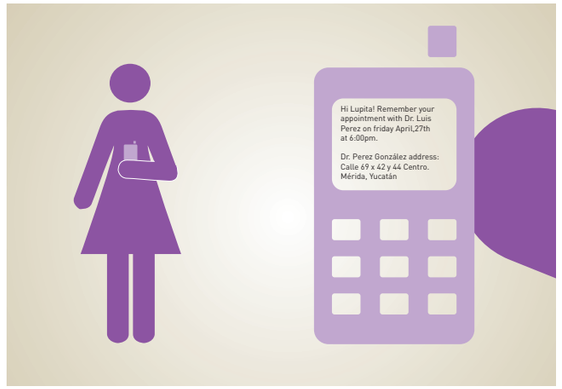
16. She receives an envelope containing the coupon and a list of physicians that she can visit. Coupon is valid for three months before the next coupon arrive.

Storytelling

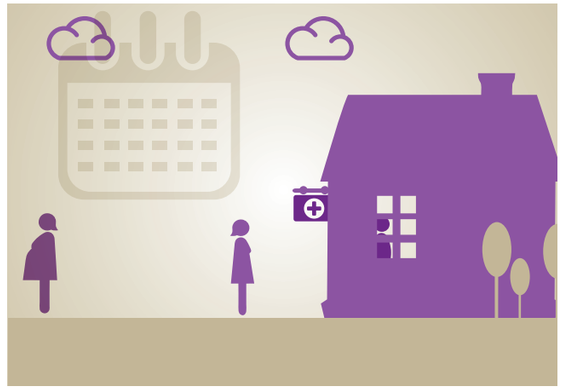


17. A new period begins for Lupita and now is about Nutrition

18. Through the callcenter, she can book the appointment with her favorite doctor. Maybe the one she already knows from the talk.



19. One week before her appointment, she will receive a reminder by SMS



20. On the date selected, Lupita go to the doctor's visit

21. She enters and wait for Dr. Pérez

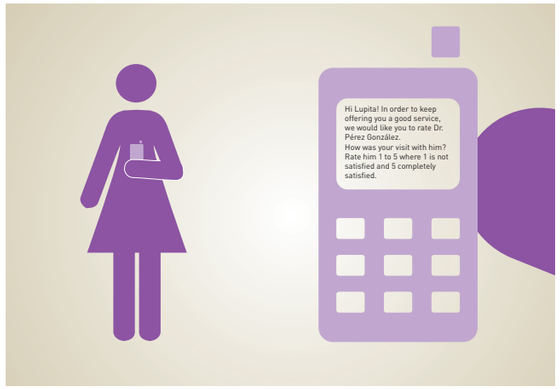
22. She visits Dr. Pérez and everything is fine!

23. At the end of the visit with the doctor, Lupita only needs to pay with her coupon

24. After Lupita's appointment, Doctor Perez have go to the website to fill the online medical record.

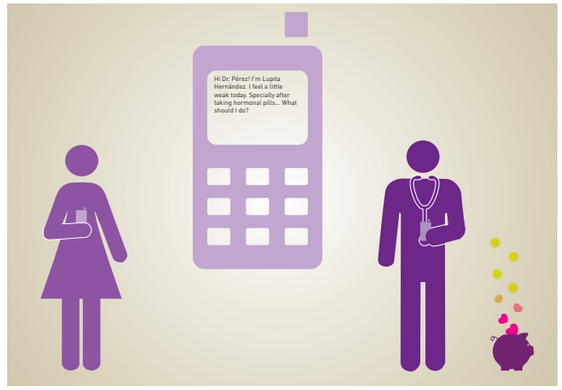
Storytelling

25. In that way, Lupita and her medical staff can have access to an update record. Everytime, everywhere

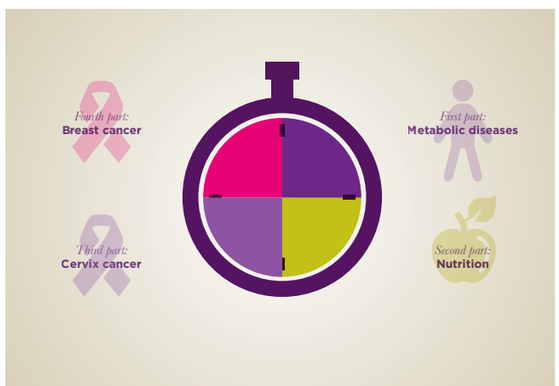


26. After her appointment, she will get a quiz to rate Dr. Pérez. It's important to mantain a quality service.

27. In any moment, she can contact Dr. Pérez through phone



28. Lupita can contact Dr. Pérez also by SMS. In both cases, paying a little fee that will cover doctor's personalized attention



29 .Time is still going and Lupita is receiving all the health benefits from SALUD*en*CUENTA

Touchpoints
Annual carnet

Figure 46. Annual carnet. Shutterstock

The annual carnet, as well as the older one, has the account statement divided into 5 rows: date, origin, deposit, withdraw and total. Two new rows related with Salud en Cuenta has been added to the new carnet: deposit and total. They are differentiated by the color purple.

Besides the new account statement, the new carnet contains information and facts related with the three-month goals. It is divided into 4 parts: metabolic diseases, nutrition, cervix cancer and breast cancer.

The new carnet have also a calendar in every of its 4 parts, where women can take notes of the next events and talks.

THE MERE-MEASUREMENT EFFECT: WHY DOES MEASURING INTENTIONS CHANGE ACTUAL BEHAVIOR?

According with Richard Thaler and Cass Sustein, recent research has demonstrated that merely measuring an individual's purchase intentions changes his or her subsequent behavior in the market. Several different alternative explanations have been proposed to explain why this "mere-measurement effect" occurs.

Often in a survey, people are asked their intentions to have a certain kind of behavior, such as losing weight, voting or simply purchase a product. Surveys are made to measure the behavior of people, not influence it. But, scientists have discovered something interesting: when you ask somebody about their intentions, behavior is influenced. They will tend to act in relation with their answer.

This can be called a NUDGE and can be used on private or public spheres.

This effect can be even higher if questions when and how are included. Psychologist Kurt Lewis call these: channels. Little factors that can increase or decrease a kind of behavior. Often, to help people to have good behaviors is only needed taking away some little obstacle on their path instead of pushing them to do what we want them to do.

On 1965, an experiment based on this theory was made by Singer and Jones on University of Yale. The experiment was made with senior students. They had a lesson about the risks of tetanus and how important was to have the vaccination. Vaccination center was inside University Campus. After this lesson only 3% of senior students actually had the vaccine. Another group of senior student had the same lesson but they also receive a map and a calendar. On the map they could find Vaccination center inside Campus, even though they were senior students and they know well University Campus. They were asked to set their schedule on the calendar and set a day to go to have the vaccine. Using both tools a 28% of the students of the second group had the vaccination, 9 times more than the first group. This experiment proves the effectiveness of channels.

That's the reason why I decided to include information and a calendar on the account statement. Using these channels to people set their appointments and nudging them every time they use their carnet (one or twice per month).

Figure 47. Annual carnet inside. Photo by Vitaly Korovin / Unknown

Figure 48. Annual carnet inside, personal info. Photo by Vitaly Korovin / Unknown

Figure 49. Annual carnet inside, calendar and information about the goal. Photo by Vitaly Korovin / Unknown

Touchpoints
Coupons

Figure 50. Coupon. Photo by rineca / Unknown

The coupons are delivered every three months and they are valid for three months (before the next coupon arrives). They are personalized with the information of the member. There are 5 different coupons: Two for the first three-month period (one for the chemical blood test and the other one for the general check-up), one for the visit to the nutritionist (second goal), one for the gynecological visit and pap test (third goal) and one for the mammography and gynecological visit (forth goal).

Touchpoints
Discount card

Figure 51. Discount card. Photo by rusadrianewald / 2007

The discount card allows members of Salud en Cuenta to take advantage of the discounts offered by businesses partners. It works like an ID. Personal information and photo are included in it.

Touchpoints
Checks

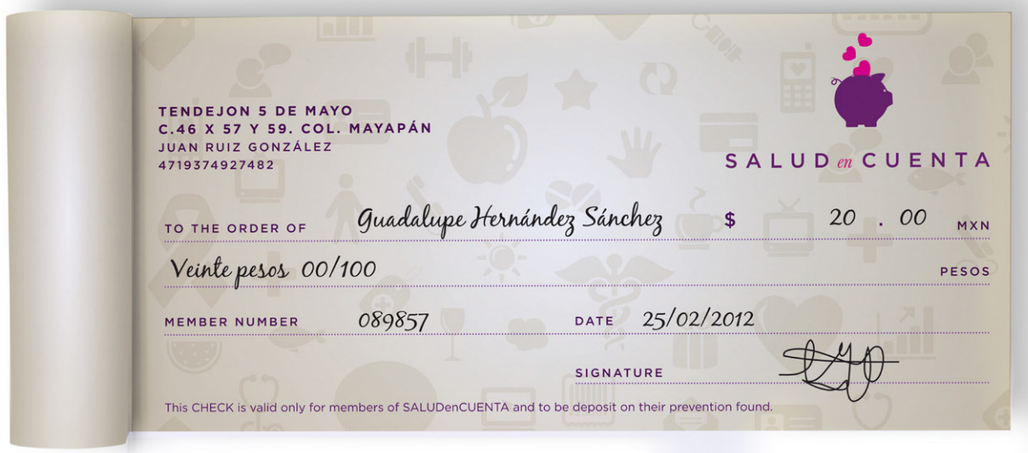


Figure 52. Checks. Photo by Picsfive / Unknown

Businesses partners deliver checks to members when they buy items or use their services. Checks are personalized in two ways: They have the information from the business partner and they have the areas to fill-up with member's information. Checks work like regular checks do.

HOW DO BUSINESS GET THEIR CHECKBOOK?
When they suscribe to the program they will receive a personalize checkbook in approximately 2-3 days. If they are running out of checks, they can order the checkbook and pick it up 2-3 days later.

HOW DO MEMBERS GET THEM?
By buying in one of our business partners they will get a from 2.5% to 10% of the total amount on a check that is going directly to their prevention found.

HOW CAN MEMBERS TRANSFER MONEY?
She can deposit her check visiting one of the branches.

A LOW-TECH SOLUTION
I want that every business can be part of this, no matter if they are big or small. There is no need of a POS terminal, computer nor a mobile phone. In this way even the small "tendejon" around the corner can be a business partner

Touchpoints
Website
Home

Figure 53. Home website. Unknown

Website is divided into: patients and medical staff area. Access to the website is limited to members or partners of Salud en Cuenta and sign in is required in order to protect private information.

Touchpoints
Website
Doctors' Area

Figure 54. Medical staff's area. Unknown

Medical staff's area offers several tools to partners. They can set events, set their visits' calendar, meet other medical staff members, fill and have the register of patients' records.

Touchpoints

Website
Patients' area

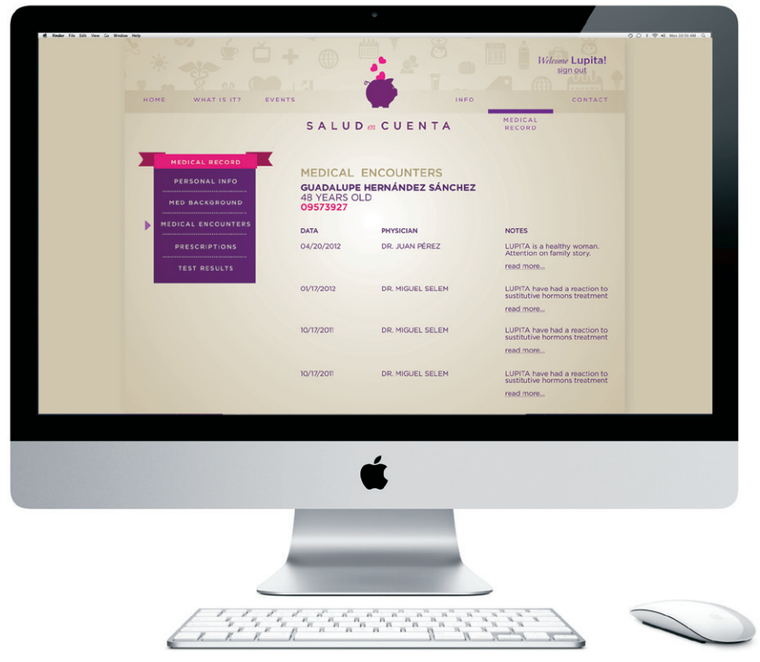


Figure 55. Patient's area. Unknown

Patients' area offers information and facts always related with the three-month goal. There is also an updated calendar with talks and events. The most important feature that members can found is the online medical record, where they can find all their medical information gathered in one place. Information is divided into five categories: personal info, medical background, medical encounters, prescriptions and test results.

Touchpoints
Prescription pad

Salud en cuenta offers also prescription pads to their medical staff. What makes Salud en Cuenta's pads different from others is the contact information. Where numbers and codes to contact the doctor through our Doctor de Bolsillo service are available and clear.

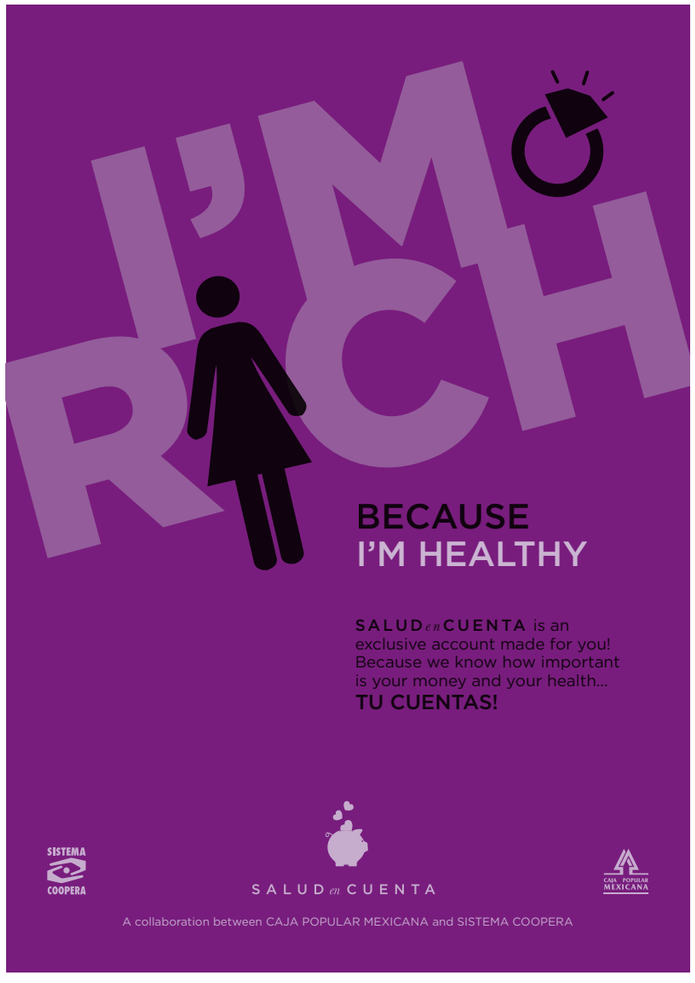
Figure 56. Prescription pad. Photo by Picsfive / Unknown

Touchpoints
Stickers

The stickers are useful to members to identify business and medical partners from outside. They know this is a place where they will receive special treatment just by showing their discount card. Offered discounts go from 5% to 20% depending of the business.

Graphic 29. Stickers

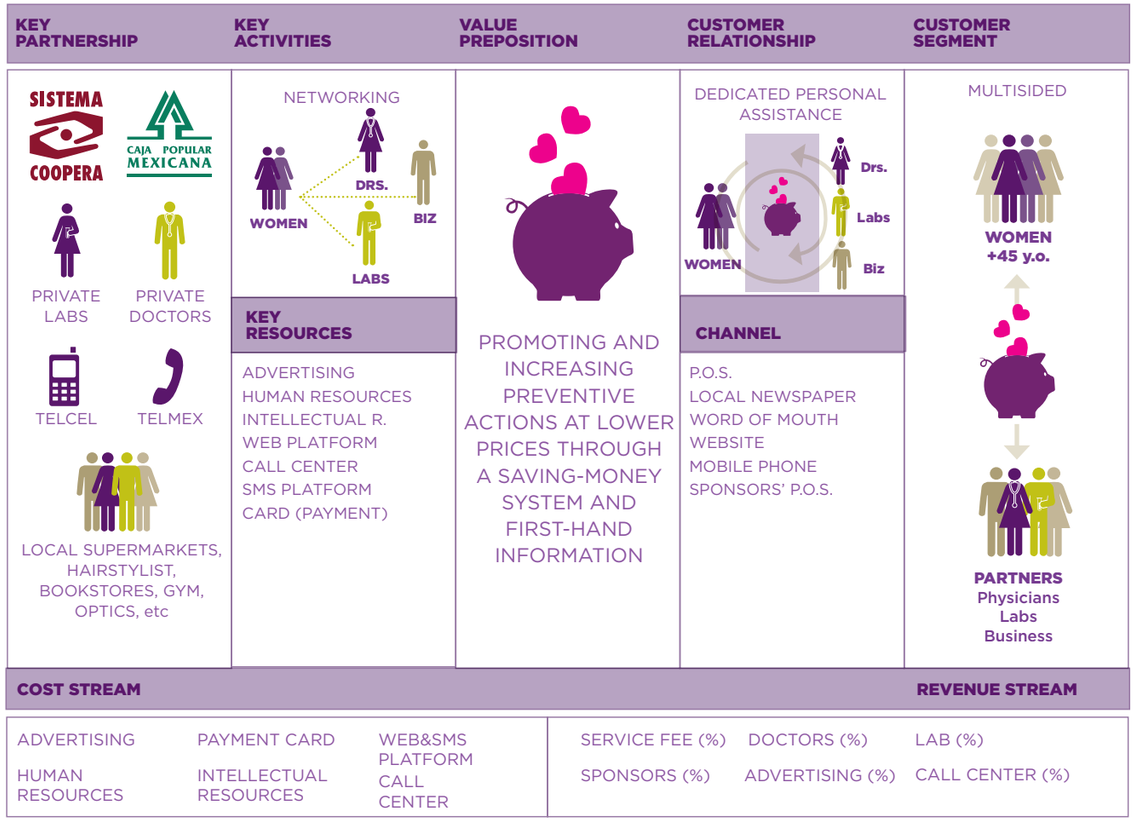
Touchpoints
Advertising



Graphic 30. Ad poster

Advertising campaign is always important to make people aware about a service. For this poster we took an insight from the interviews we made and it become the claim of this campaign.

Business Model



Graphic 31. Business Model

Requirements Table

REQUIREMENTS	MEMBER	SPONSOR	*Medical* PARTNER
Being MEMBER of Sistema Coopera or Caja Popular Mexicana	●	●	●
Being a woman over 45 years old	●		
Having an account	●	●	●
Having an account with more than 5,000 mxn (294EUR)	●		
Mobile phone	Desirable	●	●
Computer with internet access	Desirable		●
Offering a preferential price to MEMBERS		●	●
Having a LOCAL BUSINESS		●	
Being a CERTIFIED PHYSICIAN or LAB			●
Having a PRIVATE OFFICE			●
Having an ONLINE CALENDAR			●
Participate on TALKS	Desirable		●

Table 04. Requirements

Figure 57. Future scenarios. Leeky-Boy / 2009

Future scenarios

Actually, Salud en Cuenta is a low-tech project. In the next future, I think this project could include some of the latest world's trends such as mobile banking. Transactions and the rewarding system could be made through almost every mobile phone.

Patients, in these case women, could become e-patients. Telemedicine could be a reality for every woman no matter where she is. Doctors and patients could be connected in real-time although they are not in the same room. Computers, webcams or even a mobile phone can be the tools included in this project.

On the other hand, if technology is not the answer, people getting together is always the right answer. Car-sharing from rural areas to the city in order to get better medical care is one of my low-tech proposals. It's just people joining forces. Another solutions could be the opposite, doctors getting together and going to rural areas in order to offer this services to people out of the cities. In this way, people will have the best care possible without traveling miles and miles.

Conclusions

Salud en Cuenta is a project that due to its characteristics can be easily produce and reproduce. I believe in Salud en Cuenta as a feasible project.

This project was made using a human centered design focus and because of this, all its elements were made based on insights or suggestions from our user: senior women in Mexico.

Mexico is starting to be affected by the population pyramid transition. As we have seen during the research phase, overcrowded hospitals are a common factor in the whole Mexican Republic. This project aim is change people's mind– especially women's – from sick-driven to preventive-driven. Because if we people would practice prevention we could avoid those long lines in hospitals or just to get an appointment. This project can help Mexican healthcare system in the next years; we can prepare ourselves to the future. We can keep ourselves healthy just practicing prevention.

Poor quality is what public healthcare in Mexico is offering. Salud en Cuenta can make private and quality assistance affordable for almost every woman in Mexico. Women can get medical care almost without effort. Paying it without notice and avoiding all the "bureaucrazy" – as I call it – procedures that people has to pass thru in Public Hospitals.

Salud en Cuenta engages, empowers and enables senior women through its mechanisms. They receive the most important tool: first-hand information. We want these women to be aware and be able to recognize if there is something wrong with them.

I believe that people getting together can achieve whatever they want. Everyone likes to be part of something bigger. This project gives them the opportunity to participate in this. Doctors, labs and local businesses can participate and help their community just doing what they already do. Through this project private doctors and labs can get more patients. Doctor's 24-hrs commitment with patients is recognized by Salud en Cuenta. It's not uncommon to see doctors answering questions through facebook or even twitter. This is the reason why we have created a tool for all these questions and doubts; doctors can get paid for these actions.

United Nations has claimed 2012 as the International Year of Cooperatives. For this occasion, they are organizing special events and projects. Hoping some day Salud en Cuenta can become a real project; I'm thinking to send them this project because I believe it has all the elements to be successful and possible.

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Bibliography

1. Best K. Design Management: Managing Design Strategy, Process and Implementation, AVA 2006.
2. Clarkson, P.J. and Eckert, C.M. Design process improvement - a review of current practice. Springer 2005.
3. Design Council. Eleven Lessons: managing design in eleven global companies. Desk research report. November 2007
4. Secretaría de Salud. Percepción del estado de salud. 2002
5. Álvarez de Vicencio, Ma. Elena. Realidad de la Mujer mexicana y propuestas para mejorar su situación. 2002
6. Lopez Hernández, Lilia. Historia de la Mujer en México. January, 2007
7. World Health Organization. Constitution of the World Health Organization - Basic Documents, Forty-fifth edition, Supplement, October 2006.
8. Georgia State University. Health Triangle Slides. 1998
9. Gita Sen and Piroska Östlin. Unequal, Unfair, Ineffective and Inefficient Gender Inequity in Health. Final Report to the WHO Commission on Social Determinants of Health. September 2007
10. Garcia-Moreno, C., Jansen, H., Ellsberg, M., Heise, l., Watts, C. H. & On behalf of the who multicountry study on women's health and domestic violence against women study team. 2006
11. Ybarra, Rafael. Ensayos clínicos sólo para hombres. September, 2007
12. CONAPO. El envejecimiento de la población en México. 2005
13. Instituto Carlos Slim de la salud. Manual Tu Salud. Volumen 7. Algo empieza a cambiar 40 a 54 años de vida.
14. Zarate Arturo, Saucedo Renata, Basurto Lourdes, Hernández Marcelino. Principales problemas de salud en la mujer adulta. Un comentario sobre la manera de identificarlos. ACTA MÉDICA GRUPO ANGELES. Volumen 4. 2006: 57-60
15. Colditz GA, Willet WC, Hunter DJ. Family history, age and risk of breast cancer. Prospective data from the Nurses' Health Study. JAMA. 1993.
16. Bronner L, Kanter D, Manson J. Primary prevention of stroke. N Engl Med 1995.
17. Vitale C, Gebara O, Mercuro G, Wajngarten M, Silvestri A, Rosini P. Value of C-reactive protein levels and IL-6 in predicting events levels in women at increasing cardiovascular risk. Maturitas. 2005.
18. López Romo, Heriberto. Niveles socioeconómicos y la distribución del gasto. AMAI 2009.
19. López Romo, Heriberto. Distribución de niveles socioeconomicos. AMAI 2008.
20. Instituto Nacional de Estadística y Geografía. ENIGH 2008. Nueva construcción. Ingresos y gastos de los hogares. 2009
21. Schettino, Macario. Más de la clase media. El Universal. October, 2010
22. IDEO. Human Centered Design Toolkit 2nd Edition.
23. PSFK. Future of Health. Prepared for UNICEF. August, 2010
24. Thaler H. Richard, Sunstein R. Cass. Nugde, La spinta gentile. Feltrinelli Editori. 2009
25. Olsen, George. Persona creation and usage toolkit. 2004
26. Sergio, Fabio. Materials for Design. An introduction to Human Centered Design. October, 2009.
27. NESTA and thinkpublic. Prototyping Framework

Webliography

A. http://www.geohive.com/earth/pop_gender.aspx
B. http://web.worldbank.org/WBSITE/EXTERNAL/BANCOMUNDIAL/NEWSSPANISH
C. http://www.thedailybeast.com/articles/2011/09/18/best-and-worst-countries-for-women-from-iceland-to-the-u-s-to-pakistan-and-afghanistan.html
D. http://www.turntoislam.com/forum/showthread.php?t=80478
E. http://estadistica.inmujeres.gob.mx/formas/index.php
F. http://www.inmujeres.gob.mx/
G. http://www.monografias.com/trabajos76/tres-capas-vida-mujer/tres-capas-vida-mujer2.shtml
H. http://quark.prbb.org/27/027041.htm
I. http://www.tareasya.com.mx/index.php/tareas-ya/primaria/quinto-grado/civismo/1192-Instituciones-encargadas-de-la-atenci%C3%B3n-de-la-salud-en-M%C3%A9xico.html
J. http://news.bbc.co.uk/hi/spanish/specials/2006/salud/newsid_5212000/5212836.stm
K. http://sinais.salud.gob.mx/
L. http://www.who.int/gho/countries/mex/en/
M. http://en.wikipedia.org/wiki/Survey
N. http://es.surveymonkey.com
O. http://www.slideshare.net/pediatria/hist-clin-pediatrica
P. http://www.research2guidance.com/500m-people-will-be-using-healthcare-mobile-applications-in-2015/
Q. http://en.wikipedia.org/wiki/Behavioral_economics
R. http://www.economist.com/node/6772346?story_id=6772346
S. http://www.usingmindmaps.com/
T. http://www.enginegroup.co.uk/service_design/m_page/customer_journey_mapping
U. http://social.un.org/coopsyear/
V. http://www.cpm.coop/
W. http://www.sistemacoopera.com.mx/