

STUDY of the MARKET and ENTREPRENEURSHIP in 它和夫可

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Prefacio

Esta tesis es el resultado de un proceso de trabajo intenso y difícil que hemos llevado a cabo en Beijing. A lo largo de la escritura del proyecto, hemos aprendido mucho. Sobre todo hemos complementado nuestro perfil académico de ingenieros con conocimiento en innovación, gestión y el espíritu empresarial. Además, la oportunidad de investigar y escribir el proyecto en otro país nos ha permitido experimentar otro sistema educativo, aprender una nueva cultura y ver las cosas desde nuevos puntos de vista.

Queríamos expresar nuestro más sincero agradecimiento a toda la gente que me nos ha acompañado durante nuestra estancia en Beijing, así como a nuestros colegas de la ETSETB, los Habaneros, los amigos del Local en Hospitalet e Ibiza.

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Querría darle las gracias a toda mi familia por confiar siempre en mí. En especial a mis tíos y Cristina por todo el apoyo que me han dado. Y sobretodo, a mis padres por todo lo que han luchado por llevar mi familia adelante y regalarme esta vida desde la más profunda humildad.

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También me quiero acordar de algunos que no están. Ellos son mis abuelos y Cheli, gracias por todo lo vivido con vosotros. También os lo dedico.

Por otro lado...

venir a China nos a brindado la oportunidad de vivir y estudiar en un mundo tan diferente que nos ha motivado a escribir un libro. Para los más curiosos y quienes quieran conocer el mundo paralelo que se vivió realizando esta tesis, les invitamos a leer "2 petaos en Pekín", un libro que con nuestro carácter emprendedor esperamos publicar este año, 2011.

1. Introducción (español)

1.1. Motivación

China se está convirtiendo en una de las potencias económicas a nivel mundial, y si sigue así, los estudios dicen que en 20 años se posicionará como líder indiscutible tanto por la magnitud de su mercado interno como por la evolución de crecimiento de la renta por capital. Estamos ante la primera potencia mundial en cuanto a población (1300 millones de personas, más del 20% del total mundial) y ya se ha convertido en la segunda economía mundial (PIB de 6 billones de US\$ en 2010). Asimismo, la República Popular China ocupa el cuarto puesto mundial cuanto a superficie geográfica (9,6 millones de kilómetros cuadrados, viéndose sólo sobrepasada en tamaño por Rusia, Canadá y los EEUU).

La grandeza de su mercado interior, con una clase media en continua expansión, también lo posicionan como un futuro líder. Este hecho está conduciendo a las empresas de todo el mundo a posicionarse como exportadoras y en inversiones directas.

En este sentido, tanto empresarios como instituciones o académicos están acostumbrados a trabajar en un entorno occidental, donde existe una amplia infraestructura informativa, dotada de sistemas estadísticos sólidos y homogéneos. En Europa se cuenta con numerosas referencias que tratan caso todos los aspectos necesarios que un directivo ha de analizar antes de decidir cómo gestionar los recursos de su empresa.

Sin embargo, esta realidad no es aplicable a las decisiones de internacionalización en China. La República Popular China no es sólo un país de tremendos contrastes, sino una economía en vías de desarrollo que no cuenta con fuentes de información veraces y carece de una infraestructura mínima de gestión de datos. Así, el directivo europeo se enfrenta en China a la necesidad de tomar decisiones estratégicas sobre un mercado muy complejo, sin contar con el más básico elemento: Información.

Tradicionalmente la inversión extranjera se ha concentrado en la exportación de productos de fabricación oriental. La mano de obra china sigue siendo una de las más atractivas del mundo en cuanto a su relación salario / calidad. Sin embargo, en los últimos años, se ha producido un cambio gradual hacia la venta de mercancías y servicios dentro del propio mercado chino.

Pero el enfoque de las políticas de apoyo al emprendimiento en China divaga mucho en función del origen de la empresa, y las actuaciones que se quieren llevar a cabo en el país. Por ejemplo, la administración china da apoyo al emprendimiento a empresas Chinas, ofreciendo facilidades y ayudas para conseguir empresas competitivas a nivel mundial, y no estancarse operando sólo en un mercado interno. Al contrario pasa con las empresas extranjeras que quieren lanzar su producto en China. A estas, las dejan entrar y crear productos para después exportarlos a sus países, pero les ponen las cosas difíciles si lo que intentan es posicionarse en la venta del producto en territorio chino, ya que la administración pone barreras a las empresas extranjeras e impulsa a empresas chinas a que sean ellas las que controlen el mercado interno. Por eso hacer negocios en China requiere de un análisis profundo, una evaluación rigurosa de las oportunidades, de los posibles socios, de las limitaciones

regulatorias, de las decisiones que han tomado otras empresas y pueden influir sobre el mercado futuro y sobre un proyecto nuevo.

Sin embargo, China presenta una serie de peculiaridades que es necesario conocer por todo aquel que desee realizar negocios en el país: la existencia de un marco legal todavía en plena evolución y en constante cambio, la elección del emplazamiento o el sistema impositivo son algunos de los aspectos que todo empresario necesitará estudiar para llevar a buen término su estrategia en un país que presenta sustanciales diferencias con occidente.

Si eres una empresa extranjera, es de gran atractivo producir en China ya que ofrece una mano de obra barata, pero no es de extrañar, que al cabo de unos años, veas como el producto occidental ha sido copiado por una empresa china sin apenas poder hacer nada. Es por ello que veremos el sistema de protección intelectual industrial en China. Como está regulado y la continua lucha de los países occidentales que opera aquí para que no plagien sus productos. La fama que tiene China de ser copiadora es cierta pero veremos también como la situación está cambiando. Japón, EE UU, Alemania, Francia, Reino Unido o España se ahogaron en la crisis (y ahora en la post-crisis) y recortaron drásticamente su gasto en I+D e innovación. China, sin embargo, no ha parado de aumentarlo.

1.2. Estructura

Primeramente, en el apartado 2, analizaremos como se encuentra el sector de las Tecnologías de la Información y la Comunicación en China. Como estudiantes de telecomunicaciones, nos movemos por el interés de las TIC. El estudio pone de manifiesto, que en el sector de alta tecnología, el gobierno de China está poniendo mucho interés, y por tanto, es donde se abrirán más oportunidades de negocio en el futuro para empresas extranjeras. No obstante, a pesar de tener puntos fuertes como ser la gran productora de hardware del mundo, durante el estudio veremos sus puntos débiles, como quedará al descubierto que China es una gran copiadora de tecnología extranjera.

Una vez estudiado el sector de las TIC en China, en el apartado 3 veremos las oportunidades que nos ofrece China para emprender un negocio en este país. Tras esto, en el apartado 4, se podrá ver como China hace frente a la fama de plagiadora mostrando su cara más innovadora.

Después de ver el panorama del mercado chino, con sus virtudes y defectos, pensaremos en lanzar un producto aprovechando al máximo los beneficios de éste. Queremos englobar todo lo aprendido de nuestro estudio en China haciendo un plan de negocios que sería el caso real de nuestro proyecto final de carrera. Así que en el apartado 5 nombraremos todos los puntos tácticos que utilizaremos en nuestra empresa, recopilado de lo aprendido. Quedará recogido el porqué de la idea empresarial, las ventajas de lanzarlo en China, así como el equipo fundador necesario para sacar el máximo rendimiento posible a este producto tecnológico.

Finalmente, en el punto 6 extraeremos una conclusión final, en donde una vez realizado el estudio del mercado y del emprendimiento en China, recoja nuestra reflexión y punto de vista.

Adjuntaremos un punto 7 que será el plan de negocios. En él se presentará nuestra idea empresarial, utilizando todo recolectado en los apartados anteriores. Representa el caso práctico del nuestro proyecto.

1.3. Metodología

La filosofía de trabajo ha sido ver China desde dentro, observando cómo opera esta cultura. El idioma, la cultura, la censura de websites que rige el gobierno chino han dificultado la elaboración de esta tesis.

Nuestro medio donde recolectar información técnica ha sido Internet. Pero el valor añadido a este proyecto se lo hemos dado gracias a todas las experiencias vividas en el día a día y relatos de gente que ha emprendido en China.

1.4. Agradecimientos

Debido a la diferencia del sistema educacional del BIT, esta tesis comenzó siendo un proyecto creado por nuestra cuenta hasta que Pere Losantos desde Programa INNOVA de la UPC nos ha ayudado y orientado a realizar un trabajo más interesante. Por ello queremos darle las gracias por su seguimiento. También ha sido un apoyo para nosotros Carolina Consolación, que como profesora siempre nos ha motivado y enseñado a dar el máximo de nosotros. Queríamos darle las gracias a nuestras supervisoras en China Qiao-Mei Liang y Zhen-Jiao Chen. También a nuestro amigo economista mejicano Adriel González, que sin su ayuda, nuestro periodo de adaptación en un país tan diferente hubiera sido mucho más duradero, y no hubiéramos llegado a entender igual como funciona este país sin su experiencia.

1. Introduction

1.1. Motivation

China is becoming one of the global economic powers, and if it continues like this, the studies say that in 20 years, it will be positioned as the undisputed leader both for the magnitude of its domestic market as the evolution of growth of renda per capital. It is the first world power in terms of population (1300 million people, over 20% of world total) and has already become the world's second largest economy (GDP of U.S. \$ 6 billion in 2010). Similarly, People's Republic of China (PRC) ranks fourth in terms of geographical area worldwide (9.6 million square kilometers, looking surpassed in size only by Russia, Canada and USA).

The greatness of its domestic market, with an ever-expanding middle class, also helps them to position themselves as a future leader. This is leading to companies worldwide to position itself as exporter and direct investors.

In this sense, both employers and academic institutions are accustomed to working in a Western environment, where there is a wide information infrastructure, equipped with sound statistical systems and homogeneous. In Europe there are many references which deal with all aspects necessary that a manager has to analyze before deciding how to manage corporate resources.

However, this reality is not applicable to decisions of internationalization in China. The People's Republic of China is not only a country of tremendous contrasts, but a developing economy that has no source of accurate information and lacks basic infrastructure for data management. Thus, the European executive in China faces the need to make strategic decisions on a very complex market, without the most basic element: information.

Traditionally, foreign investment has concentrated on the export of manufactured products East. The Chinese labor remains one of the most attractive in the world in terms of ratio wage/quality. However, in recent years, there has been a gradual shift towards the sale of goods and services within the Chinese market itself.

But the approach of policies to support entrepreneurship in China wanders greatly depending on the origin of the company, and the actions that are to be carried out in the country. For example, China supports entrepreneurship of Chinese companies providing facilities and assistance to achieve globally competitive companies, and don't stagnate in a domestic market. With foreign companies wanting to launch its product in China the opposite is true. They are allowed to come in and create products to export to their countries, but China makes things difficult if they are trying to position itself in the sale of the Chinese territory, because the administration puts up barriers to foreign firms and encourages Chinese companies that they are the ones that control the domestic market. That's why do business in China requires a deep analysis, a rigorous assessment of the opportunities, potential partners, regulatory limitations, the actions taken by other companies and they can influence the future market and a new project.

However, China has a number of peculiarities that must be known by anyone wishing to do business in the country: the existence of a legal framework is still evolving and constantly changing, the choice of location or the tax system are some aspects that every entrepreneur shall to study to perform his strategy with success in a country with substantial differences with the West.

If you are a foreign company, is very attractive producing in China as it offers a cheap labor. But it is not surprising that after a few years, is possible see as the product has been copied by a Chinese company with couldn't do anything. That is why we will study the industrial intellectual property protection system in China. How is regulated and the ongoing struggle of Western countries which work here to avoid their products be copied. China's reputation of being a copy machine is true but we will see also as the situation is changing. Japan, U.S., Germany, France, UK and Spain were drowned in the crisis (and now in the post-crisis) and have slashed its spending on R & D and innovation. China, however, has not stopped increasing.

Analyzing the Chinese market, with its strengths and weaknesses, we will think about launching a product maximizing the benefits of the Chinese market. Before that, we'll make a thorough study of a leader technology in the industrial world to set it up in our product. We have chosen the RFID technology. Today this technology is primarily used in distribution companies, but is also present in hospitals, automatic payment of tolls on highways or in the identification of people and animals, among many other applications. This technology will have a major impact on the daily activities of enterprises, institutions and citizens as they are tagging more products and be encouraged the emergence of new applications and services based on RFID.

1.2. Structure

First, in section 2, we will analyze how is the Information Technology and Communication sector in China. As students of telecommunications, we are moving by interest of the ICT. The study shows that in the high technology sector, the government of China is putting a lot of interest, and therefore, which open more business opportunities in the future to foreign companies. However, despite their strengths as being the major producer of hardware in the world, during the study will see their weaknesses, as will be revealed that China is a great copier of foreign technology.

Having studied the ICT sector in China, in paragraph 3 will see the opportunities offered by China to start a business in this country. After that, in paragraph 4, it can be seen as China faces the fame of plagiarized showing its most innovative face.

After seeing the panorama of the Chinese market, with its virtues and defects, we will think to introduce a product taking full advantage of profits. We encompass all learned from our study in China doing a business plan that would be the actual case of our final project. So in paragraph 5 shall name all tactical points we will use in our company, compiled the lessons learned. Will be reflected the reason for the business idea, the benefits of throwing it in China,

and the founding team needed to get the best performance possible in this technological product.

Finally, in section 6 we extract a final conclusion, where after completing the market research and entrepreneurship in China, collected our thoughts and views.

We enclose a section 7 which will be the business plan. It will present our business idea, using all collected in the previous sections. Represents the practical case of our project.

1.3. Metodology

The philosophy has been to see China from within, analyzing how this culture operates. The language, culture, censorship of websites that governs the Chinese government have hindered the development of this thesis.

Our means of finding information has been the Internet. But the added value to this project, it has been thanks to all our experiences in day to day, and the experience of people who have done business in China.

1.4. Acknowledgements

Due to the difference in the educational system of the BIT, this thesis began as a project created by our account until Pere Losantos from the INNOVA Program department of the UPC helped us and guided us to do more interesting work. So we want to thank you for your follow-up. It has also been a support to us Consolation Carolina, who as teacher always has motivated us and taught us to give our maximum effort. We would like to thank our supervisors in China Qiao-Mei Liang and Chen Zhen-Jiao. Also to our Mexican economist friend Adriel Gonzalez, who without their help, our period of adaptation in a country so different would have been much longer and not as we didn't understand the culture of this country without their knowledge.

2. Theoretical Framework

2.1. Overview of ICT

In 2007 global sales of ICT products and services reached \$ 2,130 MM (MM are million) which represents a growth of 5% over the previous year (2,020 MM \$). Worldwide expected a reduction in spending aimed at ICT as a result of the economic slowdown affecting the U.S. today, which is having repercussions in other developed countries. In this context, the Asia Pacific region is presented as offering the best prospects, as is expected to grow over the coming years at rates not less than 5% annually. Driven economies such as China and India, the region has become not only one of the most attractive markets because of its size, but also one of the main centers of development and production of ICT products and services.

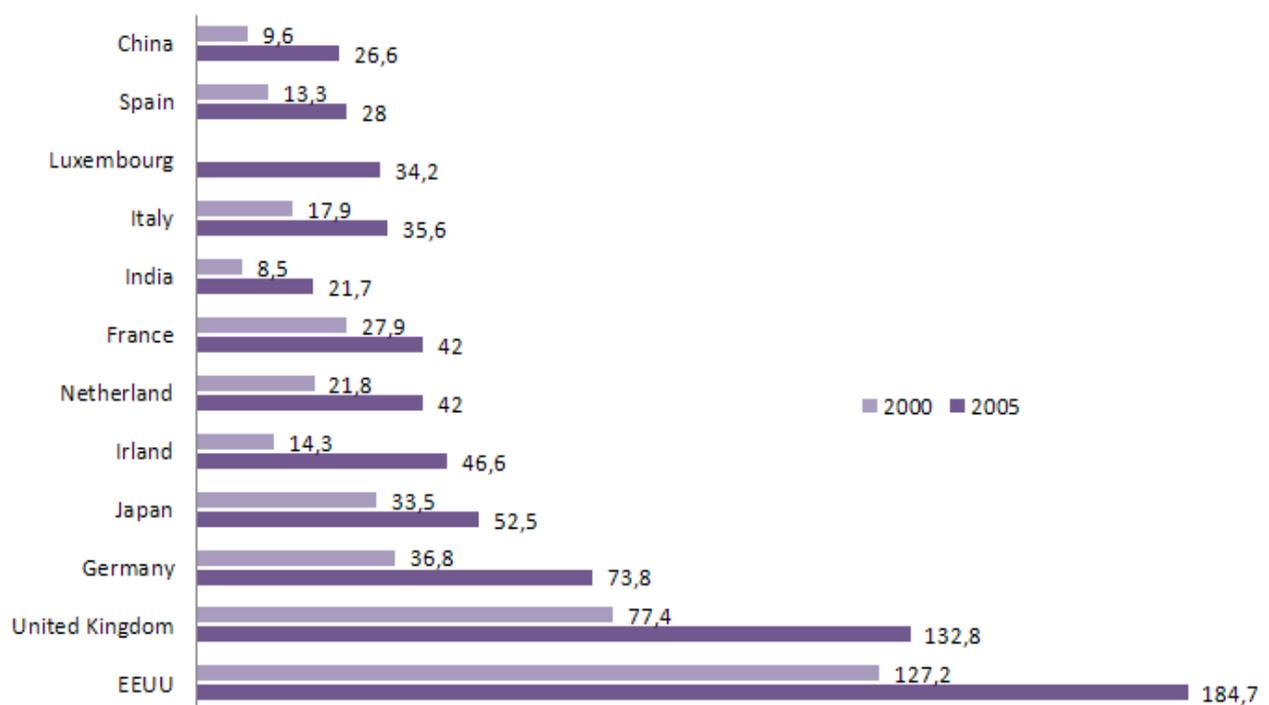
The case of China is characterized by a large exporter of products related to information technology (mostly hardware), a field in which India has a much smaller presence. However, India is characterized by its leadership in the field of ICT related services, being one of the most dynamic countries in the sector, while in China the service industry related to ICT is still primarily defined in terms internal.

In the same way, China and India have the penetration rates of mobile highest worldwide, 9% and 8% respectively, which suggests that a progression towards the year 2011 will be achieved quotas 28% of global mobile phone market between the two countries. Of the 1.2 billion new mobile phone subscribers expected worldwide, it's estimated that India and China represent between two and over 60% of the total.

The global ICT industry is growing driven by two different engines. In mature markets like Europe and the United States, the growth rate is incremental, with the emergence of new services and products that improve the performance of existing products, resulting in a gradual replacement of previous generations of technology.

This is the case, for example, successive generations of mobile services, as well as new types of business management software that appear on the market. Instead, the logic of the emerging countries growth is still based on the penetration of basic services in relatively new markets. The penetration of mobile phones, the Internet or broadband solutions for business management is still very low in markets like China and India. However, having come later when access to these technologies, emerging countries are also able to skip steps in the path of evolution, and therefore can be taken at once to the latest technological converge faster with the developed countries.

Top 10 countries exporting products and services related to ICT over Spain and China (billion dollars)



Moreover, worldwide there is a growing convergence among all the accused subsectors that make up the ICT industry. For example, mobile communications are being integrated with fixed communications (with dual network phones cellular-wireless), software applications are coming out of corporate offices (such as e-mail service providing companies Blackberry), or integration between the traditional voice services and business management software advanced messaging platforms using voice over IP (VOIP). These developments and transformations that make the borders between the competitive environments, that were clearly defined until now, dissolve. Nowadays, the mobile phone providers are now competitors of Internet access providers, the Internet portals offer services and software management tools free way when previously it had to purchase to commercial suppliers. All is set in a competitive environment in constant evolution and redefinition.

2.2. The ICT sector in China

2.2.1. Introduction and overview

The technologies of information and communication (ICT, ICT or ICT for New Technologies of Information and Communication and IT for "Information Technology") group elements and techniques used in the processing and transmission of information, mainly computers, Internet and telecommunications.

It is said that China is in manufacturing of ICT products like India is in provision of ICT services. The reality is that, indeed, today China is known as one of the main production centers of ICT products and only in 10 years has become the leading exporter of this kind of products worldwide.

Of \$ 18.5 MM that they exported in 1996, increased to \$ 235 MM in 2005, beating the United States where during the same year he recorded exports worth \$ 154.9 MM. Unlike the ICT products, ICT services segment has not reached the same level of development, because it is more knowledge-intensive and still has a limited local demand.

The sector is set by a mix of local and international companies. The latter used the country as a base for their production, mainly destined for international markets and to a lesser extent, the domestic market. Local businesses, especially the big ones, spend much of their production to the local market and international level. Currently, the ICT sector represents 9% of GDP¹ national and 34.4% of total trade of the country, and is expected that the expansion of BPO services² contributes to increase this figure to 38% in 2012.

The ICT have allowed some of the work of enterprises can be made in different places, and even more, which is done by other specialized companies at a lower cost.

Nowdays, many of the common functions are outsourced to companies so that you can concentrate on your business and strategy. It is common that the customer attention is contracted to a company specializing in receiving and making telephone calls (contact center or call). Another area that is commonly delegated to a third, is the human resources management (payroll, recruitment and selection, among other activities). Other areas of the company which are candidate to be drawn are the accounting and finance, and technology management.

2.2.2. Importance within the global context

In just 10 years, China has become the leading exporter of ICT products in the world, exporting from \$ 18.5 MM in 1996 to \$ 235.1 MM in 2005, growing at a CAGR³ of 32.6 NOTE % during this period. United States is the second leading exporter with \$ 154.9 MM and Japan with \$ 121.4 MM is the third. However, unlike China, which registered annual growth rates around 30%, these countries recorded growth rates below 3%.

With regard to ICT services, we have that China is still far from the main leaders in this field, USA, UK, Germany, Japan and Ireland. In 2005 the value of exports of IT services reached \$ 26.59 million, while the U.S. reached \$ 184.6 MM. Although not yet a major exporter of ICT

¹ "Gross Domestic Product" is the sum of all final goods and services produced by a country or an economy, whether they have been prepared by national or foreign companies within the country, that register in a given period (usually one year). GDP is used as a measure of material well-being of society.

² Business Process Outsourcing (BPO) is the subcontracting of process functions of business in service providers, whether internal or external to the company, usually in places with lower costs.

³ The compound annual growth rate (CAGR) is a specific term of business and investment to smooth annualized gain of an investment over a given period of time.

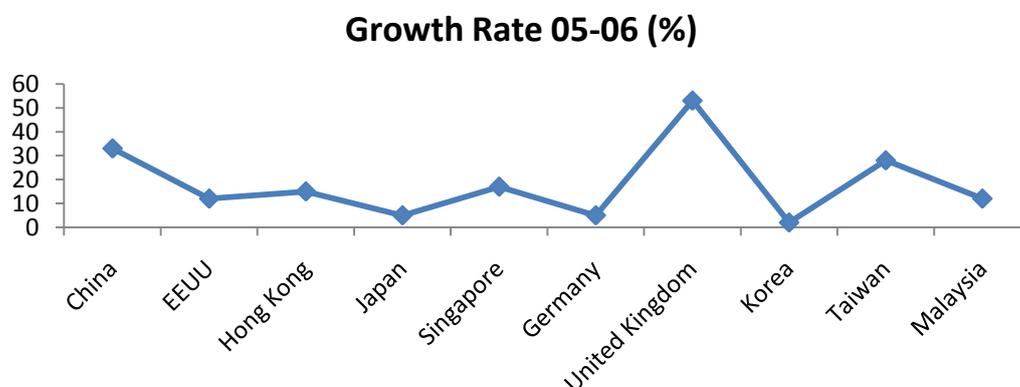
services worldwide, the country is expected to take center stage. Thus, if during the period 2000-2005 in this segment grew by 22.5% between 2005 and 2010 is expected to grow at a CAGR of 25%.

Major exporting countries of ICT products, 1996-2005				
Country	1996	2000	2005	CAGR (1996-2005)
China	18,5 MM\$	46,9 MM\$	235,1 MM\$	33%
EEUU	123,8 MM\$	182,2 MM\$	154,9 MM\$	3%
Japan	103,2 MM\$	123,5 MM\$	12 MM\$	2%
Hong Kong	37,6 MM\$	55,3 MM\$	118,2 MM\$	14%
Singapore	67,7 MM\$	77,3 MM\$	106,5 MM\$	5%
Germany	42,8 MM\$	57,4 MM\$	99,1 MM\$	10%
Korea	34,3 MM\$	61,5 MM\$	87,1 MM\$	11%

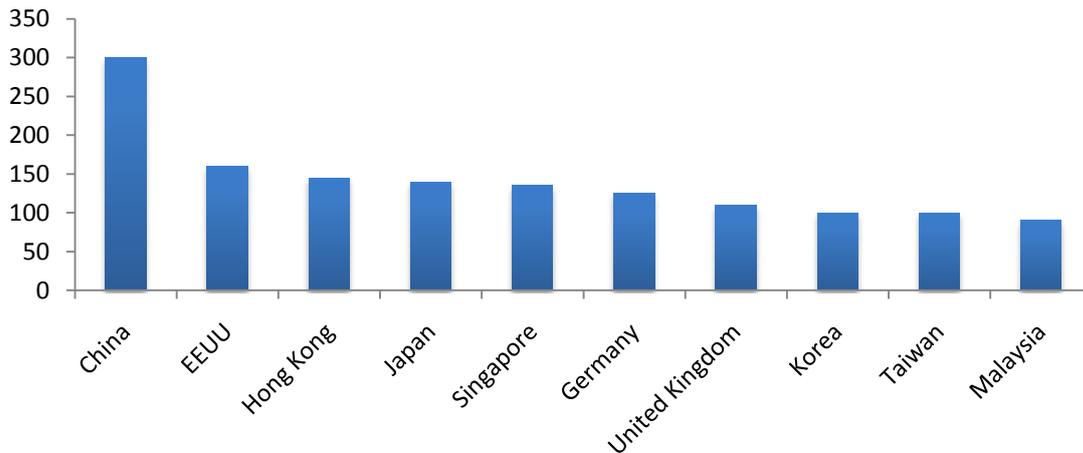
Source: UNCTAD

2.2.3. The Chinese market

The sector of ITC in China is divided into two groups: products and services. The market for ICT products, hardware and telecommunications equipment in China is a market with a clear export orientation, although some business segments (particularly in the area of telecommunications) are not yet in a sufficiently high level of local development to be competitive outside the domestic market. Mainly attracted by the advantages offered by the country in terms of cost, many major multinational companies have established their production bases in China. The dynamism of these companies added to the local, has allowed China to become the leading exporter of ICT products worldwide in a relatively short period of time. Exports of ICT products are used primarily in the United States, Hong Kong and Japan. It is important to note that in recent years the economic growth of Chinese companies and a higher per capita disposable income, have also going to increase domestic demand for such products.



Major exporting countries of ICT products, 2006 (MM \$)



ICT services have a very different situation, where 85.6% of its production is destined to domestic market. As a result of the process of modernization that are carrying out Chinese companies, over the next few years the domestic demand for software and ICT services recorded growth rates of around 15% and 25% annually. Much of this demand, currently, is covered by a large number of local companies that have the same capability or degree of specialization than their Western counterparts. Of 14.4% for export, a large percentage (10.4%) comes from services BPO (Business Process Outsourcing). This segment is expected to reach a turnover of \$ 1,5 MM in 2012, being the Japanese companies its main clients.

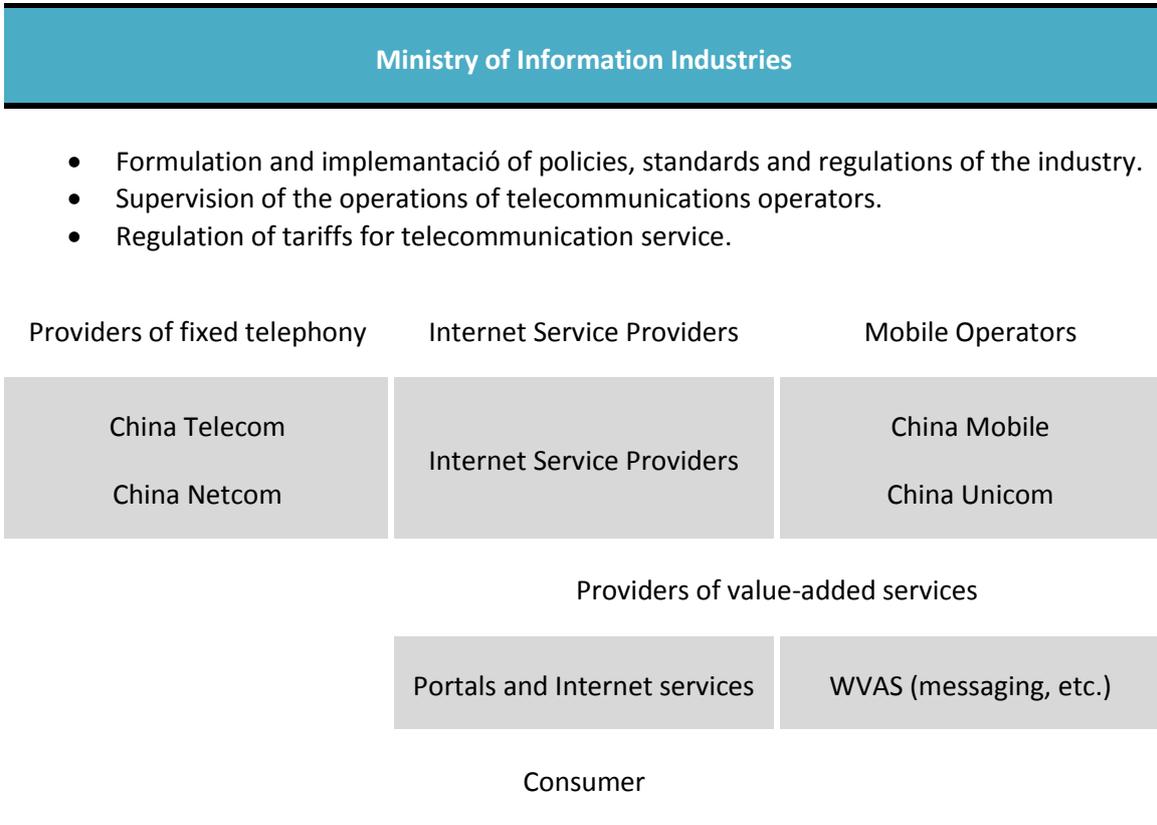
Finally, with regard to telecommunications, the mobile market has continued to grow considerably in recent years. If in 2000 the penetration rate was only 6.5%, in 2007 it was 40%. During the next years is expected to increase considerably, reaching 56% by the year 2012. This growth was a direct consequence of the increase in average income per capita, which has enabled a greater number of people buy a mobile phone. It is expected that specific services for this segment reach sales worth \$ 14 MM in 2012. The mobile content segment is dominated today by local companies, which have the advantage of knowing the local idiosyncrasies and take relationship with operators, but have not developed a local supply of services with high added value comparable to that of other countries.

2.2.4. Sector Structure

The main agent of the ICT sector in China is the MII (Ministry of Information Industry). This ministry is responsible for formulating and monitoring compliance with all regulations that refer to the functioning of markets for telecommunications and other related technologies. The MII has a high degree of influence over operators of communications, and monitors and guides the development of the market.

Moreover, there is a strong presence of international companies, who have been using the country as a production base for export. This phenomenon has affected positively the local

tissue development, which apart from providing incipient local market, competes in international markets at low cost segment.



2.2.5. Geographical concentration of activity

ICT activity in China is mainly concentrated on the east coast of the Chinese territory. The MII (Ministry of Information Industry) established new bases of information technologies with the aim of consolidating the existing productive. These are the cities of Beijing, Tianjin, Qingdao, Suzhou, Shanghai, Hangzhou, Fuzhou, Shenzhen and Guangzhou.

ITC Bases in CHINA



Source: China Daily

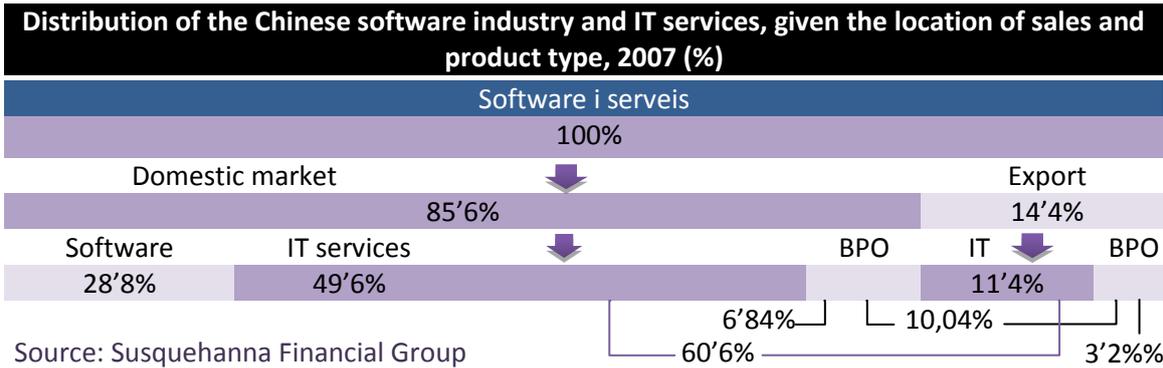
Location of the main mobile phone production plant in China by the multinationals (2007)

Company	Location of production plant
Nokia	Beijing, Dongguan
Motorola	Tianjin, Hangzhou
Samsung	Tianjin
Sony-Ericsson	Beijing
LG	Beijing, Yantai
Sanyo	Tianjin

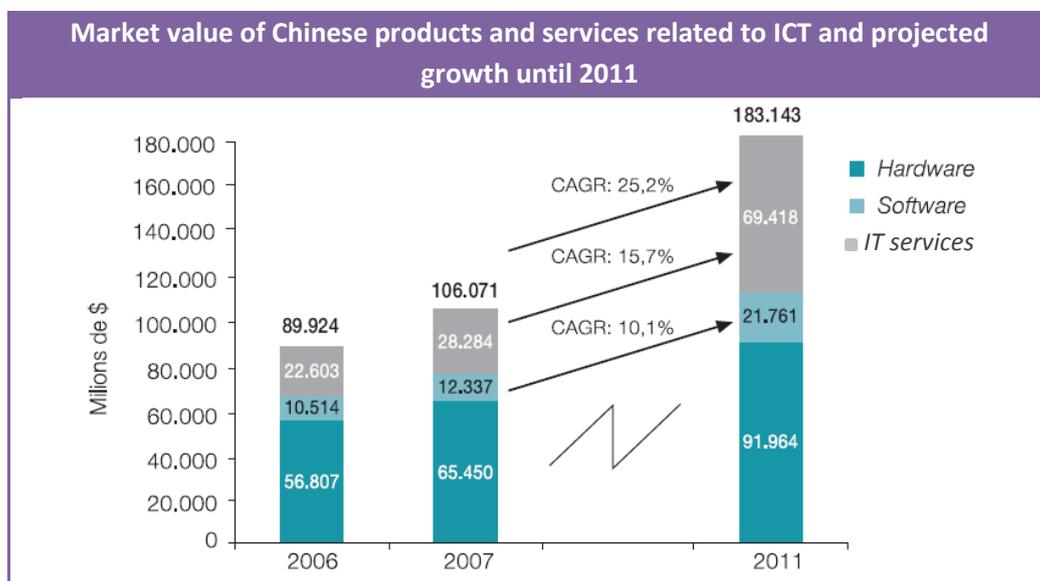
Source: InterChina Consulting

2.2.6. Location and growth prospects

In 2006, the ICT sector accounted for 34.4% of total trade of China with exports worth nearly \$ 235 MM. Moreover, China's domestic market has also grown very significantly. The hardware still represents approximately 60% of the value of the domestic market, but this proportion is expected to fall to about 50% in 2011. This change is motivated by strong growth in domestic consumption of software and IT services, according to the Chinese tissue business grow and gain in sophistication. Currently, the ICT sector represents 9% of GDP.



Domestic market is expected to grow between 2007 and 2011 at a CAGR of 15.3% and reaches \$ 183 MM. The turnover broken down by segment is as follows: \$ 92 MM in hardware (CAGR 10.1%), 70 MM \$ in IT services (CAGR of 25.2%) and finally \$ 21 MM in software (CAGR of 15.7 %).



This growth will be mainly given by:

Development of domestic market

- Growth in its domestic market (sixth world market ICT), in particular, users of telephone services and Internet, which will be multiplied by eight, during the period 1998-2004. The development of a wealthy middle class of 100 million people have already positively impacted sales in the domestic sector.

Production base for multinational companies

- Large presence of industrial enterprises of countries that invest in China, looking to develop their processes on the continent more labor intensive, given the advantages in terms of cost (salary, investment, etc.). offered by the country.

- Not surprisingly, then, that the country is the main recipient of FDI worldwide, since, apart from these advantages, the government actively through a series of measures, has continually sought to attract investment in the country.

Ad Hoc Public Policy

- The Chinese government considers this sector one of the mainstays of the country's future growth and is actively promoting its development. On the one hand, the Ministry of Science and Technology has established High-Tech Development Zones (ZDHT), the aim of which is to use technological capabilities and resources of research centers, universities and large enterprises and medium to develop new high technology products and market innovations. On the other hand, the Ministry of Information Industry (MII) defined new rules of information technologies in order to promote even further the sector and promote regional development. The objective of these areas is to develop more sophisticated products and proprietary technologies, helping to integrate the value chain and facilitating industrial development as technology clusters of industries. In the same way, the ISI was developed specifically for development schemes in 23 segments ICT (mobile phone, digital TV, automotive electronics), which are key factors to support growth.
- Finally, the various projects of infrastructure development, promoted by the Government with the participation of multinational companies, have favored a reduction in the price of services, particularly those related to access to Internet and mobile acting as a factor driving consumption.

In short, thanks to the technological growth of SMEs, the rapid growth of foreign companies, a favorable tax policy and improving the competitiveness of public companies, will allow development of a strong market for information technology in China .

Despite government efforts to turn China into a major destination for offshoring of IT services and BPO, the country still presents a series of questions that influence the development of these segments. In recent years the Chinese government has invested large sums of money, mainly in the form of business parks equipped with the latest technology in order to attract foreign companies and thus promote the growth segments in question.

Some experts suggest that these government incentives are not sufficient to counteract the weaknesses presented by the country, especially against India, the main recipient of such services. First, in China the use of English is not as widespread as in India, and there are shortcomings in terms of developers and managers with a broad level of English. Second, the process for establishing joint ventures, it is extremely bureaucratic and slow. Third, the quality levels are generally below those of India and, more importantly, there are serious doubts about the protection of intellectual property.

In addition, direct access to the local market of ICT products is still difficult for foreign companies. The main disadvantages are the difficulty of adapting to cultural differences in consumer tastes and preferences, a thriving market of pirated substitutes, as well as the lack of a transparent legal system. But certainly, the tendency by the Chinese government to promote and protect local businesses is what is preventing the entry of more foreign

companies to the local market. In a way, shows how the Chinese government gives all the facilities to attract investment in those sectors which is the destination of exports (offshoring of IT services and BPO) and, moreover, does not facilitate the entry of companies seeking to benefit the local market (hardware, software and telecommunications equipment goods).

2.2.7. Analysis of opportunities in major sectors

The hardware segment

- The value of production of hardware for computers is expected to grow between 2007-2011 at a CAGR of 10.1% and reach a turnover in 2011 of 91 MM \$. In fields such as computer manufacturing, China has clearly displaced the traditional producing countries such as the United States, but also the emerging countries as Taiwan, becoming the world's largest exporter of such products.
- This has been possible thanks to the fact that a large number of multinational companies have decided to use China as a production base to take advantage of the quick growth and low costs offered by the country. In 2005 China attracted foreign investments worth \$ 21 MM in the sectors of telecommunications equipment, computers and other electronic equipment.
- Exports of ICT products from China were mainly destined to the United States, Hong Kong and Japan, and have grown greatly their weight in the Chinese economy. Thus, in 1996, exports of ICT goods accounted for 12% of all exports of goods, while in 2006 came to represent 31%.
- Despite exporting vocation, China is still importing hardware, particularly in the field of telecommunications equipment for more value added. However, it is expected that, as has happened in other industries, China advance in the value chain of manufacturing hardware, and a good portion of these imports will be gradually replaced by local production.

The software segment

- The software industry has long been less developed than other subsectors such as electronics or hardware. The main barriers that historically have impeded the growth of software sector has been the weakness of local demand, fragmentation and relative lack of sophistication of local companies, as well as the high degree of hacking.
- In 2005 there were only 400 companies in China with revenues of over \$ 500 M, which are the largest customer of informatic solutions, while the United States there are more than 3,100, fact which speaks of the still limited local demand for such products.
- Moreover, the low cost of manpower in some sectors has little incentive to replace it with investments in computer systems. However, begin to see that wages the major industrial centers of China, including Shanghai, Shenzhen and Guangdong, are rising rapidly.
- As a result of this weakness of domestic demand, the software industry in China is set by a large number of small businesses with low sophistication. It is estimated that

there could be operating in the sector 10,000 companies, of which the top 10 have a combined market share of only 20%, while in India this figure reaches 45%. In addition, in 2005, only 6 of the 30 largest companies of software had the Chinese certified (CMM⁴), while in India, the 30 largest companies are certified, having met most of them the level 5 of this certification, considered the highest.

- However, it is expected that this situation will change gradually as a result of fundamental changes in the nature of demand, government support and improvements in the regime of protecting intellectual property. The government support will be key to the development of Chinese software industry. The year 2000 was a particularly important milestone in this direction when it enacted the so-called "Document 18", which put up the "Measures to encourage the development of the software industry and integrated circuit industry". This document was offered to Chinese companies in the sector benefits as tax breaks, subsidies and cuts in tariffs on imports of vanguard technology.
- The Chinese government is aware that its plans to grow a native software industry, involve a greater commitment to the protection of intellectual property, an essential ingredient to foster innovation of Chinese companies. In this regard, the government wants to set an example by requiring that all software purchases for the administration of the State are made legally, and that all computers on sale in China include officially licensed operating systems. However, it remains a long way to go before these requirements are transformed into reality.
- With these changes, provided strong growth for the Chinese market solutions and IT services. It is expected that software sales in China could reach almost \$ 21.7 MM in 2011 with an average annual growth of 15.7%.

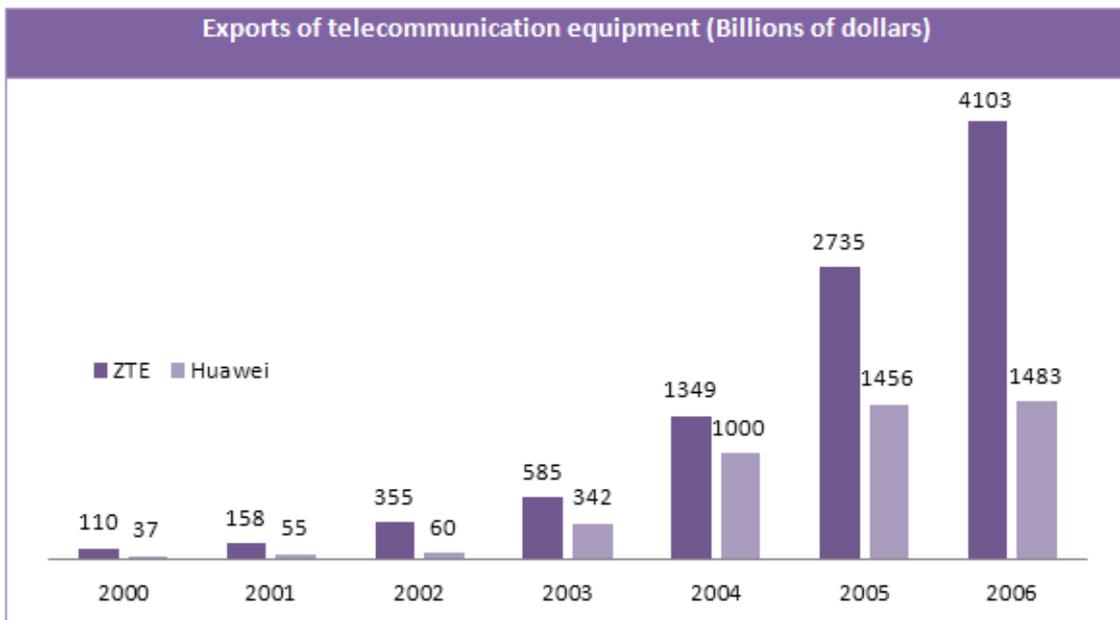
The segment of telecom equipment

- China already has some first class companies in the field of telecommunications equipment such as ZTE and Huawei which have already started its international expansion with force. Huawei, for example, has customers in over 100 countries, and in 2007 over 72% of its sales came from international markets, with 12 R & D centers in places like Silicon Valley, Dallas, Bangalore, Stockholm or Moscow. In 2007, Huawei invested \$ 100 million to expand its presence in India, including building a new factory equipment and an expansion of its R & D center. ZTE, meanwhile, has set up 15 R & D centers in China, USA, Sweden, India, Pakistan and France, and its customers over 500 telecommunications operators in over 120 countries around the world. It also has commercial offices in 5 continents and is growing its presence rapidly in the markets of developing countries.

⁴ Model Capability Maturity Software development (Capability Maturity Model for Software, SW-CMM) is a process model for the development and maintenance of software systems, designed on the following criteria:

- The quality of a product or system is a direct consequence of the processes used in its development.
- Organizations that develop software have an attribute called maturity, which is proportional to the levels of capacity and institutionalization of the processes they employ in their work.

- Companies such as these, together with strong local investment of foreign multinationals, have made it possible that China becomes a major production bases of global telecommunications technology for export, with productive presence of the large world leaders in the sector, such as mobile phones.
- In 2006, for example, China produced 455 million mobile phones, which accounted for 43.75% of world production of 1,040 million units. On these phones, 84% was exported, worth \$ 31 MM. Most of these phones make them multinational companies established in China, but local manufacturers are also growing very strongly. So while in 2002 only half a million units exported, in 2006 reached 32.6 million, primarily for developing countries of Southeast Asia. Locally, it is expected that the number of mobile phone subscribers passes from 488 million, which was in 2008, to 738 million in 2012, which will represent a CAGR of 10%.
- In the future, the Chinese government wants to create opportunities for global markets for its equipment manufacturers and their operators, creating barriers to encourage local leadership to local Chinese companies. In particular, China is currently trying to develop its own technology standard for third generation telephony, known as TD-SCDMA. In this context, the Chinese government has delayed the granting of new licenses for third generation, hoping that this new standard is available, hoping to avoid dependence on other 3G technologies, such as those found in Europe (WCMA) and U.S. (CDMA2000). The result of this technological battle is still uncertain.



The segment of ICT services

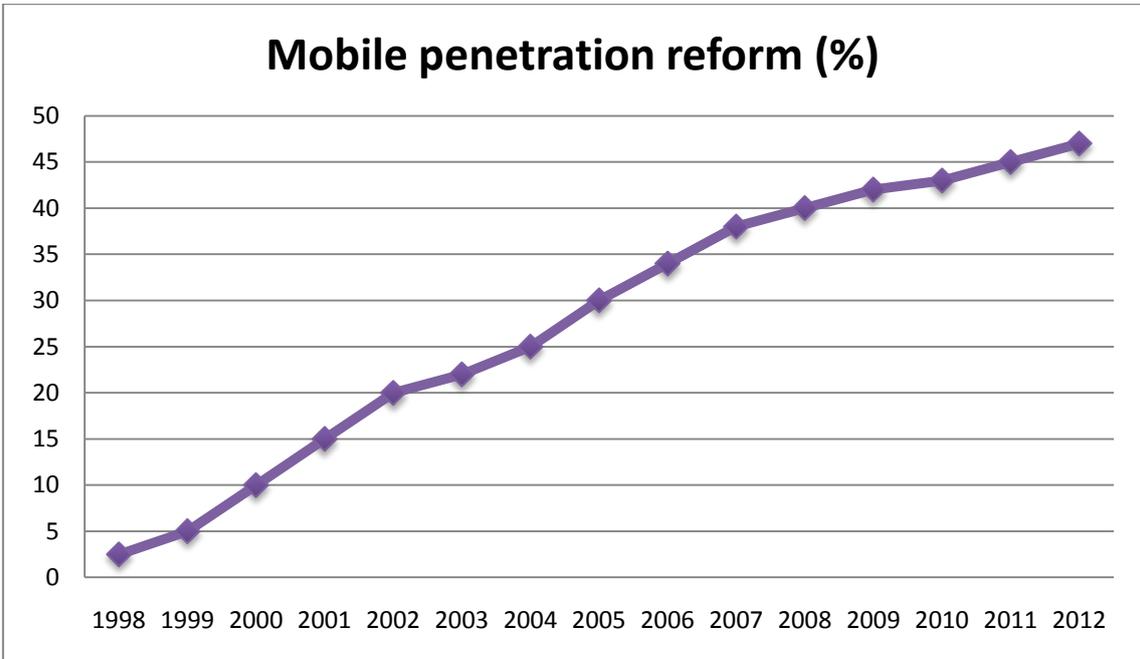
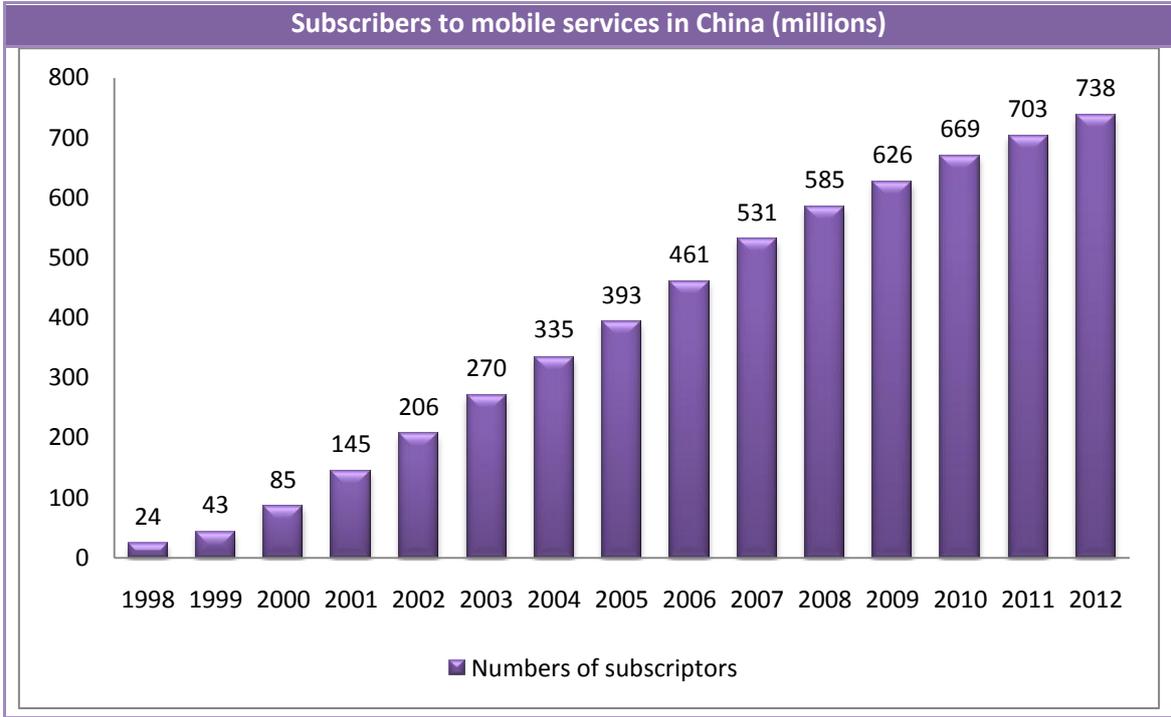
- In recent years, has opened a debate on how far China can be an alternative to India as a location for outsourcing⁵ services to multinational companies. The truth is that China has already achieved some successes in this regard. Today, for example, is already the main destination for IT and BPO service contracts for Japan, thanks to the fact that Liaoning Province, northeast, and the cities of Shenyang and Dalian widely spoken Japanese. Japan and Korea comprises approximately 56% of outsourcing services in China, although the weight of the purchases of United States and Europe has grown steadily in recent years, representing approximately 36% the total in 2007. Expected in 2012 could reach 55% of the total.
- However, to achieve to become a globally competitive sector, the Chinese IT services industry still faces the difficulty of their fragmentation. There is in the sector between 8000 and 10,000 local companies, very small yet, and there is not in China any local business that approaches the scale of the Indian giants like Infosys, Wipro and Tata Consulting. For large multinational clients, the business scale is important because it offers confidence and reliability, while a smaller company is more vulnerable to losses of important personal and is often perceived as an alternative to more risk. In a rapidly growing country like China, rotation of staff 20% or more are common. Potential customers of these services have also expressed their reluctance to hire such services in China for a lack of confidence in the protection of its intellectual property.
- Moreover, the long-term competitiveness of Chinese industry BPO services depends in part of the beginning of a consolidation companies that can create sufficient critical mass to compete in global markets. This transformation has happened in India where the government encouraged the consolidation and coordination between the companies, and is believed that it's going to happen in China
- In this regard, the government of China has identified this industry as high added value, low consumption of natural resources, high level of internationalization and ability to give employment to qualified professionals has been committed to their local development . To this end, has included within its eleventh Five-Year Plan an initiative called "Plan 1000-100-10". This plan consists in the establishing of 10 basis cities for the outsourcing industry with international competitiveness, attract 100 multinational of the top level in China to contract their outsourcing services and to cultivate 1000 large and medium local enterprises with international excellence level. The aim of the initiative is quadruple exports outsourcing services in 2005 horizon 2010.
- In the context of this plan, the government has committed resources to the training of graduates in information technology, and to help Chinese companies to acquire CMM certification, the industry standard. It has also established financial mechanisms through the China Development Bank, in addition to insurance services through the China Export & Credit Insurance Corporation, to help Chinese companies outsourcing recruit staff, build offices and expand its activities attracting customers abroad.

⁵ International outsourcing is offshoring or outsourcing of business processes from one country to another, usually in search of lower costs or labor. Includes processes such as production, manufacturing, services, and even innovation or research and development (R & D).

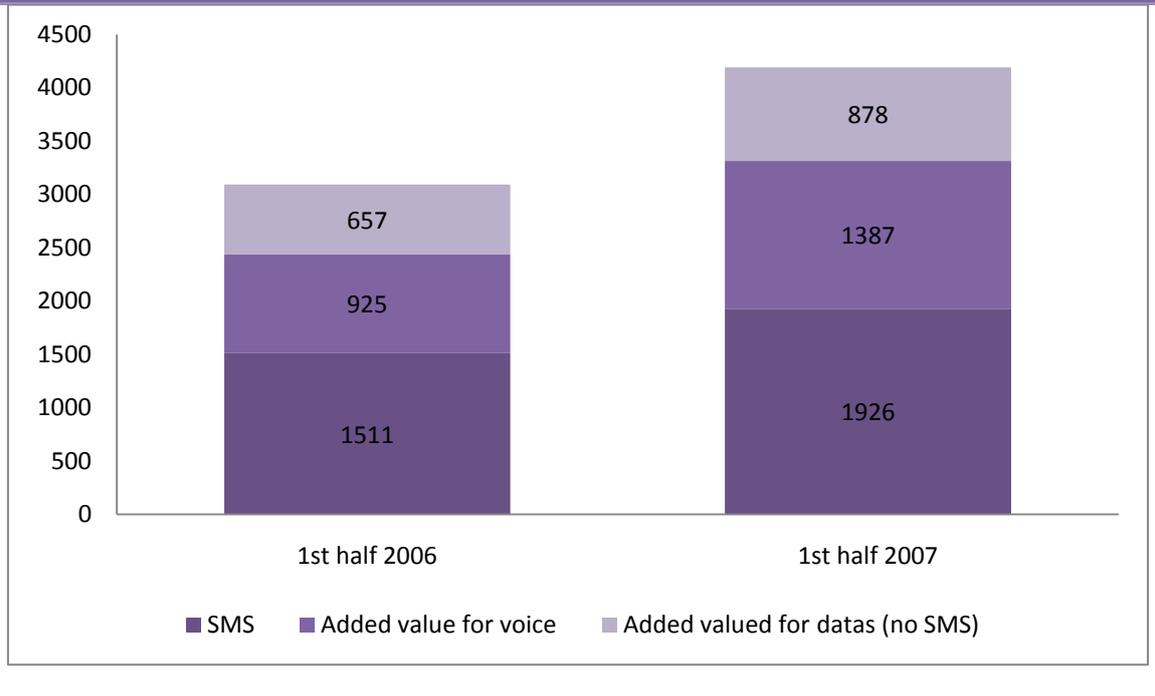
- The main opportunities for foreign companies can come through the contracting of outsourcing services in China, at very competitive prices, taking advantage of its initial development, and the fact that the government is keen to attract new customers . It is expected that in 2011 the turnover of the IT services segment in China reaches \$ 69 MM and register a CAGR between 2007 and 2011 of 25.2%.

The segment of mobile services

- Currently, China is already the main market for mobile services in the world with over 400 million subscribers. However, there is still much room for growth, since the penetration of mobile telephony in the country is approximately 35%, while European countries have reached and even exceeded 100% (because there are users with more than one active line).
- The mobile communication services market is dominated by two Chinese companies, China Mobile, with a market share of 67.5%, and China Unicom, which has the rest.
- Currently, the market for mobile value added services in China has more than 1,000 content providers. Local suppliers, such as TOM Online, Sina, and Linktone HongZhong, are achieving significant market share. The mobile software is an emerging sector in China, although the large multinational players such as MTV and Sony Music are already positioning themselves in the market. Skype has also formed a joint venture with TOM Online.
- One of the biggest challenges for the telecommunications market in China is introducing a new generation of mobile telephony, or 3G, which offers higher speed data transmission and allows, therefore, offer services with added value more sophisticated. Please note, however, that in more developed markets like U.S. and Europe, this technology has not had a radical impact on these services as expected. It is a mystery to what extent this can happen in China.
- The strong growth of mobile telephony in China is a priori a very attractive opportunity for those companies that provide services to this industry. However, market regulation is not transparent and entry is difficult. This means that most foreign companies operating in China in fields related to this industry are large multinational companies or large multinational suppliers, which can overcome these barriers.
- It expects the value added services for mobile can come to represent a total turnover of up to \$ 14 MM in 2012. In the short term, this sector still dominated by local capital firms, who understand the local cultural tastes and profile and are easier to develop the necessary relationships with mobile operators. However, pursuant to grow the user base of mobile phones and mature patterns of their use, is going to increase the market for so-called WVAS or value-added services such as mobile games, ringtones, images wallpaper for terminal or advanced messaging applications, opening the door to new business opportunities for foreign companies in this sector. These services not only are growing strongly in absolute terms, but also represent an increasing proportion of business operators. Thus, for China Mobile spent 22.5% of the total in 2006 to 26% during the first half of 2007.



Income from value added services for China Mobile, the leading operator in China (billion dollars)



Source: China Mobile

2.2.8. Final Reflections and synthesis opportunities

In the field of ICT, China today has the potential to act as a base of production for sale to international markets for technology goods such as hardware and telecommunications equipment. Traditionally, the access model in the sector followed by a large number of international companies established in China was based on corporate acquisitions. Moreover, China can buy low cost components for use in local production process (IMPORTANT for our products), option also common within the sourcing policies of many Western companies.

Among the specific opportunities offered by ICT to the Chinese market, we detected three clear opportunities:

- First, the sale of hardware and telecommunications equipment with high added value, either through a local trader or by establishing a sales office. This last option is aimed at companies wishing to bet on future market, derived from the development of the upper segment of the population is expected to continue growing over the coming years. Currently the country is a net importer of high value hardware, although in a few years is expected to generate local businesses the ability to produce such products, which suggests that this option can have a horizon of development medium term.
- Secondly, the provision of ICT services and solutions to the growing number of Chinese companies, which demand increasingly these services. In this case, both language

barriers and by the labor cost differential, we recommend the direct implementation in the country, which is never without difficulties.

- Thirdly, a greater number of mobile phone users (738 million in 2012) will bring a greater demand for mobile services, a segment that still has no local capacity to offer more value added. This future demand will provide opportunities for companies specializing in services such as mobile games, ringtones, wallpaper images for terminals, information specialist or advanced messaging applications. The provision of these services for mobile telephony in this case is that today is essential to have a local partner who knows the local cultural preferences and profile, and be able to develop the necessary relationships with local mobile operators.

In addition to these opportunities, we should add the economic crisis that is affecting the whole world. We have to look at the crisis as an opportunity to find solutions in the international arena. And if we do a market study abroad, one of the countries least affected by the crisis is China. What's more, their situation has improved in recent years and threatens to be the economic world power.

Leaving aside the geographical area and focusing in the market sectors, the least affected by the crisis is, is the field of new technologies. Therefore, with these two conclusions, we have been studying the entrepreneurship in China with the aim of introducing a technological product / service in the Asian market.

3. China, the best opportunity for the entrepreneur

Before coming to China, we didn't stop to hear that China is the future of the global economy, that within X years will be the first global power and even comments that placed China as a threat. However, if we make an objective analysis of China's development, we will see that China's development is not present to the world as a threat but an opportunity.

An opportunity that is reflected in many aspects when doing business in China by importing, exporting, producing or setting up the business within China to jump right into this huge market.

See China as a threat is a misconception after seeing that it's starring in this era of globalization. Thanks to the communist-capitalist system that has implemented the government and the opening to the west of it, the demand for foreign goods has resulted in increased employment in export sectors, supporting the employment opportunities elsewhere in the world.

The fact is that today China is the third largest trading power of the world, whose goods of good quality and low prices are exported to many countries around the world. This has made imports grew almost 86%, indicating an increase of consumption of the population. For its part, exports grew by 21%, overtaking Germany as the largest exporter in 2009.

In terms of production, we all know how cheap it is this sector in China and that's why so many companies have moved this department to China to reduce costs.

Thus, many countries and transnational corporations have benefited, and are benefiting, from China's development. Obviously it is a shared benefit and thanks to this, China tends to be the world's economic powers. So we have been studying the different types of opportunities offered by China to do business with them: import, export, production and set up a company in the country. Also we will see how important it is to have a representative office for these types of business and others necessary procedures.

3.1. Importing/exporting from/to China

3.1.1. Importing from China

The success of a venture to import from China depends on many factors, such as: search and selection of a reliable partner in the crowd of potential Chinese suppliers, the success of trade negotiations supported by a knowledge of Chinese market in the sector given, supervision of the execution of the order and the inspection of the merchandise, along with the preparation of commercial documents in question.

For those companies that, before starting to import from China, if they have not even import / export procedures and have not had the opportunity to make contacts with foreign companies, the decision to initiate collaboration with a Chinese supplier is often connected

with a thorough knowledge of a variety of customs and tax regulations, to which are added for some sectors, national laws and directives of the European Union and other international agencies that regulate inter alia the technical, safety standards and environmental protection. While additional factors must be taken into account forms and payment terms and conditions of contracts that differ from those applicable to domestic trade, as well as delivery times significantly longer than in the case of orders to suppliers .

For enterprises that start to importation and for those who have already accumulated experience in the area, a factor which often prevents the development of a dynamic company, consists of communication difficulties arising from language barriers and a substantial difference in culture and business mentality.

Shipment of goods

After verifying the conformity of the goods with the explanations contained in the order and quality, you can proceed to despatch. The development of air transport, shipping from China to the outside world and, in recent months, also railway from China to Europe can adapt the mode of transport to the type of goods transported. The choice of a competent and fast transport agent (freight forwarder) ensures a reliable and secure shipping. A transport agent that does not have a network of local Chinese or a stable partnership with local companies it might not be able to comply on time and safely with the shipment of goods.

However, even with the best transport agent can't prevent a provision completely incorrect when loading the goods in the container or to load all the goods requested. Which, if the transaction was with a dishonest Chinese supplier, beyond the fact they have paid the Chinese supplier for goods which in fact is not sent, can give raise to additional complications such customs and tax on import goods.

For them, give a different product in the last minute or less quantity than agreed, is not a scam, is part of the profession. It is a country with a low crime rate, where scarce the thefts, but where abound which in the West we would call "scams". Chinese people try to get you the money listening to your mouth: "I'm agree". At the time of making a deal, you're always in agreement, then if the result is not the expected one, the problem has been yours by not preventing aspects as reading well the words of a contract, review the material before paying, register your trademark to protect against possible plagiarism... They don't seek theft easy as it might be giving the wrong change in a leveraging purchases of foreign inexperience in a different country, or robbing a bag, etc. For them is quick and easy way, your goal is to use the commercial ingenuity to sell as much as possible.

And is that Chinese commercial do not look after customers. His only priority is to sell. Unlike the West where it is important to keep customers happy to keep them, in China the market is immensely large and if you do not buy today, another will come and buy. In fact, both with ourselves as with our Chinese friends, sellers have invested time to sell a product and when they sold it, they have cast us because we are taking his time for the next buyer. A business philosophy very different from the West where is highly valued the Customer Service.

In fact in everyday life, it is not customary for them to give a simple sign of gratitude, saying "thank you" or even tipping is frowned upon and taken as offense. Very different than the West where they usually give thanks even to a shoddy service simply as courtesy. Everywhere, we're going with this, that when trading for the Chinese is all a theater and the person is just a client. We have read, heard and seen how they can be friendly, hostile, angry ... all with the same goal: to sell. Once sold, all is back as the beginning ... How would say a football player, what happens in the field, stays on the field.

For this reason, there will be screening cargo of merchandise and will arrange maritim, air or combined transport from China. It will protect our customers from surprises related to insufficient burden or an inadequate burden of the goods in the container, carrying a load control. The company staff will inspect the place where it charges that the number of articles prepared for submission is correct. Also be checked is loaded all the goods and the method of placement in the container is as agreed. Also not the merchandise was damaged during loading and that the containers have been closed and sealed properly.

Order execution control

Signing a contract is only the first step on the path to execution of an order and shipment of goods by a Chinese supplier. However sometimes happen, especially in the case of relatively long delivery times, that during the processing of orders appears new questions that could not be foreseen at the time of order; such, for example, new import regulations, changes in the market situation as an increase in demand for one of the products compared to lower demand in others, need to quickly send a portion of the order, etc. Add to this the uncertainty that the Chinese supplier actually chosen to produce the goods that were requested and that delivered in a timely manner.

Should be performed on an ongoing basis, monitor the execution of an order. Being in constant contact with the provider and informing regularly about updates status of your order. Evacuate all technical issues related to the production process and the characteristics to be fulfilled by the finished product. Also confirm with the provider implementation capability and conditions of any changes that the client wishes to make the order. Thanks to a good control service fulfillment, your company will be aware of what stage is the completion of the shipment in accordance with the agreed conditions.

Quality control

Constantly check Chinese provider implementation status of an order and give a full explanation of all technical issues is not always enough to prevent the client the possibility that the final product meets all quality requirements. This may be due to the use by the Chinese manufacturer of components other than those used in the accepted samples as a result of errors during the production process or communication failures within the export department or sales. The monitoring of the production process by staff dispatched to China takes time and money, which increases the cost of importing from China.

It's possible avoid a significant amount of quality problems by making periodic quality control during production. The quality control system may rely on the implementation of production control at least three stages:

- Monitoring and checking of samples prior to production (IPP).
- Controls during production (DPI).
- Controls postproduction (API).

It shall make a control sample before production (PPI) when the product is not among the commodities offered by the manufacturer, but it is a product manufactured to a client project or a modification of a typical product of the manufacturer.

The inspection of goods during production (DPI) is to verify the quality of the components used by the manufacturer and its conformity in color, size etc. with the accepted samples. Often in the course of a DPI should also verify that no quality defects arise due to errors in the production line and control the method used by the manufacturer to make the internal controls of the given product.

The post-production control (API) is the final stage of production of goods. Be carried out according to instructions provided by the customer, to verify many aspects of quality of performance and functionality of the finished product. It will also control the quantity and examine the packaging of products in terms of transport security and ease of downloading.

3.1.2. Exporting to China

The fast economic growth in China makes this country a more attractive market, whether it comes to exporting industrial goods and consumer and agricultural products. Export to China has become the most important factor on which companies are building their growth plans.

Many multinationals have already discovered the potential growing Chinese consumers and businesses. Thanks to have designed and efficiently implemented marketing policy and a successful growth strategy, these companies have secured a stable presence in the local market. It is also why every year for export to China increases foreign products offered by multinational corporations.

However, large corporations and international firms are not alone to having success in exporting to China. Medium and large companies follow the footsteps of giants. Are entering an increasingly important stream in the Chinese market with offers that to many cases, allows to compete equally with both multinational companies with local Chinese companies. An attractive product offering, alluring prices and above all, a good quality, attractive or interesting applications presented in the case of consumer goods, and good quality with outstanding technology and high functionality in the case of industrial goods are allowing a foreign enterprise to the Chinese market to settle in and perform successfully exporting to China.

Get into the Chinese market a typical product of own country is something that is on the order of the day between ideas of young entrepreneurs who come to China. Most of them come to China and the first business that comes to their mind is setting up a restaurant or distributor of products typical of their country. China is opening to the world relatively recently, therefore, as we have seen in person, are scarce the restaurants and shops of Western distributors, but the few ones which are here have success. The fact is that, the large number of foreigners who are migrating to China, the enormous size that has this country's population, and above all the culture that exists in China eating out, ensure the success of a food business. The downside is how difficult it is to be installed in China, it is impossible to install without Chinese partners and because maybe the partner is not trusted.

Introduction of products on the market

China is a highly competitive market. Importers and local sales agents try to add a product using methods which, to his view, best suited to the characteristics of the Chinese market and the needs and preferences of local consumers and institutional customers. The choice of method of introduction of products in the market depends largely on the type of product. Industrial goods and consumer goods are distributed in different manners. The type of products exported and the nature of the market discovered after analysis will determine whether a better effect by partnering with national importers or agents change it to regional distributor or final consumers.

But not always promotional methods used by Chinese importers and distributors will suit the brand image created by the foreign manufacturer, and not always the Chinese importer is responsible for promoting the make, trying above all to present their own business. It often happens that the Chinese importer or distributor wants to carry out its own pricing policy, applying margins and sales channels that guarantee a higher income with significant margins, but with a small volume of distribution, while at the same time attempting to transfer the foreign manufacturer in whole or in part the costs of promotion and product advertising.

The company designs the most advantageous system for product placement in the Chinese market. Working together with Chinese local marketing agencies can, with the agreement of the company and in collaboration with the Chinese distributor, to shape a successful model for promoting the right product for the brand image created by the client and managed to get the sales conditions more suitable to the client.

Export Control

In the more competitive conditions, the performance of exports to China depends heavily on the effectiveness and creativity of local Chinese suppliers. The signing of a long-term agreement with a Chinese partner and the confirmation of a model of working together and the foundation for the introduction of a product on the market does not always ensure the proper long term continuation and a growing volume of goods exported. The causes are multiple: the deviation by the Chinese distributor of the conditions agreed for the introduction

and promotion of the product, modifications in the operation during its period of validity, simultaneous introduction of the Chinese distributor of branded products and manufacturers Product competition at the expense of the customer, changes in the market that claim to add new products to offer and modifications of the product once exported.

Prevent the situation described above in the context of an increasing level of export products requires constant monitoring not only the movements of local Chinese distributor, particularly useful is a real-time monitoring of market situation. Noting the activities of manufacturers and distributors of competing products, changes in the position of distributors in the sector involved, the emergence of new distribution channels, changes in consumer preferences or consumer goods buyers of industrial goods the emergence of new economic phenomena, it is possible to convert these factors, conducting appropriate follow-up of the sector concerned, on opportunities to increase the level of exports rather than causes of its decline. Companies must find a solution that allows build a complete picture of the state of the market and take advantage of the emergence of these phenomena turned into advantages.

3.1.3. Provider Search

China is called, not unreasonably, the world's factory. Manufacturers in virtually all sectors offer a huge variety of products both for export and to meet market demand. Chinese suppliers offer their products through websites, like the famous website Alibaba.com; catalogs provided on platforms such as Global Sources, sectoral catalogs published by industry associations or federations of local entrepreneurs, as well as in the trade press.

The search for a specific product providers may have unique timing requirements for a foreign company. The Chinese know not limit the search to the circle of suppliers who have web sites or ads in English, which often leaves out interesting local suppliers. One aspect that has been pretty mind when searching for information for our thesis. Besides being within China, many international websites are blocked. Not just social networks like facebook, or streaming services like YouTube, but also blogs and even the most used browser in the world: Google.com. Although curiously, google.com is blocked but variants like google.es, google.com.hk (Hong Kong, we mostly used to search for local information) are not blocked. However, this blockade, the Chinese barely don't perceive it because they have their own youtube (Youku), facebook (QQ), google (baidu) but obviously these pages are only in Chinese. Have created as its own isolated Chinese internet.

The non-presence in China and the time difference may also slow the production of tenders and further information on production. Be present in China significantly reduces the time spent in obtaining quotations and confirm all the elements of an offer, eliminating possible misunderstandings.

3.1.4. Provider Verification

Being the faster in set up a tender, provide practical information and professional and have an internet site with good design and in several languages does not always mean that a supplier is a reliable partner and will deliver the products offered in the right quality and within the agreed deadlines. Many times a provider who is presented as a trader manufacturer that provides products of local manufacturers, sending samples or technical details for a product obtained from a supplier, then make the shipment of the order with another manufacturer cheaper. Many Chinese manufacturers, trying to woo customers with an attractive price, offering products that do not have the required quality, due to insufficient production capacity or lack of relevant knowledge or experience of technical staff.

And is that, this mentality can be seen reflected on a large scale when foreign companies seek to negotiate with Chinese companies, and small scale when you are going to buy an original electronic device and in the last moment they put a false one in the package. This is very common in China, selling to foreigners, since it is very likely to be visiting the city and then not have the option of claiming to have left the country. It is a very simple example, but it is the pure reality of what can happen sending material containers overseas. If after the merchandise is not the same that you ordered, the distance, language and not being in the country make that almost always, this sending involves a loss for the company.

Before starting to collaborate with a Chinese supplier, we should always check with whom are we working and what are the productive capacities of our partner actually has. Perform control of, among many other things, that company documents are legal and consistent with reality, all of which enables us to evaluate whether pre-selected provider is reliable or not. Also we should to confirm that the organization has in good standing all licenses and permits required for export of the product in question and make sure that the product certificates supplied are correct and consistent with the requirements. Before placing an order, we have to find out what reputation the firm enjoys in its sector and a visit to the new provider to verify the location of its technical capabilities, methods of organization of production, knowledge and experience of its staff. It should also be offered product samples, or that best approximates the bid, to determine if the supplier is actually able to manufacture the product as agreed.

Talking about exporting, having a reliable and effective local partner is one of the most important factors that decide if exporting to China will be successful or not. Find and contact such a company, determine their reliability, range of activities and agree on the preconditions for collaboration at a distance or during a brief visit may prove difficult and not lead to desired effect.

According to the method chosen by each company to introduce their products on the market, it must perform a search of China counterpart: importers, distributors or appropriate end users and after, verify. Knowing the customer requirements and product features to make a choice, an option is to propose suitable and reliable sector partners whose position in the market and industry knowledge ensures the success of export to China. In the case of delivering products directly to consumers, the company should be able to find reliable

companies with an interest in the products offered even in the remotest corner of China. The detailed information on the Chinese partner, the business environment and the administrative and legal environment in which it operates can achieve favorable conditions for cooperation.

Finally we are always talking about the same. The key is having good and reliable contacts in China. During our stay in Beijing China, we have not stopped listening to the same issue when we hold business talks: "fraud or scams". Just as maybe in the West, when you hold a conversation about business issues can listen to topics such as social networks in the world of marketing, a company released a new product, the crisis is affecting most state enterprises, etc.. Here the theme is "China is growing economically" and "failed agreements between foreign and Chinese companies".

All of them reach the same conclusion, if a foreign employer is succeeding in China is because he has a chinese behind him gaining much more. If your idea is good and you are not greedy, could be an issue that is acceptable: I do not care that there is someone behind me making money if I'm earning too. But this can be dangerous because we have heard many cases that once stabilized the business, the chinese has gone slowly gaining ground in the company to displace the occidental person and become the sole owner of the company and taking full benefits.

One of these cases we have heard part of a deal between two partners who set up a company after spending a year living together and believing that they have formed a strong friendship. And is that, it is very important to review all points of a contract even if the person you're negotiating is your chinese wife. In China, the verbal agreement and the relationship with the person, is not as much valued as in the West.

Another frequent case is that the provide with which you are negotiating doesn't exist. Adriel Gonzalez, a mexican economist with who we have shared a lot of moments in this country, was the node between a Mexican company that wanted to export tequila and a Chinese company. Very typical of foreign firms: export a typical product of the country taking advantage of the large number of potential customers and product quality. In this case, the last time before closing the deal and start sending samples to China for sale, Adriel contacted with the Mexican Embassy to receive information from the company in China. Surprisingly, this company was not registered as such, or what is the same, this company did not exist.

The final destination of the products when they are sent to a nonexistent company can be guessed: to sell without giving benefits to the company's original or copy the product.

In the typical case of delivering products directly to consumers, the company should be able to find reliable companies with an interest in the products offered even in the remotest corner of China. The detailed information on the Chinese partner, the business environment and the administrative and legal environment in which it operates can achieve favorable conditions for cooperation.

To ensure the identity of the Chinese supplier, it is often advisable to work only with producers who appear on the official lists of trusted entities. It's a good idea, but has a drawback: there are thousands of Chinese factories, which are not registered in those directories, that offer a

quality and honest service, is more, their prices and conditions are almost always more interesting.

Finally, the problems discussed are not unique or specific to the Chinese market but are common in international trade. It would be unfair to judge the Chinese producers only on the basis of these cases. As we have seen in our experience in China, the Chinese people is very hardworking and responsive, it also has a wonderful wit. Some people use this talent to illicit purposes, unfortunately. For that reason, do not let down our guard and keep working with this country, appreciating the advantages it brings to purchase in China.

3.1.5. Negotiation

The objective of trade negotiations within the framework of a venture to import from China is to obtain from a Chinese supplier chosen the best price or more favorable conditions for cooperation, respecting the quality and delivery times required. Is achieved or not the best effect in trade negotiations depending on how focused you are the buyer about the market situation where demand.

To ensure our company the best possible collaboration with Chinese suppliers, we should to have a comprehensive service that begins in the pre-negotiation stage. Ensure store, before you start negotiating, the most comprehensive information available about the prices of the product in question or similar products offered by other manufacturers. Often, control also the manufacturers of the components of the given product quality and price of products and raw materials available.

At the time of compiling this information about prices, is recommended acquire them by empirical sources, ie, with persons or companies who have already negotiated a similar product or service and ask them for the price. Obviously, to a reliable source. And is that, in China, "bargaining" is part of their culture. As we have seen here, you can bargain for almost everything and even text books teach you to haggle. Prices for posters, brochures or even the prices of one of the leading hotels in Beijing, can be negotiated.

Knowing the range of component manufacturers, we are able to have the information to our company during the negotiation, on possible alternatives to obtain reasonable prices by making modifications to the product you expect. A good orientation in the sector involved and familiarity with Chinese law, the policy of the Chinese authorities and the realities of Chinese manufacturers will provide us with arguments that, when negotiating, generate business benefits.

As we all know and we have learned in the subject of PDGPE (a subject of INNOVA-TIC department of our university UPC), the most important in a negotiation with a company, is get all the information possible about the company, environment, competition, etc. As more information, more things to compare. The problem in China is that such information is not shared as in America or Europe. For that reason, initially in a negotiation where the objective is importing into China, foreign enterprises are at a disadvantage.

Another very important factor, and that have given much emphasis in this subject, is the time factor. In negotiation, who is in a hurry starts with disadvantaged and we have seen that the Chinese have no hurry. They love to eat, and organizing dinners for business, taking it all in stride and searching the impatient foreigner. They play a lot with the time factor and knowing that in West is usually talk directly about the important point and trying to make things clear to start as soon as possible.

For years, Chinese companies have been accustomed to dealing with foreign companies to export products, so they know how work the foreign companies. This, together with the transparent dynamic in the West and America at the time of do business, helps the Chinese to collect valuable information from the company which is under negotiation. On the other hand, the privacy policy held in China, the large size of the market and the yawning gap between cultures, makes it more difficult to find information, especially for SMEs.

3.1.6. Import Procedures

Despite China's accession to the World Trade Organization, the import and customs laws of China still differing significantly from the laws in force in other countries or customs districts such as the United States, the European Union or Mercosur. The knowledge of the import laws concerning Chinese partner primarily to performing the import of goods and services. Despite these laws often are also of great importance for the exporter, as the Chinese quality standards for certain groups of products imported into China are often more stringent than those applied in other regions customs. For other product groups may have differences from what is applied in other regions due to the characteristics of a product to which attention is given to import goods to China's customs area. For certain product groups require special certificates, inspection of each item in the destination port in China to introduce inspection or production site located outside of China. Complying with all these formalities can be costly and require the preparation of documentation.

By examining all legislation relating to import procedures for the given product, the company has a thorough knowledge of the rules they must adapt their product. With detailed information about exactly which documents must be submitted to the appropriate bodies of the Chinese administration and when you have to do, and what should be submitted by the Chinese partner, which is particularly relevant for those products whose method production, content or functional aspects are considered trade secrets or commercial property of the manufacturer. Knowledge of the precise requirements of import permits in time to provide Chinese partner all the required documents, and knowledge of the cost input for the realization of all import procedures is important information during the course of a price negotiation.

3.2. Production in China

Already in the early days of economic reforms initiated by Deng Xiaoping in 1978, many foreign companies glimpsed the opportunity to accelerate their growth and to cheaper production costs in China by relocating part of its production. China, thanks to a constantly developing infrastructure and relatively low labor costs, it is an exceptionally attractive destination for foreign investment. However, to start producing in China requires investment capital, a team properly prepared for work in the Chinese environment, as well as time to devote to the organization of the activity of the new venture established. In some sectors, according to local Chinese law a foreign investor is limited to a minority stake, which is beyond its scope the control of the activities of the company. Of course it is possible to acquire all or part of an existing Chinese company, but this type of solution also required to commit capital in the stock and costs, often significant input for a transaction similar in legal and accounting services.

However, many companies opt for a completely different way to start production in China. A solution that saves costs and working capital employed in starting a business is to sign a production agreement for China local produce foreign contractor's design. This type of solution results in a high elasticity in the formation of the rate of production, and speeds up the changes or additions to the variety of products, submitting orders for the vendor. When the technical and production capacity are not sufficient to meet the orders placed, you can sign an agreement with a new Chinese trade partner. It benefits from this type of solution even giants like Apple and Sony, even though the latter also has its own facilities to manufacture in China. Also small and medium enterprises, by signing a production contract with a Chinese manufacturer can begin production in China of their own design, achieving success in their home markets with a relatively modest investment.

3.2.1. Choosing the type of operation

There are several ways to start their own production in China. In resolving this step, a foreign firm faces the decision of the basis on which to begin production in China the products of their design, so to reach a lucrative price while at the same time guarantee the expected quality and secured the rights to the product as preventing the Chinese manufacturer to produce and market it as their own.

Each mode of operation with a Chinese manufacturer has its advantages and disadvantages. Sign an agreement in which the Chinese manufacturer is contracted as manufacturer (CM) and determine the final price of the finished product has its strengths. The estimated costs of product manufacturing, sourcing, production, package implementation, etc., are borne by the producer. Customer entitled to receive the product according to the parameters confirmed the specific price.

In this way, the company doesn't have to care of these issues and doesn't buy the machinery to produce. This method is useful when the product does not require high technical and rather

it is something simple as is the case of the bracelet that we want bring to market. In the business plan is possible to see more detailed and justified the benefits of choosing this method of production for a simple product. The downside is that the final product depends on the distribution company because they do them and you just buy it, but as we said, when a product is simple, it is highly unlikely that the product comes out differently of the agreed. Or rather, if defective, it is easy to identify and avoid buying it.

Another type of operation may deserve special attention when we are faced with highly complex products or for which it is essential to long life is working with a Chinese partner based on a scheme of "processing". Wanting to be certain that the manufacturer uses the required components, the foreign client may provide components of the nerve, after which it will be the responsibility of delivering the finished product manufacturer.

There is another possible scheme of operation: tell the Chinese partner a number of local subcontractors, which must buy certain components. In the case of innovative products, which is vital for the use of modern technical solutions, the path may be helpful to commission the production of individual elements of the product to local Chinese manufacturers, leaving the customer's final assembly and packaging. As can be seen in the business plan of the product which we want to put into market, this is the method we choose to save money in the manufacture of a monitor and a special receiver, ensuring this way the desired quality because we are the last to mount the product.

3.2.2. Searching of manufacturers

The choice of how to carry out production in China is one of the determining factors when choosing a local manufacturer. When choosing a Chinese manufacturer, is evalúan many other issues related to, among other factors, the production process, the location of the manufacturer, its prestige and educational level and experience of technical staff.

One of the crucial factors is the production capacity available to the manufacturer. To produce more complex machinery, is crucial implement existing technical solutions. For less complex products, can achieve the desired effect producing them with less advanced equipment, thereby reducing manufacturing cost. Another essential factor is the location of the manufacturer. The proximity of sources of raw materials, convenient transportation network, a rich and labor market infrastructure developed which allow contract employees in the same region, contribute to lowering production costs and transportation of goods. This leads to lower costs and allow a special price for the product, while maintaining the required quality and respect for deadlines. Not without significance, moreover, the legislation governing tax cuts or additional subsidies introduced by the Chinese authorities to encourage the growth of local industry, which in some cases have no less influence on production costs.

3.3. Business in China

For decades, China is an attractive destination for foreign investment. This is true both for productive as well, given the rapidly growing Chinese domestic market for services companies. For manufacturers, China is an attractive destination to establish new production facilities. Primarily due to relatively low manufacturing costs, primarily to low labor costs (staff salaries and social packages while less expensive than in developed countries), costs of land use, both for manufacturing as well as local workshops office, under an infrastructure of well-developed transport and telecommunications and energy infrastructure in the process of intensive development. One of the main factors affecting the decision to set up a venture in China is, leaving aside the cost of manufacture and sale of a product, easier access to the local market for both Chinese and foreign companies. The increasing involvement of service sector companies starting ventures in China is connected to a growing demand from the Chinese public high-level services, as well as the fact that a growing portion of the public is open to new types services not offered in China so far.

The structure of foreign investment is also subject to change. Beyond international companies in China which installs new factories or sales networks, more and more small and medium investors perceive the growth opportunities associated with starting a venture in China. Open a small factory or assembly plant can often allow a medium-sized producers become attractive and competitive with large corporations. Good investment ideas in China for a small investor may be opening a restaurant, a bakery and an art gallery.

By implementing a business in China: it should make the assessment of the proposed opening in China, budgeting, monitoring of procedures for recording and organizing the ongoing activity of the company. Doing an evaluation of the feasibility of a particular investment in China, costs and expected profitability. Make the selection the local partner, if this necessary due to the demands of the Chinese legislation, or whether, given the particularities of the sector concerned, the presence of a partner China was a significant influencing factor in investment success. When opening a business, you should take out the procedure for registration of the new company and take part in its implementation. Do all these steps properly it provides the possibility of success of projects and reducing the costs associated with the installation of the company, increasing security of investment.

3.3.1. Project evaluation

Before making the final decision to develop an investment, opening a new business in China or acquiring shares of an existing one, you should make a comprehensive assessment of the profitability of a project of this type. One of the key factors influencing the decision is to compare investment costs to the level of benefit to be achieved. A project to open a new factory, service or other venture not only in China but also in many other countries often require the commitment of considerable financial and labor capital of the investor or the staff of the parent company. It will only be possible to properly assess investment costs and expected benefits when available the accurate and reliable information.

In the case of projects directed toward the start of production in China, you should choose the most convenient location to set up a venture in China in response to a variety of factors, including: cost of land use, tax incentives, ease of cooperation with local administration, infrastructure, easy access to raw materials and components required for production, labor costs and availability of suitably qualified staff, state of the transportation network, proximity to markets in China and supply range of products offered by competition, intended to be used from production to the Chinese domestic market.

To the case of an investment in the services sector, will seek the most convenient locations depending on the sector in which they must operate. It will be taken into account such factors as the size of the group of consumers of the service concerned, the supply of competitors present, the administrative rules governing the installation and operation in the sector, local authorities' position regarding the opening of operations in the sector as foreign investors and the costs of implementation and operation of the enterprise.

3.3.2. Search for local partners

China's laws regarding foreign investment in certain sectors deemed essential to the economy or treated as susceptible for other reasons, limit the participation of foreign investors to a minority stake. Given the peculiarities of Chinese business environment in certain sectors, even in the absence of administrative rules that restrict the possibilities of installing foreign equity companies, the operation of a business is much easier and provides greater assurance of success investment if it works in conjunction with a suitable Chinese partner.

It is essential the good choice of local partner whose participation in the investment ensures our successful implementation. For example, an election would be a Chinese investment partner whose participation in the project consists mainly in providing capital, or if, depending on the particularities of the sector, will make more sense to work with a Chinese partner who would be more valuable when operating the new company to establish in China. It will make an evaluation of potential partners from the point of view of the experience they have and their position in the sector, its financial and operational in case of a partner to take an active part in the operation of the company. Also carrying out, in collaboration with local Chinese companies, an audit of the financial situation of a potential partner.

If you decide to purchase an existing business, may be effected, in conjunction with local Chinese firms audit, an investigation of the financial situation of the company which will be acquired. Examining the ownership structure, corporate status, the market position of enterprises begun, human resources, production facilities, ownership of technology, patents, production methods and distribution channels in place, the history of the company and many others factors to assess whether the company in question is attractive as a takeover target. Conducting the negotiation of a partnership agreement or stock purchase contracts to selected partners, and in conjunction with a local law firm, preparing company contracts, corporate bylaws and other necessary documentation.

3.3.3. Company registration

The legal framework that regulates the general regime governing foreign business governs throughout the country, while the procedures were developed in the state administration bodies at provincial, district or lower. However, to register a company with foreign capital in the areas designated by the authorities as key sectors for China's economy or as particularly susceptible to register a new company often is subject to the approval of the project by the relevant body central administration. In addition, often also local authorities with delegated powers to introduce detailed rules, define additional requirements in terms of payroll and content of the documents necessary for registration of a company. According to the peculiarities of China under administration and local legislative culture, often those rules are not universal, but function as directives and regulations made known only to the party by the appropriate office of the bodies local administration. Some of the issues related to the registration requirements of the new company, such as for example the conditions and length of rental property (in China there is still no private ownership of land) or the terms of foreign capital and statutes of the new company may be, in certain areas determined by law, subject to negotiation with local authorities.

In the process of registration of a foreign company, it must carry out all the formal requirements regarding payroll and content of the documentation to be completed during the registration process. Learn what subject and what sectors are liable to approval of central authorities and which items are approved locally, and in which sectors can be negotiated with the Chinese authorities the conditions of installation and operation of a business. Make the relevant negotiations with local authorities. Continuing to monitor the development of registration procedures, and staying in constant contact with government bodies, providing the information or documentation required so as to ensure a record of quickly and efficiently.

3.3.4. Commissioning Company

The implementation of a company in China, as elsewhere, requires significant capital to commit and dedicate time and effort on the part of the parent company. Rent or buy industrial property, contract management staff, organize the installation of the company or ensure the provision of appropriate legal and accounting services for the venture started, all in a totally new business environment, can be a difficult task for the headquarters staff. It will need a significant amount of time and labor, which can significantly increase costs and delay the onset of the effective functioning of the enterprise.

The process of commissioning of a new venture you must ensure it is kept to a minimum. In the phase of the project prior to registration, it will perform negotiating to rent or leasing of real property for a manufacturing plant. There will be various stages in the investment, as well as the recruitment of local management and the company should see the appropriate

channels for the recruitment of employees. Selecting suppliers for manufacturing equipment or other operations that would be carried out within the enterprise.

Register a company and obtain the certificate of registration is most often responsible for only one of many formalities to be completed by a new company to develop its operations. Keep continued contact with the organs of state administration through the development of the administrative process directed must obtain permits or licenses.

3.3.5. Operations in a Chinese company

Operate a business in China, due to differences in legal and administrative conditions and particularities of the business environment, requires knowledge and practices. The hiring of employees, purchase of materials and components necessary for operation of the company and the organization of the production process are made on terms other than those that take place in the country of origin of the parent company. In the case of the productive enterprises that include the local Chinese market as one of its major markets, it is especially vital to define the distribution system of products, distribution channels open up and develop an effective advertising campaign.

3.4. Representative Office

A long-term activity in the Chinese market is greatly facilitated by establishing a permanent representation office in the appropriate region of China. It is important to take full advantage of having your own representation in the Chinese territory, allowing while saving capital and time invested in establishing and running a representative office in China. We must prevent or severely limit spending on flights of employees from the customer's home country and operating costs. Putting knowledge, we can do to make a complete representation offices and successful in the Chinese territory.

To perform certain types of activity in China, such as exports in certain market segments in China or the installation of an enterprise's own significant scale, opening a representative office can be a great advantage when working with partners Chinese. The company must assess to what extent it is necessary, as part of the planned activities, establish a representative office, what are the potential benefits and what costs. To allow the company access to the greater advantages to opening a representation, should record the office, in this case, we must organize the activities of the office (rent, local hiring basis as required by the client, conducting administrative procedures, help with office layout, etc..) taking into account all aspects of the operation of representation.

3.4.1. Choosing a location

One of the key issues in establishing a representative office is to choose a location according to the type of activity: whether to install the office in a major Chinese cities, or if it can be done in a smaller town closer to the local partners. A crucial factor is to decide the size and location of the office in your chosen location, if the office needs to be installed in one of the modern and luxurious buildings downtown or if it would be more convenient a more economical solution.

When choosing the location or locations where there will be a representative office, consider all the factors that influence the effectiveness of the operation, while indicating the operating costs for each location in order to achieve the best results.

One factor to consider first is the activity profile of the office: if your function is to promote exports and expand a distribution network, or whether it must be the basic unit on which to base an enterprise in China, later to be transformed or absorbed by the new venture.

The next factor to consider among which affect the choice of a locality is the area of operations of the representative office. For example, for a national office, which will deal with the tasks related to the export and distribution of products, it is essential that the office is located in a city with convenient connections to other regions of China. But for an office's focus on the organization of a new venture is particularly important to the proximity of where investment position as well as local administrative bodies, which is vital from the point of view of recording and venture operation to be performed.

3.4.2. Budgeting

To estimate the costs of establishing a representative office, it is necessary to consider many factors, such as, inter alia, the cost of renting or purchasing a building for the office, the cost of hiring local and foreign, operating costs, payment of taxes and duties to the State, etc. The operating regime of a foreign representative in China and related costs differ significantly from that in which it is based representation of a foreign company in other countries.

There is administrative law that limits the possible choice of location for offices in buildings enrolled in a special list of properties approved for foreign representations. Hiring staff is possible only through a number of intermediary business agencies approved by the relevant body of the national administration. Unlike the rules of operation of foreign representative offices in many European countries, such units operating in China are required to pay Chinese and local taxes, including income tax.

3.4.3. Registration of representative office.

According to the law, opening a representative office in China requires the registrant company produce a series of documents required by the regulations and designate the persons responsible for the activity of representation. The documentation required to register a representative office and registration procedures vary according to the China region. The documents of the parent company must go through a check before the appropriate organs of the Chinese administration, including consular representation in the PRC. Some of the documentation must be submitted together with the corresponding translation in Chinese. Persons appointed to head the office of representation are also required to submit documents related to their qualifications and experience.

It must complete all required documentation to the foreign parent, taking care also to agree with the landlord of the office the details of the rental terms and the text of the contract in accordance with local legislation and the protection of the interests of the company foreign parent. Do the translation and notarial intervention for the documents and make the documentation of the persons responsible for the representation. You should also be the presentation of all documentation and monitoring the registration process and maintain permanent contact with national government bodies.

3.4.4. Implementation of the representative office

For effective execution of their duties, a representative office must have adequate equipment, a professional and competent staff.

According to the legislation concerning the registration and organization of the activities of foreign representative offices, one of the documents to present when you start the registration process is the lease of office premises in a building from the approved by local authorities. It will select a suitable location for the company, verifying the titles and the documentation regarding the qualification of the building in the appropriate category, as well as its maintenance, and negotiate the terms of the contract.

It is possible hiring Chinese employees checking the qualifications of applicants, conducting job interviews, verifying employment history of applicants and compiling labor contracts in accordance with local legislation.

A key question for the representation of a foreign company in China is keeping records of the office in accordance with local Chinese law and at the same time, in a manner acceptable to the company's accounting department. It must find concrete solutions leading to the selection of the most appropriate form of tax clearance and the optimization of the amount payable, and to prepare the instructions to an accounting firm.

3.4.5. Operations Representative Office

The operation of a representative office in China on a significant scale can be costly due to the need to engage China or to send foreign staff, or hire a large number of local employees. The employees sent by a foreign company will also need to adapt to changes in the work environment and business environment. It is for this reason that, depending on the nature of activities that develop in China, set up a representative office after completing the organizational phase of representation, have a continuing operational advice in relation to activities in China. Use a good advice allows great flexibility and optimization of the operating costs of its activities in China.

3.5. Conclusions

When arriving in Beijing we were surprised by how modern is the city and the great number of foreigners there. All of them with an entrepreneurial character and a stay here dedicated to studying among other things, Chinese. Something of great value if you want to start a business in China. But although life here is very cheap compared with the West, coming here and the Chinese courses are expensive. We thought it would be an investment by students, but the thing goes further. The vast majority have a scholarships and more, this economic aid comes from the Chinese government.

Why the Chinese government give scholarships to foreign students to study Chinese and an MBA in "Management"? We can think of two hypotheses and the two are related to the opening of doors that China has made in the international market. One of them is to promote learning this so complicated language and thus then, have people from different countries who can speak Chinese and use them to communicate with companies of their countries to do business out China. Or, conversely, have personnel in the country who can do business from China with companies from their country of origin.

The other hypothesis is politico-cultural. China is "communist". Why do we say it in quotes? Because it has a capitalist economy. Past communist countries such as Spain, ended up suffering a popular revolution. With this plan of the Chinese government having a capitalist-communist policy can avoid this possible revolution. And how is possible encourage the capitalism to the people? Bringing Western people to China.

At school they teach to Chinese the Westerners customs, unlike us, who do not tell us anything about this culture so different. When we got to Beijing, despite this city doesn't have fame for have a Western character as it could be Shanghai, we saw with our own eyes what we had already been informed and warned: Beijing, despite being the capital of a communist country and be more traditional, is a very modern city where you can see the typical Spanish consumerism.

And indeed, a city with much political power that keeps traditionalism and therefore a great reflection of the government's intention: to move to the West. With an incredible

demographic dimension and early incorporation of Western habits is a great opportunity to start a business in China.

But to seize this opportunity must have an entrepreneurial spirit. And now with the times of crisis in the West, especially in our country. Both in the academic, professional or personal aspects, we considerate ourselves optimists and, as we have said before, we believe we must see the crisis as an opportunity. Therefore with a good idea or a good formation must have the intention to expand and not only maintain the idea of stabilize themselves in the own country. It must understand that this is over and will no longer be as before.

At a lower level but may reflect the attitude of an entrepreneur, we have seen how the decision to come to study in China is a step that makes them uphill to most Westerners, just to think that it's a very different country from ours. Different from ours but really we don't know anything because until you come here do not realize how it is. It's very funny how most students do not dare to do the step in coming to know this country and then all who come want to stay. We must break with the easy or comfortable dynamics and risk and gamble on new things.

And is that, here you realize that there are many more job opportunities. China is simply amazing. It's amazing how he's able to convey to any student who comes here, not only that they can find jobs more easily than in their country but also with an entrepreneurial character you can start a business. Is the market of China more developed? We do not believe that it is because is more developed, it doesn't transmit that is an emerging market but markets in Europe and the U.S. are submergence.

Although we didn't perceive it so much when we arrived here, the major barrier when starting a business in China, is not the language. A part of there are translators, if all Chinese speak our language perfectly still would have another major barrier: the culture. Coming here was like landing on another world where even the body language can not be used to communicate. The Chinese people are very humble, hardworking and educated. In contrast, most Westerners who come to China and see than they do not understand even a "NO" shaking his head from side to side, underestimate their intelligence, when the reason is simply that it is another completely different culture. Although China is expanding, may learn our language, we learn theirs, use translators, etc. but we will not be able to change their ways. To invest in China have to go with great humility and drive down the arrogance, but, as we have seen throughout the study, with care and caution.

Thousands of Japanese, German and Italian companies have been introduced in China. There are few Spanish companies, but the Chinese market is very large and still accepts many businesses. But getting into this market does not guarantee success. As seen in the study is very important to get a Chinese partner. More than important, one could say that "mandatory." In fact there are market segments where the administration requires that the foreign firm is associated with a Chinese businessman. Even so, the areas where the administration is not required, they put so many difficulties and delays with the paperwork that is as if demanded.

With everything we have analyzed, we have to learn that in China we have to invest, not to sell, and for this we must have the local partner and, if possible, with the government. As they

say, they are a communist country because the situation demands: population, per capita income... but his strategy as mentioned above is that of a Western capitalist model.

We have seen enough poverty and humility but also great wealth. And is that China seems to be ruled by the rich men and their slaves. Most people who we have seen dedicates her life to work and on the contrary, the other part have a job which gives him life. And is that wealth is in the hands of 90 million Chinese. But a business error would be to consider China as a potential market and only such as this. There are many people but not stupid. To sell in China we should to invest: in factories, companies, definitely producing locally, creating employment... to create wealth. They are between 1200 and 1500 million, a number easy to say but difficult to assimilate still being here. Not have hurry is a maximum very important.

Also as we mentioned in the introduction, despite this reputation copiers, China being the largest investor in R & D in the world. So, we are going to analyze this sector in the Asian market seeing it as another opportunity to invest in this country.

4. R&D and Innovation in China

Who has not ever seen those kind of reports such as "the world factory", with images of hundreds of Chinese assembling gadgets or manufacturing products in seconds to satisfy Western consumerism?



China has the fame of have millions of workers who, despite not being qualified, are able to produce better with a very cheap labor. Well this fame is real, but the situation is changing.

Japan, U.S., Germany, France, UK and Spain were drowned in the crisis and remain. For this reason slashed investment in R & D and innovation. China, by contrast, has not stopped increasing.

4.1. R&D of Multinationals in China: Structure, Motivations and Regional Difference

What we want to highlight in this study of China is that many companies are moving to this country not only for production use, but also to work in R & D.

One way to measure research productivity of a country is to collect all the papers published in specialized scientific resources within a given period. In China this takes the cake, leaving behind even the U.S. in growth rate. In the past five years, have published about 400,000 Chinese research.

One of the government's objectives is to promote innovation and technological development of Chinese enterprises. For this, it has the support of some organizations whose aim is to improve the technological level through the development of programs. With the help of Professor Dr. Qiao-Mei Liang, member of the Center for Energy and Environmental Policy Research, we have done a search of organisms that help and subsidize the R & D in China. The foundations that we have found are The National Natural Science Foundation of China (NSFC) and Beijing Natural Science Foundation. We have used these foundations in our business plan and in the *Annex XII* is possible to see more details of this organizations.

In our collection of information from R & D in China, it seemed interesting document "R & D of Multinationals in China: Structure, Motivations and Regional Difference". Reading this document can understand some of the growth in China after the year of the century. The full document can be read in the annexes, specifically on *Annex XIII: R&D of Multinationals in China: Structure, Motivations and Regional Difference*.

In this paper, the motivations of R&D by multinationals are investigated by using a large firm level dataset from Chinese official statistics on science and technology activities. Growing intensity of R&D activities is found both for foreign owned and domestic firms. But, it is also found that the R&D intensity at foreign owned firms is relatively smaller. This may be due to the fact that foreign owned firms are operating by relying of technological capabilities at home.

Statistical analysis confirms that the major motivation of foreign R&D in China is "market driven" instead of "technological driven" or "human resource driven". However, there is a great variation of foreign R&D strategy across regions. Market driven R&D is found mainly in Guangdong, which is called a world IT factory, and does not have strong universities or PRIs. In contrast, R&D strategy in Beijing is oriented toward technology driven approach, because we can find a cluster of scientific institutions there. Shanghai, with both a large industrial base as well as strong science sector, is in-between.

The bottom line of our findings is that China is still in a stage of technological developments and foreign R&D is driven by Chinese market. However, at the same time, there is a sign of technology driven foreign R&D in particular area, such as Beijing. The next question is how to tap on technological resources in China. In order to answer this question, a more detail study is needed. There should be a great variety in firm level strategy for international R&D. It also depends on home country. For example, it is found that international R&D by multinationals in US and Japan, relatively large countries, are more centrally organized than that in small European countries.

4.2. Myth and reality about R&D in China

Although China is the country with a reputation of imitation and plagiarism, is defying to the world leaders from North America, Europe and Japan in research and development. China's R & D is growing exponentially.

A quick glance at China and India as host locations of R&D reveals the extent to which conventional wisdom from management of R&D internationalization in the West does not apply to these countries. However, it is equally misleading to exaggerate the stereotypical views on China and India as backward locations for conducting R&D and innovation. The reality shows otherwise: Both China and India are rapidly becoming countries suited for R&D and innovation.

Analyzing the myths that people thinks, we have prepared a table where we answer and do reflect on the reality that we believe.

	Myth	Reality
Learning from abroad	Advanced technology comes from the West; China is adopters of the Western technologies	Not always. Joint collaboration with the Western companies is rapidly increasing in quantity in China
Low-cost technology development	Technology development in China is very cheap	Not always. Overcoming the difference in custom and standard is sometimes even more costly
Role of repatriates	The returnees from the West with higher education and excellent working experiences play a major role in enhancing the technological standard and entrepreneurial spirits in China	Not always. The role of the repatriates is quite important in China, but also sometimes exaggerated. Repatriates also include second-class scientists and engineers who cannot survive in the US. In China, local managers complain that even low-quality repatriate engineers often demand high salaries
Standardization	China is more interested in setting its own local standard rather than conforming to the international standard	Not always. China is increasingly interested in participating in setting both local original and international standard
Only for local innovation	The purpose for conducting R&D in Asia is only for local adaptation rather than global innovation	Not always. There are quite a few examples of global innovation originated from R&D in China. For example, just to name a few, Nokia's N2100 and N6108 were developed locally and introduced to the global market.

4.3. Patents applications in China

Recently, on February 9, 2011, WIPO (World Intellectual Property Organization) published a report where you can see that the patent applications in China are growing by their own processes of globalization.

In this document "Recover International Patent Filings in 2010" we have extracted the following table which we found very interesting to compare the patent applications in China with the rest of the world. To start with you can see how China is in the 4 th position in the last year advancing to the Republic of Korea and being the fastest growing its share in the last year.

In contrast, the U.S. leader, has fallen 1.7%, but if I compare it to 2007 we would be talking about a decrease of almost 20%. A fairly significant percentage and more when, from the same year, China has grown over 100%. This way it is possible to see the impact we have quoted above from the crisis on different countries.

PCT international applications – Top 15 countries

RANKING	COUNTRY	2006	2007	2008	2009	2010 ESTIMATE	2010 PERCENT	2010 GROWTH
1	United States of America	51,280	54,043	51,637	45,618	44,855	27.5%	-1.7%
2	Japan	27,025	27,743	28,760	29,802	32,156	19.7%	7.9%
3	Germany	16,736	17,821	18,855	16,797	17,171	10.5%	2.2%
4	China	3,942	5,455	6,120	7,900	12,337	7.6%	56.2%
5	Republic of Korea	5,945	7,064	7,899	8,035	9,686	5.9%	20.5%
6	France	6,256	6,560	7,072	7,237	7,193	4.4%	-0.6%
7	United Kingdom	5,097	5,542	5,466	5,044	4,857	3.0%	-3.7%
8	Netherlands	4,553	4,433	4,363	4,462	4,097	2.5%	-8.2%
9	Switzerland	3,621	3,833	3,799	3,671	3,611	2.2%	-1.6%
10	Sweden	3,336	3,655	4,137	3,567	3,152	1.9%	-11.6%
11	Canada	2,575	2,879	2,976	2,527	2,707	1.7%	7.1%
12	Italy	2,698	2,946	2,883	2,652	2,632	1.6%	-0.8%
13	Finland	1,846	2,009	2,214	2,123	2,076	1.3%	-2.2%
14	Australia	1,996	2,052	1,938	1,740	1,736	1.1%	-0.2%
15	Spain	1,204	1,297	1,390	1,564	1,725	1.1%	10.3%
	All Others	11,531	12,595	13,725	12,659	12,909	7.9%	2.0%
	Total	149,641	159,927	163,234	155,398	162,900		

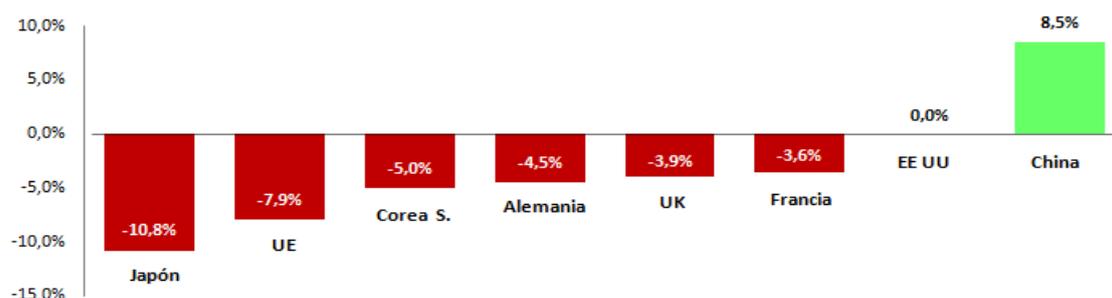
We can also see that the International patent filings under WIPO's Patent Cooperation Treaty (PCT) increased by 4.8% in 2010. However, this increase would disappear if we compare the applications were filed in 2008 rather than 2009. But well, let's stay with the positive that has been the change of decreasing the number of requests to increase it.

In fact, if these numbers will represent in a graph, we would see that this sign change in slope was thanks to requests put forward by the countries of East Asia. The sharp increase in China (+56.2%), the Republic of Korea (+20.5%) and Japan (+7.9%) offset the performance of European countries and the U.S. decreased (-1.7%). So, here we have another way to see how European countries and the United States have been affected more because of the crisis.

As WIPO Director General Francis Gurry said in the presentation of this publication: "This trend has many implications, not least an increased linguistic diversity of the technology that patent offices use as a basis for determining whether an invention is patentable."

Other interesting data we can draw from this publication is that China posted a 8.5% increased the number of patents registered in 2009 as seen in the chart below. On the other hand, the number of requests for protection of brands grew 21% in 2010 compared to 12% fall in the U.S.

Change in Number of patent applications by country (% ,2008-2009)



Source: WIPO

As can be seen in the following table (the entire table can be seen as Annex XXX), 6 of top 10 companies in patent applications are from East Asia. Technology, engineering, energy, telecommunications, defense... are the fields where China is biggest investor in R&D. This can be seen in the R & D spending by 45% in 2009 which has made the telecommunications equipment company ZTE. The cuts in other U.S. American and Japanese companies are worrying. China is becoming in a laboratory, leaving backwards. In ten years we should look at the fine print on the mobile. It is likely that instead of the famous "Designed in California. Assembled in China ", we read one sentence: " Designed and assembled in China".

Published PCT international applications by top applicants

2010 RANKING	POSITION CHANGED	APPLICANT'S NAME	COUNTRY OF ORIGIN	PCT APPLICATION PUBLISHED IN 2010	INCREASED OVER 2009
1	0	PANASONIC CORPORATION	Japan	2,154	263
2	20	ZTE CORPORATION	China	1,863	1,346
3	2	QUALCOMM INCORPORATED	United States of America	1,677	397
4	-2	HUAWEI TECHNOLOGIES CO., LTD.	China	1,528	-319
5	-1	KONINKLIJKE PHILIPS ELECTRONICS N.V.	Netherlands	1,435	140
6	-3	ROBERT BOSCH GMBH	Germany	1,301	-287
7	0	LG ELECTRONICS INC.	Republic of Korea	1,298	208
8	2	SHARP KABUSHIKI KAISHA	Japan	1,286	289
9	-3	TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)	Sweden	1,149	-92
10	-2	NEC CORPORATION	Japan	1,106	37

However, none of the universities in China has entered in the ranking of universities with more patent applications, which is dominated by universities in the United States and other developed economies.

In the next table it is possible to see the dominance of American universities which reflects, we think, the strength of the American universities system and also the early adoption of technology management program by American universities. Also in the list, it is possible to see that Japan improves in this table of commercialization. The complete list is possible to see in the annex XX.

Published PCT international applications by top university applicants

2010 RANKING	POSITION CHANGED	APPLICANT'S NAME	COUNTRY OF ORIGIN	PCT APPLICATION PUBLISHED IN 2010	INCREASED OVER 2009
38	2	THE REGENTS OF THE UNIVERSITY OF CALIFORNIA	United States of America	306	-15
103	4	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	United States of America	145	0
115	16	BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM	United States of America	130	4
144	0	UNIVERSITY OF FLORIDA	United States of America	107	-4

This could justify what experts call "brain drain". Chinese students go to study abroad to benefit from the teaching of prestigious universities as the American, but as the Asian giant grows it begins to attract to home well-trained specialists and abroad. Given this reality, there is talk in some countries, and China prefers it, about "brain circulation", rather than capture and escape.

In fact, speaking with Chinese friends that we have made during the trip, they have told us that go out of their country is not as easy as in other countries like ours. To begin they have to pay

a deposit of 20000 RMB to obligate the student who go out to study, come back. Thus, the government allows the students take advantage of prestigious teaching universities such as the United States and return to China to implement it.

Thus, we conclude with this, that this is the reason why patent applications in China from most companies, not universities. Due to the importance of taking the patents are from Chinese companies, we are going to consider how is the system of protection of industrial privacy policy.

4.4. Intellectual Property Rights in China

Often Intellectual Property Rights ("IPR") are the major preoccupation of Western companies to establish their China strategies. Since foreign technologies continue to supply the reckless expansion of China, the counterfeiters are taking advantage of the situation. Copiers become more efficient, ubiquitous and, if not properly controlled, can pose serious problems for projects in China of any company.

The intellectual property protection in China is an uphill struggle. International pressure, including joining the World Trade Organization ("WTO") and the constant pressure has begun to take effect. The central government began to manage IPR seriously, as reflected in the continuous improvement of the legal regime of human rights. Chinese courts and judges have begun to improve the judicial protection under the guidelines of the WTO. Officials cooperate more with foreign companies regarding the protection of these rights. The Chinese authorities understand the importance of a solid system to generate a favorable business environment and for this reason give priority to the issue.

Chinese problems with respect to IPR should not stop a potential investor, and that it would fail to take advantage of China's production and market opportunities. Instead, the investor should be prepared mentally, strategically and legally for the fact that perhaps his patent or trademark is pirated or counterfeit. This phenomenon has now become an accepted fact in the daily business in China.

Notwithstanding this cautious optimism, can and should take appropriate measures to protect IPR in China. The next section presents the general situation of the different types of IPR, as well as practical protection measures that should be enforced before carrying out their investment in China.

4.4.1. Registration and protection of trademarks

In China the trademarks are registered in the State Trademark Office (STO; State Trademark Office), a ministerial department of the State Administration for Industry and Commerce (SAIC, State Administration for Industry and Commerce). You can appeal decisions of this office before the Board of Appeals and trademark (TRAB; Trademark Review and

Adjudication Board), appeals the jury's internal trademark Office. The local administration for industry and commerce (AIC; Administration for Industry and Commerce) made the implementation of trademark rights.

In 2001, was approved the amendment of the Law on trademarks that allows to impose more stringent measures. The civil law enforcement is now easier and more attractive by allowing applicants access to preliminary injunctions and can recover costs and research expenses.

4.4.1.1. The registration

The registration of a trademark in China is a fairly simple process although it is slow and takes an average of between six months and one year. You can not submit applications directly, but is done through a designated agent to submit the claim on their behalf.

First, determine the category of service or product you wish to register your brand. Along with a copy of your logo and brand name to register, are presented in the trademark office (TO; Trademark Office) for approval.

The entire cost of the registration of a trademark is worth about U.S. \$ 1500-2000.

Council for registration

International Agreements: The use of international conventions as a basis for registration may be easier. As a member of the Paris Convention, applicants from Spain can claim the priority use of the trademarks. It has six months from the date of first filing in any other member which entitles you to priority in China.

Companies using the Madrid Agreement to register their marks in many countries at a time can use this process to China too. First you must file an application with the International Office of World Intellectual Property Organization (WIPO) to add to China's list of countries where to register its mark, then that issued the request International Office in China. The international registration is valid for 20 years and is renewable.

Cover all its bases: You must agree to register the mark in all kinds of products they may be related to their products. Frequently , pirates register in famous overseas brands totally different kinds of goods for which such goods are known.

Choose the correct trademark - the name is the key: There is a great ability to select a registered trademark china, which is compatible with the desired image of a company, establishing a strong brand in the Chinese market and meets the criteria of the Office trademarks which are often confused.

Most foreign companies create simple phonetic equivalents for the original company or brand. Often the choosed phonetic helps sales, since a foreign-sounding name traditionally carries a certain prestige. It also avoids criticism of the Trademark Office on what a trademark right, because the transcript of the company name is eligible in most cases.

The words or designs that can not be registered as trademarks in China include flags and emblems, place names and generic names of goods. Chinese law also excludes the words or symbols deemed "harmful to public morals or social mores."

4.4.1.2. Implementing measures

Violations of trademarks in China cover a wide spectrum, from copy of the format of the product, to the approximation of brand name, even to the scientific forgery in which the only discernible difference between items true and false is the price.

Event that violates your trademark, you have the option to claim administratively or court. Judicial execution consists of two categories: criminal and civil. The following table sets out options for enforcement:

Procedure	Advantages	Disadvantages
Administrative	Fast results - maximum: 3 months. Illegal activity immediately ceases.	Fines imposed by the relevant local authorities. Rarely pay compensation. Regional protectionism - the local authorities seek substantial evidence. Is unlikely to be monitored.
Judicial: - Civil - Criminal	Public coverage - the courts are not subject to regional pressure. Greater financial compensation.	The whole judicial process cost about \$ 20,000 or even more. Longer process.

However the main problem is not focused on China's judicial system, but in the enforcement of judgments. Often the judgments are not enforced properly and as such it is possible for counterfeiters continue to manufacture products for sale or and even after that ruling.

If you choose an appropriate method of execution should be considered the alternatives and what is required by your specific situation. But criminal proceedings, although are more expensive and take longer, they tend to be more effective to stop the violation of a trademark.

Administrative procedures can provide a quick solution and give a feeling of satisfaction to see that the local AIC raided offenders. However, the fines are not high enough definitely to deter offenders and potential counterfeiters illegally copy their brands.

In addition, if you choose the criminal enforcement, it is recommended that you hire a lawyer experienced in matters of Chinese intellectual property rights that has extensive contacts both judicial and political and media. These connections proved vital to ensure the success of the case.

4.4.2. Patent protection

The State Office of Intellectual Property (SIPO, State Intellectual Property Office) is the administrative department that issues patents in China.

The implementation of the Law on industrial property rights as amended on July 1, 2001 has resulted in streamlining the application procedures and clarifying the rights of employers, employees and independent inventors.

One of the main objectives of the Act is to encourage domestic innovation rather than protection of foreign patents. Although no direct benefit to foreign patents in China, should contribute to a culture of awareness towards patents by Chinese officials.

Like patents with trademarks - are awarded on the basis of "first to file" rather than "first to invent" as practiced in most other countries. Strictly speaking, it is recommended that you register your patent in China even when their short-term projects do not require a presence in that country.

Patents are registered in the SIPO and should make this process through an agent by that office. To be covered under the protection of Chinese law, patents must be registered with the SIPO. To carry this out, you may be asked to document (translated into Chinese) on the investigations or records of its previous foreign patents.

Unlike most other systems of protection of intellectual property rights, enforcement of rights in China is done through the courts. Award amounts are usually higher amount of damages to patent owners than for other IPR rights in China. However, administrative disputes become a more viable option, as the local patent offices (PAO; Patent Administration Office) is more strict to enforce rights through administrative means.

4.4.3. Licensing of intellectual property rights

Most foreign companies doing business in China sign one or more provisions of leave with their Chinese counterparts. IP licenses are usually of two types:

- The license of proprietary technology, copyrights, patents or trademarks related to a joint venture contract.
- Direct licensing transactions with companies without relationships with Chinese companies or companies with foreign capital (FIE Foreign Invested Enterprise.)

Is recommended for foreign investors not award in China the sensitive technology licenses except to a company having a direct ownership interest, since it is impossible to guarantee that a Chinese licensee, or the law of China, safeguard that technology.

Although many under license agreements are working well, disputes about proprietary technology are frequent and often for the following reasons:

The China's regulations that govern the licensing of technology, try to ease the Chinese parties to have access to the technology under favorable conditions and with few restrictions.

Especially in cases of joint ventures, there is an inherent conflict of interest between Chinese and foreign partners. In most cases, the Chinese partner wants the new technology to increase its profitability, while the foreign partner sees the company as a gateway to the Chinese market.

Ways to license trademarks are exposed to blatant violations: it is common practice for licensees factories producing stocks in excess of the quotas agreed in the contract and sell the surplus on the black market at significant discounts. Another serious problem is the theft of company secrets by employees in an enterprise with foreign capital. Are associated with a competitor or set up their own competing company. Some foreign companies have successfully prosecuted offenders, but the success rate in this sense is not good.

4.4.3.1. Types of licensing agreements

Foreign companies generally fall into two types of licensing agreements in China:

- Licensing of intellectual property.
- Technology transfer.

License intellectual property (trademark / copyright): The effect of granting a license to a trademark or copyright to a company in China or foreign-owned enterprise for manufacture and export remains a common and simple process in which many are not necessary many or any foreign technology.

You can sign licensing agreements directly between the manufacturer and sometimes with a distributor / wholesaler / agent who in turn grants a sub-license the trademark holder or copyright from the manufacturers. It is recommended to conduct a comprehensive audit and pre-assessment and evaluation of potential licensees before the establishment of any agreement.

Technology transfer (patents / know-how): Technology transfers usually occur between a foreign company and a joint venture company or 100% foreign capital it needs some sophisticated technologies to improve their business. These foreign-owned firms tend to be manufacturing companies, the transfers are usually in the form of a license or direct sale or transfer of related technology.

Recommendations

For agreements that involve greater risk of misappropriation, it is recommended that staff members manage direction or consulting positions in the factory of the licensee to ensure compliance with quality standards and to meet the licensing agreement. The most common approach is to send personnel from a regional office to monitor activities in the factories of the licensee.

It is rare that foreign companies grant license cutting-edge technologies to their own joint ventures, unless the Chinese partner is a limited partner. In the case of sensitive technology would be introduced in China for business reasons, foreign companies often do so through a company 100% foreign capital.

4.5. The protection of intellectual property rights improvement in China

The system of protection of intellectual property rights in China is improving thanks to a project developed in collaboration with the European Union. The manager of this is the president of the European Patent Office (EPO acronym in English), Benoît Battistelli.

Battistelli Said in October 2010, at an event held in the joint pavilion of Belgium and the EU in the World Expo in Shanghai, China has Become One of the country clubs linked to the EPO Not That Are Registering more patents worldwide.

According to statistics from the office, the number of patents filed by Chinese companies in the EPO increased from 163 in 2000 to 1,621 in 2009.

This increase is due in part to the cooperation in the field of intellectual property rights between the State Intellectual Property Office of China (SIPO, an acronym in English) and EPO.

Cooperation between the EPO and the SIPO has been instrumental in creating a system of protection of intellectual property rights in modern China and has also paved the way for more substantial projects in the field of cooperation programs with the EU.

The collaborative project, called "IPR2" aims to strengthen the protection of intellectual property rights by focusing on reliability, efficiency and accessibility of the Chinese system. The project will enable China IPR2 establish and operate a modern and efficient system for the legal protection of technical inventions.

Coinciding with the 25th anniversary of bilateral cooperation, China and the EU have announced in October 2010 the joint work plan for the development of the project in 2011 in the EU-Belgium flag.

The European Union has continued to invest resources and funds in the protection of intellectual property rights in China. Companies can use these rights as a business tool that adds value.

With the development of the intellectual property rights in China, SIPO has become one of the five largest patent offices worldwide.

The EPO and SIPO are participating in a series of projects launched by these offices to avoid duplication of procedures and ensure the quality of patents for the benefit of the economy.

4.6. Conclusions

The protection of trademarks and patents in China is mainly based on the concept "the first in time", or rather "the first in use" or "the first in invent " as is customary in the West. Therefore, is recommended register your trademark as soon as possible - or risk to that another company steal it in front your noses. Thus, even if you don't have a immediate project to settle in China, we recommend that you register your brand and its patent without delay.

The fact that companies have many patents issued reflects the commitment to foreign investment in this market. And is that, is quite significant the number of China's patent office to entities in other countries: Japan (12%), Taiwan (11%), USA (7%) and Germany (2%).

Although many times these patents can be considered nonsense and that only a smaller percentage of them is in operation, this is somehow encouraging innovation. The trouble is that many times are made to delimit areas of innovation, so that other competitors can not enter them without paying a fee to the patentee.

Innovation policies in the European Union remain different for each government doing weak cohesion. China is evolving rapidly in the development of intellectual property due to the rapid transition as experienced by the distribution of patents granted to the holders of the same.

The image of the massive cheap production, limited standards of quality, image and low added value that is perceived now from this country, may soon become obsolete if the current effort gives the results that leaders in Beijing expected. Since China depends increasingly on innovation and less in production, the importance of intellectual property rights will increase.

With this expansion stage in a country of such magnitude, it is not surprising that developed countries are not only very aware of the scientific and technological China, but also seek and develop scenarios of cooperation.

And is that, as we concluded in paragraph 3.6, China attracts foreign students with government scholarships to study in the country, these international relations also use them to send Chinese students to foreign countries.

However, when combining the impetus to cooperation in industrial R & D and technology transfer, the experts note how difficult it is for Westerners to develop in the complex system of patents and intellectual property protection of China.

In conclusion, we can suggest that foreign companies, when launching and conducting R&D activities in India and China, (1) need to acknowledge that it is no good to try to blindly transfer their R&D management based on the common sense from experience in developed countries, (2) must divest themselves of their deeply rooted prejudices about India and China, and only then can they, (3) think of how to extract the maximum potential of their local operations.

5. Implementation of the study

Following this study of the Chinese market, we are going to do the business plan taking advantage of the best alternatives analyzed. Thus the next section shows the justifications for the choices we have made in order to find success with our business proposition.

Investing in ICT in China

ICTs are a valuable tool to not only cut costs but also to improve business processes that can attract and retain new customers, create new innovative products and services and enter new markets or geographies. And what better to turn to technology to differentiate and gain competitive advantage.

Furthermore, the current crisis has nothing to do with the world of technology. Comes from the traditional world of brick, the bench of always, and the technology is there to save them with solutions that demonstrate efficiency, cost savings and new opportunities of all kinds.

That's why we consider do a business plan of a product / service of the ICT sector. Driven by our academic knowledge, eagerness for the sport, our imagination and aware that the new technologies are part of our lives, we believe that this service will modernize the world of gyms and give a distinctive touch to the company that acquire it. As Albert Einstein said, "in times of crisis, imagination is more important than knowledge".

The crisis is a very good opportunity to maintain economic relations with China, even if it requires a new way of doing business. We must seize that China has kept foreign investment and remains open in this regard. All the more reason to travel to this country in search of business taking advantage of the fact of they are best positioned to invest in the world thanks to its large reserves.

Kind of technology

The common denominator of our products is based on RFID technology. This technology has very good results in the companies that are currently using. It is a clean and optimal way to gather information and then process it and offer a complete service.

RFID is expected to not only generate new business models, but also become the cornerstone of the new stage of development of the Information Society, called "Internet of Things", which potentially connects Network to any object with each other, data systems or business processes.

In any case, the development of RFID will allow companies be more competitive in a global world favoring above all, the advanced development solutions locate and identify objects.

These solutions provide, no doubt, with the Internet and mobility solutions, the entrance to the great revolution of society in the future.

It is expected that the use of RFID technology has a major impact on daily activities of enterprises, institutions and citizens when as more products are labeled and reach the final customers encouraging the emergence of new applications and services based on RFID.

So for these reasons, in addition to meet the needs of the product launch, we believe it is a good time to invest in the RFID market in China.

Determination of the legal form of the company

If you are from out of China and you want to do bussiness in this country, there is a basic rule we have learned: it is very important to get a Chinese partner to receive the aid given by the administration. We have seen in the study that the central government uses joint ventures as vehicles for transfer of advanced technology and management techniques from foreign firms to the state. In return, foreign investors benefited from access to markets and local suppliers, as well as a modest investment and operational costs.

Given the above, our company is chosen by a constitution in the form of limited liability company, equity joint venture (EJV) with Chinese and Western partners.

It has also taken account of the fact that the company intends to consolidate rapidly, so that should a robust enterprise from the outset with great agility in its activities, resulting in the limited partnership as the best option.

China's law of the EJV's requires that the foreign partner contributes 25% of the capital of the company to be classified as foreign owned enterprises and can enjoy tax advantages. In the writing, the most important to include are the statutes, which establish the essential rules for the company's corporate performance.

Within the team, we require that the director meets certain characteristics. Shall be a person of Chinese origin, but also trained in foreigner universities. In this way the company will benefit in the bureaucratic level, since as we have seen in Section 3, China attaches great benefits and support for autochthonous entrepreneurs. But at the same time, we are interested in the West who is trained to give the company structure and business knowledge of European or American.

Production in China

Another advantage seen in the study of China, is that they are major producers of hardware. That's why installing our company in China, we can access all the necessary hardware directly and cheaply. Among the products of our company will manufacture some other companies will buy. But all come from Chinese companies that give us more affordable prices. That's why we have chosen companies such as Beijing Topview Tech Co. Ltd., Shenzhen

Ji Sheng Da Technology Co. Ltd., Sunbestfid Technology Co. Ltd., High Cloud Electronics Ltd. Guangdong, Beijing Cyber farsighted Electronics Science And Technology Ltd ., Beijing Dongda Jinzhi Technology Co., Ltd. Its proximity to our headquarters, and the right to negotiate over Chinese trade allows obtain products at low prices.

We have also seen that the Chinese are methodical in the manufacture by chain and we know that China's hardware industry is expanding, so it will be interesting that the Director of Production is Chinese to give us his vision and experience in the way we produce devices hardware in China, giving contacts and advice which companies should to negotiate with us.

It is important to exploit the cheap labor that we have seen that China offers. It is for this reason that some of our products will be assembled at the factory. Chinese workers will assemble the pieces manually, as we find it more affordable than buy equipment to do so.

Differentiation with Chinese companies

As mentioned, our company will be a mix of western and china, so we will also see benefits contributed by the West. In our company they will take care of quality and approval process. They monitor each and every product we produce, try to detect possible problems and propose solutions. On the other hand, the director of this department is responsible for legal advice to the technical production on the current legislation in terms of quality and traffic control measures.

In the first study of trade we have seen that Chinese companies do not have good quality control. In this area are more developed the West ones. That is why we want to give our Occidental quality to our Chinese product. To this end, requires the Director of Quality and Certification is experienced and trained in the West countries.

Another differentiating factor is to make a good after sales service. Through our experience in China, we see that companies just trying to sell and sell, do not retain the customer, and once bought only interested in removing it as soon as possible to recapture new customers. This will not happen in our company. Taking the Western model, it is essential to a good product / service and leave the customer happy with a post-sale service, making periodic reviews and monitoring the company's products meet customer expectations. This will help us expand and look good towards new customers, giving confidence to all new clients.

Finance

The Chinese government promotes R & D and emprendimineto, gives money to institutions that provide assistance to technology-based businesses start-ups. In this way the organism National Natural Science Foundation of China and Beijing Natural Science Foundation provided support for projects that develop R & D in the country.

We also need a loan, we have seen the Chinese government promotes entrepreneurship. As a company, we will present our project proposal to apply for a loan that will be injection of capital to the company.

Bussines Plan

After seeing the alternatives presented by the study and choose what we want to maximize the profitability of our idea, we can make the business plan where we will present the business idea.

6. Conclusion

Investing in ICT

"Times are Changing", said Bob Dylan. With the new economic scenario in which companies face in the West and especially in countries like ours, the challenge shouldn't be surviving but growing in adverse conditions. The business has to adapt to changing times.

As Carlos Slim, founder of Grupo Carso, says: "all crises are opportunities". In fact, in the neighbouring country we have been, Japan, the calligraphy which they use to write "crisis" is composed of two symbols: danger and opportunity. That is, we face a time of opportunity, but that in turn involves risk.

In this sense, we must go for innovation because you can not live in the past. So entrepreneurs should find the most innovative and creative ways that surprise the market and achieve business goals. In this context, ICTs are a valuable tool to not only cut costs but also to improve business processes that can attract and retain new customers, create new innovative products and services and enter new markets or geographies. And what better to turn to technology to differentiate and gain competitive advantage.

That's why we have done a business plan of the explained product / service. Driven by our academic knowledge, eagerness for the sport, our imagination and aware that the new technologies are part of our lives, we believe that this service would modernize the world of gyms and give a distinctive touch to the company that acquire it. As Albert Einstein said, "in times of crisis, imagination is more important than knowledge".

ICTs are resisting the impact of the current crisis much more healthy than the rest of the economy, simply because the crisis has nothing to do with them. Moreover, as seen in our financial plan, we are talking about projects in which budgets and decisions to approve chain is much simpler. We believe that technology will be one of the few engines of economic revitalization in the current crisis.

Furthermore, this crisis has nothing to do with the world of technology. Comes from the traditional world of brick, the bench of always, and the technology is there to save them with solutions that demonstrate efficiency, cost savings and new opportunities of all kinds.

China stops to copy and starts to invent

The crisis in China has not beaten severely because that country has "a centralized government, with five-year plans. " They know that the possibility of copying is infinite, but the ability to differentiate is an added value. So are investing in both R & D that has been placed in the top world ranking. You must buy everything in China is competitive in price and quality, as its exports of capital goods and most technologically advanced are which have grown more.

Until recently they were only famous for manufacturing and export. But with the wealth that they have gone accumulating with the transactions, it has also become one of the major

consumer markets of the world and also in a financial center where comes out money to buy companies from the first worldwide division and raw materials in enormous quantities. In very few years has gone associating himself complex technologies and today also competes, in the industrial field, with the West in the manufacture of advanced electronics, information technology, telecommunications or transportation (going to start producing, for example, a large commercial aircraft which will be ready in 2020 and likely will mean a future competition for Boeing and Airbus aircraft manufacturers in the Chinese aviation market).

As McGregor says in one of the books we have consulted for the report (China. Millones de consumidores), "China has rebuilt itself". All this, thanks to the accumulation from the cheap labor that always characterized this country, and has built large companies through access to subsidies, protected markets and government contracts. Now these companies will have to acquire international competitiveness, and Chinese management systems need to be modern and effective.

China, the future of entrepreneurial

The crisis is a very good opportunity to maintain economic relations with China, even if it requires a new way of doing business. We must seize that China has kept foreign investment and remains open in this regard. All the more reason to travel to this country in search of business taking advantage of the fact of they are best positioned to invest in the world thanks to its large reserves.

While we have been in China, we have seen that the Internet is not as well served as in the West. Here the connection quality can despair. Perhaps it is the number of customers that they serve. And is that, people are increasingly familiar with using the network. Hence, companies have wanted to take advantage of this usage to combat the crisis. Thus, Chinese websites as taobao.com are popular for being a "virtual mall" where you rent shops to sell products at prices more affordable than in real schools. A motivation for new technologies because they are welcome in this country.

With the communist-capitalist policy is China, is appearing more and more the middle class. This market of 280 million people, is the sector which should directed any venture in China. To this end, we recommend visiting this country because as you can see in the report, the Chinese have the information of their country enough protected and although we can help ourselves with the experiences of others, explanations of books or websites that talk about the country (as we have done to elaborated this report), you don't understand well their working dynamic until you're not here. The truth is that to understand the dynamics at 100% is very difficult even being here, but it helps a lot.

So you could say that China has on one side the way to work of the past, cheap labor and a lot of production, but has one foot in the future. Among all students who come here, we agree to confirm what we heard in Spain: "China will become world power". And is that, China has seen outside a market and is changing the course of the world.

Not sell there, not shop there, not be or not manufacture in the Asian giant can be and, if they are not doing, the beginning of the end for many large and medium corporations. Is the large market of today and especially the future and will soon exceed the markets of Europe and the U.S. together. For as we said in the report, is not that China is a emerging market but the European and U.S. market have become submergence.

In China you play away from home

As we have seen in the report, is not gold that glitters. The huge market has a number of characteristics, unique features (as we explain in the report with anecdotes) that makes it difficult the landing of some Western businessmen accustomed to quick decisions in their businesses, of clear and stable legal frameworks, and of diligent employees with initiative and a small and efficient bureaucracy.

In China business means a lot of manoeuvres and subterfuge: nothing is as it seems and never easy to operate in China. With the steps we explain in the report, we wanted to prepare the entrepreneur to what facing when starting a business in China.

In our business plan we have applied the explained advices, and directly rather than seeking to compete against China, we have associated with them. This is one of the ideas that have to be clearer when entering the Chinese market. Here there are no Westerners, Americans, Africans, etc. Here only difference between "Chinese" or "non-Chinese. " And even in everyday life we have seen that the Chinese are racist with themselves, when we are talking about business, they make difficult to foreigners.

The country with a quarter of the world's population, a tasty temptation for the entrepreneur who sees it as a market with a vast number of consumers. But as we saw in the report, in China will follow the "rules" of China and if you do not want to go in the wrong way, don't come here to selling, come to investing.

6. Conclusión (español)

Invertir en TIC

“Times are changing” decía Bob Dylan. Con el nuevo escenario económico en el que se encuentran las empresas en Occidente y sobretodo en países como el nuestro, el reto no debería ser la supervivencia sino crecer en condiciones adversas. El negocio se tiene que adaptar a los nuevos tiempos.

Como dice Carlos Slim, fundador del Grupo Carso, “todas las crisis son oportunidades”. De hecho, en el país vecino al que nos encontramos, en Japón, la caligrafía que utilizan para escribir “crisis” se compone por dos símbolos: oportunidad y peligro. Es decir, estamos ante una época de oportunidades, pero que a su vez implica riesgo.

En este sentido, hay que apostar por la innovación porque no se puede vivir del pasado. Por eso los empresarios deberían hallar las formas más innovadoras y creativas con que sorprender en el mercado y alcanzar los objetivos de la empresa. En este contexto, las TIC suponen una valiosa herramienta capaz de, no sólo recortar gastos, sino también de mejorar los procesos de negocio que consiguen atraer y retener nuevos clientes, crear nuevos productos y servicios innovadores y entrar en nuevos mercados o geografías. Y que mejor, que recurrir a la tecnología para diferenciarse y lograr una ventaja competitiva.

Por eso hemos hecho un plan de empresa del explicado producto/servicio. Llevados por nuestros conocimientos académicos, afán por el deporte, nuestra imaginación y lo presente que están las nuevas tecnologías, pensamos que este servicio modernizaría el mundo de los gimnasios y daría un toque diferenciador a la empresa que lo adquiriera. Y es que, Como decía Albert Einstein, “en los momentos de crisis, sólo la imaginación es más importante que el conocimiento”.

Las TIC están resistiendo el impacto de la crisis actual de forma mucho más sana que el resto de la economía, simplemente porque la crisis no tiene nada que ver con ellas. Además, como se puede ver en nuestro plan financiero, hablamos de proyectos en los que los presupuestos y la cadena de decisiones para aprobarlos es mucho más sencilla. Creemos que la tecnología va a ser uno de los pocos motores de dinamización económica durante la crisis actual.

Además esta crisis no tiene nada que ver con el mundo de la tecnología. Proviene del mundo tradicional, del ladrillo, de la banca de toda la vida, y la tecnología está ahí para salvar la papeleta con soluciones que demuestren eficiencia, ahorro de costes y nuevas posibilidades de todo tipo.

China deja de copiar y empieza a inventar

La crisis en China no ha golpeado fuertemente por que ese país tiene “un gobierno centralizado, con planes quinquenales”. Saben que la posibilidad de la copia es infinita, pero la habilidad de diferenciarse es un valor añadido. Por eso están invirtiendo tanto en I+D y se ha colocado en los primeros puestos del ranking mundial. Hay que comprar en China todo aquello

que sea competitivo en cuanto a precio y calidad, ya que sus exportaciones de bienes de capital y de mayor desarrollo tecnológico son los que más han crecido.

Hasta hace poco solo eran famosos por fabricar y exportar. Pero con la riqueza que ha ido acumulando con sus transacciones, se ha convertido además en uno de los principales mercados consumidores del mundo y también en un centro financiero del que sale dinero para comprar empresas de primera división en todo el mundo y materias primas en cantidades ingentes. En muy pocos años ha ido haciendo suyas tecnologías complejas y hoy compite también, en el terreno industrial, con Occidente en la fabricación de productos avanzados de electrónica, informática, telecomunicación o transporte (va a comenzar a producir, por ejemplo, un gran avión comercial que estará previsiblemente listo en 2020 y que supondrá una futura competencia para los constructores aeronáuticos Boeing y Airbus en el mercado de aviación chino).

Como dice McGregor en uno de los libros que hemos consultado para hacer el informe (*China. Millones de consumidores*) "China se ha reconstruido a sí misma". Todo esto, gracias a la acumulación procedente de la mano de obra barata que siempre ha caracterizado a este país, y ha construido grandes compañías mediante el acceso a las subvenciones, los mercados protegidos y las contrataciones de la Administración. Ahora estas compañías tendrán que dotarse de competitividad internacionalmente, y necesitarán sistemas de gestión chinos que sean modernos y eficaces.

China, el futuro del emprendedor

La crisis es una oportunidad muy buena para mantener relaciones económicas con China, aunque suponga una nueva forma de hacer negocios. Hay que aprovechar que China ha mantenido la inversión extranjera y continúa abierta en ese aspecto. Razón de más para viajar a este país en busca de negocios aprovechando que son los mejor posicionados de invertir en el mundo por sus grandes reservas.

Estando en China hemos visto que internet no está tan bien servido como en Occidente. Aquí la calidad de la conexión desespera. Quizá sea por la cantidad de clientes a los que abastecer. Y es que, los habitantes están cada vez más familiarizados con el uso de la red. Por ello, empresas han querido sacar ventaja a este uso para combatir la crisis. Así, páginas chinas como taobao.com tienen mucho éxito por ser un "mall virtual" donde se arriendan tiendas para vender productos, a precios más accesibles que en los centros reales. Una motivación más de que las nuevas tecnologías son bienvenidas en el gran asiático.

Con la política comunista-capitalista que tiene China, está apareciendo cada vez más la clase media. Este mercado de 280 millones de personas, es el sector al que convendría dirigirse cualquier emprendimiento en China. Para ello, recomendamos visitar este país porque como hemos visto, los chinos tienen bastante protegida la información de su país y aunque nos podamos ayudar de las vivencias de otros, explicaciones de libros o webs que hablen sobre el país (como los que hemos utilizado para hacer el informe), no acabas entendiendo bien como trabajan los chinos hasta que no estás aquí. La verdad es que entender su dinámica al 100% es muy difícil aún estando aquí, pero ayuda mucho.

Así pues, se podría decir que China mantiene por un lado la manera de trabajar del pasado, mano de obra barata y mucha producción, pero tiene un pie en el futuro. Entre todos los estudiantes que venimos aquí, nos ponemos de acuerdo en confirmar lo que tanto hemos escuchado en España “China va a ser potencia mundial”. Y es que China ha visto fuera un mercado y esta cambiando el rumbo del mundo.

No vender allí, no comprar allí, no estar o no fabricar en el gigante asiático puede ser ya, si no lo están haciendo, el principio del fin para muchas grandes y medianas corporaciones. Es el gran mercado de hoy y sobre todo del futuro y va a rebasar muy pronto los mercados de Europa y EE UU juntos.

En China juegas fuera de casa

Como hemos podido ver en el proyecto, no es oro todo lo que reluce. El gigantesco mercado tiene una serie de características propias, de rasgos peculiares (como explicamos en el informe con las anécdotas) que dificulta el desembarco de unos empresarios occidentales acostumbrados a decisiones rápidas en sus negocios, a marcos jurídicos claros y estables, a empleados diligentes y con iniciativa, y a una burocracia reducida y eficaz.

En China los negocios implican una gran cantidad de maniobras y subterfugios: nada es lo que parece y nunca es fácil operar en China. Con los pasos que explicamos en el informe, hemos querido preparar al emprendedor ante lo que se esta enfrentando a la hora de montar una empresa en China.

En nuestro plan de empresa hemos aplicado los consejos explicados y directamente en vez de buscar competir contra China, nos hemos asociado a ella. Esta es una de las ideas que más clara tiene que quedar a la hora de introducirse en el mercado chino. Aquí no existen los occidentales, americanos, africanos, etc. Aquí solo se diferencia entre “chino” o “no-chino”. Y pese que en la vida cotidiana hemos visto que los propios chinos son racistas con ellos mismos, a la hora de hacer negocios no se lo ponen tan fácil a los extranjeros.

El país con un cuarto de la población del mundo, una suculenta tentación para el empresario que lo ve como un mercado con un inmenso número de consumidores. Pero como hemos visto en el informe, en China se siguen las “normas” de China y si no quieres salir mal parado, aquí se viene a vender, se viene a invertir.

BUSINESS PLAN



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1. Executive summary

1.1. Understanding of the business concept and definition of object and activity of the new company or new project

1.1.1. Needs to be satisfied / useful for potential customers

Nowadays, we are in society where the people give great importance to their body. Specifically, Chinese society is characterized by a healthy lifestyle and very close to the sport. But sometimes it's hard to practice outdoor, the weather in Beijing is very extreme. The last summer, it arrived to get 40 °C and in winter -25 °C. Also, the proximity of the Gobi Desert causes sand storms which have come to threaten seriously to Beijing. There were sand storms which covered all the air of Beijing with a choking dust. Besides of the climate, the pollution of the city is very dangerous for sports people. Beijing can be considered a dry city because practically only in summer it rains. For this reason, the Beijing's air keeps it dirty almost all the year.

Leaving aside the unfavourable weather situation for outdoor sport and causes people come increasingly to the gym, and that is the reason why we think about renew the fitness technology. We want to get satisfying the needs of athletes, taking control of the routines and exercises to be performed quickly and without wasting time with instructors. It will be all interactive and technological, and each user can access their routines the easy way using Internet.

1.1.2. Product / service to commercialize

We present a new product that will revolutionize the fitness. We have created a new wristband. This wristband is personal instructor fitness. It contains a technology that is able to guide in the gym exercises. It's called Gymshou.

The clubs which decide to introduce the technology Gymshou in their fitness rooms could offer their customers an interactive personal trainer service accessible from anywhere using Internet. Besides this, the gym also have advantages, since Gymshou offers a way to manage the gym, optimize investment by identifying those users who are at risk of dropping out, thanks to the "attendance sheet" which with is possible see which customers attend less to gym.

Also, the owner can identify areas of their facility which merit further expansion or promotion, and will be shown which machines are more utilized to do a study of their yield. The Gymshou system not only enables them to maximise their current investment, but also provides invaluable data on which to base future improvements. Help is also the personal trainer gym, as they could see the evolution of each user and send them messages to correct some

activities or answer questions, gyms trainers are then free to focus on other tasks and can review every user's progress through a centralised programme at the end of the day or week.

The products it brings to market our company are: Gymshou wristband, the GS-receiver, the GS-Monitor and the GS-Calibrate. How to use our service is easy and convenient. Each gym will make available to its customers the Gymshou. Through GS-Calibrate, which will be in receipt of the gym, the Gymshou will be calibrated introducing digitally the user information. Thus, with the wristband and using RFID technology, the customer could communicate with machines in the gym.

Its use is easy. The customers only have to bring the wristband to the receiver of the machine that will do the exercise. These receptors are the GS-Receptors, and charge of collecting user information that is using the machine, and send to the database all the information via Bluetooth.

The machine which will receive all the information is called GS-Monitor, and is an interactive kiosk. The GS-Monitor has several features. On the one hand, if the user wants to see routines to be performed, has to pass the Gymshou by the RFID receiver which containing the GS-Monitor screen and will appear a whole circuit of personal fitness training to be carried out that day. On the other hand, as we named before, the GS-Monitor will be responsible for communicating with the GS-Receptors of the fitness machines using Bluetooth technology, and collect information from users who are using them. The GS-Monitor will upload all this information to the Internet to be processed.

To have a full service of our products, Gymshou makes available a Web service. Each user has a login and password. In this private zone, the user can consult all the information about their updated training plan. Just as personal information, fitness plan, nutritional plan, forum and health resources.

With the full range of products Gymshou our aim is to improve the habit of doing sports in the Beijing people, besides being a good technological solution for managing gyms. Attractive and dynamic design converts it in a fashion object, creating an image of healthy people for anyone who uses the wristband Gymshou.



1.1.3. Market / market segment

The Gymshou not has much competition because the business idea is very new. There is only two companies that perform a service quite similar. Is the case of Lifefitness and the Wellness System of Technogym. Where appropriate, the information is stored in an external storage device, in the first case is a USB stick and the second is something similar but with key form. The little lower marketing and promotion among the people, make the custom virtual trainer service are yet an idea for expand.

As an advantage, we can say that our product could be established in any gym without having to change the fitness machines, fast and comfortable, unlike the competition, which should put their own machines Technogym to offer the service.

One drawback, we have to Gymshou is a new company, it still does not know our brand, and it is difficult to face competition which is a multinational with more ways to publicize your product.

1.1.4. Potential customers

Our products are aimed at gyms in the city of Beijing. Through these, the staff and customers will be responsible for using our products Gymshou.

The profile of customers that we are searching is people who lead a healthy life, play sports and use technology to improve their daily life activities such as the fact of going to the gym.

1.1.5. Investment and profitability

The funds raised for the project cover a value of ¥ 1,722,500, distributed as follows: ¥ 642.4500 (provided by 5 members) + ¥ 900,000 (provided by the partner who brings the property) of contributed capital, ¥ 180,000 of a loan granted by Governmental institutions, thanks to being a technology company at an interest rate of 4% and a repayment period of 8 years. And a grant of ¥ 125.000 from the National Natural Science Foundation of China without having to return.

1.2. Strategy

1.2.1. Company strategy

Our strategy is initially based on the exploitation of the fitness market, modernizing it and applying RFID technology to control customers and their exercises to improve their sporting life. After a period of 8 years, it is likely that the market reaches saturation. For this reason, from the fourth year, we will begin landing in other Chinese cities such as Shanghai or Guangzhou. And if the forecasts indicate that we can, we will try to expand to major cities in the West.

Furthermore, we position ourselves long term as a company able to provide technological solutions to the world of fitness. During the third year we plan to develop the wristband Gymshou for it could do more functions like MP3, watch, heart rate monitor, etc. According as the fitness industry accept us and the power which with our products get into the market our product, we will expand our company manufacturing our own fitness machines, so the new gyms that need our technology could obtain fitness equipment with our products integrated.

1.2.2. Marketing (marketing policies)

We have developed a marketing plan whose aim is reach to twenty gyms upper-middle range in the first year. To this end, our marketing are primarily based on direct contact with the top leaders of fitness clubs.

Also concentrate forces in communication policy, which is based in fairs, magazines and website, with the goal that wins our brand reputation in the market.

1.2.3. Technology, plan of production or operation

Our project is based on engineering. For this reason we will have to have the services of telecommunications engineers and mechanics. Later, when we manufacture ourselves fitness machines, we expand the staff of mechanical engineers to design competitive machines on the market.

1.2.4. Certifications and approvals of company and product

In the manufacturing process of our product and after sales service, we will try to comply with the standards, provided to improve the manufacturing process. In addition, our products must be registered and take the necessary measures in case the Chinese black market copy us. Often the Intellectual Property Rights are a major concern of companies established in China. So if that violates our trademark, we must study the situation to make the choice to claim in a judicial or administrative.

1.2.5. Financing

The financing of Gymshou company is held from less enforceable to more enforceable by the equity provided, with the addition of aid funding. These grants are awarded to projects that promote R & D.

1.3. Competitive advantages

Our main advantage over the competition is that our product can be adapted to any fitness machine, quickly and without the owner of the gym has to do a large investment. However, competition must to install their own fitness machines to use the technology. We

also believe that RFID technology is being implemented in our lives and gives us facilities, like in our case, control all our exercises done in the gym and then process it and to see our sports development.

We also believe that the strength of our after-sales service is a competitive advantage, since in Chinese companies, this service is not carried out properly and they don't care for their customers. We offer a highly customized software services with an annual calibration of our devices.

1.4. Estimation of the ability to generate profit

1.4.1. Justification for the generation of benefits

As the choice of gyms grows and demand increases, it is revealing to compare the results of others years. If, in addition, we observe that China is the largest producer of hardware and is improving the ICT service significantly, we see that our product, which combines technology and fitness, could generate significant benefits.

For this reason we believe it is a good time to invest in the fitness market in China with RFID. We will try to leverage our technological advantages in Gymshou devices to improve the wristband with new features, and offering a wider range of products over time.

1.4.2. First estimate of benefits (scenario approach)

Our company is prepared to endure a first year with few gains, and in the second exercise it will increase. Facing the third year, we will be able to achieve significant benefits. For example, Payback is 2,44 years.

1.5. Major risks and problems

A major risk is that our product can be copied by Chinese companies. The violations of trademarks in China cover a wide spectrum: from the general copied of the product format, to the name of brand name, until the scientific forgery where the only perceptible difference between true and false items is the price. If they violated our trademark, we will have several options for action, administrative or judicial form (which consists of two categories: criminal and civil).

Another significant risk is that our company is newly established and we have to promote us to present our brand. In contrast, the competition already has a foothold in the market and starts

with advantage during the early years of our company. To cope with this situation we have to make a big initial investment in advertising.

1.6. Employer and / or founding team

To form our founding team, we will put in charge Westerners and Chinese. This way, we will maximize the potential of each culture in the different sections. We will be an enterprise joint venture (EJV).

The administration gives aid to companies with Chinese partners. Therefore, the registration and data of the manager must be of Chinese origin. The production will also be China, this way we will get a lot of labor at an attractive price for our company (which is new and should save as much as possible). In contrast, Western founders have taken positions in the sectors which the Chinese are not good, such as quality control. The manager even of Chinese origin, should have formed in the West to impose in our company an organizational and structure from the West. This Sino-Western mix is the key to our future success.

2. Environment analysis

2.1. Needs to satisfy

In Beijing the weather is enough extreme. In summer is very warm, in spring there are sand storms and in winter it's very cold. For this reason, it makes difficult practice sport outdoor. Thus, the best place to practice sport is the gym. Here is where we are going to focus our product and service.

The lack of a personal trainer or a good method of organization makes customers stop going. In addition, a planning of activities is not enough to get the personal objectives. It is very important have a personal diet associated to the activities and the personal evolution.

For all that, we are going to introduce a wristband that will act like a personal fitness instructor of each customer.

2.2. Products and services to satisfy needs

In Gymshou Company, we offer a series of products and services which all together provide their customer to have a personal fitness instructor.



Gymshou is our flagship product, for that reason it has the name of the company. Its customers use it to control all their fitness activities. GymShou System actualizes their planning, thanks to small receptors which are installed in each machine of the gym. It has a RFID tag which communicates to the GS-Monitor that user has finished the activity by pass the wristband over the receptor. Also, the wristband is designed with a modern and youth style. In this way, users can wear the wristband as if they are doing sports or not.



Gymshou System is composed of a GS-Calibrate, GS-Receptor and GS-Monitor. GS-Calibrate is a RFID writer which is used to introduce in the Gymshou the registration number of the users. GS-Monitor is an interactive kiosk with which users can access their exercise plan, and view messages from instructors. It is the brain of the system which has software installed to update the plannings of users thanks to the connection with the GS-Receptors. GS-Receptor is a RFID reader which is installed in each machine of the gym. It is connected to the GS-Monitor using Bluetooth technology to transmit the information in real time. With this

system, the gyms owners could have a control of the machines utility and manage their gyms with the most optimum method.



www.GYMSHOU.ch is a website where the customers can view their entire evolution, and which diet they should do to complete their objective. This web has the support of a nutritionist and an expert fitness instructor. Each GS-Monitor is connected to this website to update at all times all the planning of the customers. To get into their information, each user has to write their registration number and password. Also, there is a forum where the users can change experiences or advices.

In addition, once our product was developed and implemented in the market, we will add ons to the GYMshou as MP3, stopwatch or heart rate monitor.

2.3. Analysis of general environment

When the Chinese health and fitness industry took off on a grand scale in the early 2000s, the focus was on Beijing and Shanghai. Residents of these cities have higher incomes and are generally more health conscious than those in other parts of the country. Fitness markets in western China have shown robust growth in recent years as well, as the government encourages economic development in its "Go West" policy. With about 86 per cent of the total number of fitness centres, commercial gyms dominate the Chinese market. Hotel gyms comprise about 10 per cent of the market, while public gyms lag well behind in terms of expansion into the market. The Chinese government has prioritised implementing a public fitness policy to improve health and fitness among the general population.

As it has commented before, the weather in Beijing is very extreme. The last summer arrived to get 40 °C and in winter -25 °C. Also, the proximity of the Gobi Desert causes sand storms which have come to threaten seriously to Beijing. In 2006, there was eight sand storms which covered all the air of Beijing with a choking dust and in 2010 the air density arrived to 1500 mg/m³. Obviously, this density doesn't allow practicing sport outdoor. In addition, the desert is 150 km of Beijing but it's moving to the capital to 2 km/year, so this situation is going to get worst.

Besides of the climate, the pollution of the city is very dangerous for sports people. Beijing can be considered a dry city because practically only in summer it rains. For this reason, the Beijing's air keeps it dirty almost all the year.

Leaving aside the unfavourable weather situation for outdoor sports, we can observe the repercussion of the Olympics in Beijing. For this event, Beijing built 45 gyms of training and 31 olympics gyms.



The Imperial Palace covered by the sand storm in March 2010.

2.4. Analysis of market

2.4.1. Analysis of potential customers

Our products are aimed at Beijing's gyms with fitness room and will be used by its users. Our potential customers are gyms with more users with the following profile:

- People adapted to the use of new technologies that are familiar with using the Internet.
- Users who wish to maintain a healthy lifestyle through physical exercise combined with good eating habits.
- Aged between 18 and 35 years. In this age range, there is a predominant interest in health care and better adaptation of technologies. You will usually put more emphasis on body image and fashion. Although the inhabitants of Beijing are characterized by healthy lifestyle and sport has no age barriers.
- Purchasing power of medium / high. This is what we measure by reference to the monthly fee for each gym.
- Unmotivated users for not having a personal coach to guide them in their activities.

As for the characteristics of the gym, we will focus more on those whose facilities are modern and to be more willing to implement new technologies in their fitness rooms.

To study the profile of gyms users, we have made some surveys to the users of Beijing gyms. In addition, we have done a detailed valuation of their installation.

Analysis of gyms users

Relating the number of days that are in the gym with our service, we can see three different profiles:

Profile 1. Go to the gym more than three times per week. It pays tribute to a healthy life. Is a client interested in our product to auto-control use and keep their routine in the gym. They value more the utility of the product than the fashion.

Profile 2. Go to the gym from 2 to 3 times per week. This type of customer is the most common. Alternate your work life with sport life but is not a obsessed athlete. Our product will help him to have extra motivation.

Profile 3. Go to the gym once a week. This user type does not usually follow a routine. This profile is more interested in our product for fashion and image than sport utility.

To study gym users profile we have made some surveys to the users of Beijing gyms. The surveys have a format as follows:

Gym name associated:

Sex: *male* *female*

Age:

Number of times a week: *once* *2 or 3* *4 or more*

Would you like go more times?: *yes* *no*

Why don't you go more?:

- Lack of motivation*
- The gym is far*
- Prefer another activities*
- Don't have more time*
- Price*
- Don't need*
- Others:*

Analysis of gyms

To analyze our potential customers, we have made a list of gyms, where we spent a test to analyze the type of gyms are in Beijing.

Our list is made with the most famous gyms in Beijing. Sorted according to the note given by visitors to the website CityWeekendHome in the sports section. The note may be from 0 to 100.

	GYM	NOTE
1	Powerhouse Gym	93
2	Alexander Health Club	91
3	Westin Workout	83
4	Pacific Century Club	83
5	Richmond Park Leisure Fitness Center	82
6	Nirvana Fitness	81
7	East Lake Club	79
8	California Fitness-Beijing Yaoming Sport	78
9	Fitness First	78
10	Haosha	78
11	Fitness First	76
12	Bally Total Fitness (Bldg2, Jianwai SOHO, 39)	76
13	Sheraton Fitness	75
14	Chaoyang Gymnasium	75
15	CSI Bally Total Fitness (Bldg2, Jianwan SOHO)	73
16	Evolution Fitness Center	72
17	25 Hours Fitness Club	72
18	Intelli Fitness Club	71
19	China World Fitness Center	71
20	National Olympic Sports Center	69
21	Amrita Fitness	62
22	Doubletree by Hilton Beijing	58
23	Ozone Fitness	57
24	DNA Fitness Studio	53
25	Fitness Centre at The InterContinental Beijing Beichen	45
26	Fusion Fitness Center	42
27	CSI Bally Total Fitness (Guanghua Lu)	39
28	Club Hero	37
29	Evolution Fitness Center	32
30	Alexander Health Club	32
31	CSI Bally Total Fitness (Xiaoyun Lu)	32
32	Pulse Health Club	30
33	Shangri-La Beijing	29
34	Park Hyatt Indoor Pool	28
35	Ritz-Carlton Financial Street Fitness Center	27
36	Grand Millennium Pool	26
37	Capital Club Athletic Center	23

38	Joy Sunny HealthClub	21
39	YMCA Fitness Center	21
40	Club Hero	21
41	HA-Sports Fitness Center	19
42	East Gate Plaza Fitness Center	18
43	Fusion Fitness Center	18
44	The Spa	17
45	Kerry Sports Center	17
46	CSI Bally Total Fitness (Jianguomennei Dajie)	15
47	Enchante Club	15
48	Le Wellness (Wangjing)	12
49	Le Wellness (Wudaokou)	12
50	Sunplace Fitness Club	12
51	Euphoria Health Center	12

2.4.2. Competitive analysis

Into our competitors, we can find the personal fitness instructors, fitness and nutritionist software, and enterprises who fabricate fitness machines with a complex system installed that make you a monitoring. Obviously, these last are our direct competitive.

Direct Competitors



Technogym is a world leader in the design of fitness equipment. Founded in 1983, their equipment, designed and manufactured in Italy can be found in over 50,000 fitness facilities and 20,000 private homes around the world. In addition, in 2001 presented the software Wellness System to monitor customer activities. In 2008, Technogym was exclusive official supplier of the equipment for athletic conditioning at Beijing 2008 Olympic Games, and they opened an office in Beijing which has, in this moment, 6 employees working.



LifeFitness was founded in 1977 and was registered as a trademark of Brunswick Corporation. It is responsible for making home and commercial fitness equipment. In addition, they have software called Fitness Virtual Trainer to monitor customer activities.

These two enterprises have a similar system to make a monitoring to their users. Both have installed the software into their own machines and connected to internet. The users introduce into the machines their data by a USB pen in the case of LifeFitness, and a special key in the case of Technogym. In our case, we don't need a specials machine with software integrated. We can install our system in whatever machines and, in addition, offer a personal diet.



Fitness System is a company specialized in developing software for gyms, sports clubs, personal trainers, etc. They have software to advise both the nutrition manager and the fitness manager. Their software needs an intermediate to communicate the system with the user. In contrast, our system is more automated but their system with an intermediate like a fitness instructor can supply our services.

Indirect Competitors

There is website who offers software to monitor sports activities and make personal diet like: www.crosstrainer.ca, www.freetrainers.com. Some of them are free and other you have to pay a fee.



Another indirect competitor is the personal fitness instructor of the gyms who can do the same service than us but it required more workers.

2.4.3. Market structure

In 1995, the Chinese government launched its "Nationwide Physical Fitness Programme". Over a decade later, the Beijing Olympics galvanised people to take up physical activity in the face of a growing obesity problem caused by rising wealth, changes in diet, and increasingly sedentary lifestyles. White-collar workers now recognise the importance of exercise and fitness. These factors should spell success for a well-run commercial gym but, in reality, many gyms are in trouble. Short-term cash flow is prioritised over member retention. Some gym chains have been expanding rapidly in the hope that scale will translate into success. The number of gyms operated by the top five fitness chains in China increased by 35 per cent, year on year, in 2008.

Value added services suffer in the face of stiff competition. Too often, gyms focus on the one thing that will devalue their brand in the long term: price. They should instead differentiate their product, maintain high standards of service, and run sustained marketing/advertising campaigns. In a comparison of average annual membership fees in the largest Asia Pacific gym markets, China has the fourth-lowest average fees. This suggests that the Chinese fitness market is still extremely wallet-friendly.

A very real issue for gyms is that while it may be easy to grow membership by lowering prices, the number of active members may increase only incrementally or even remain static. It is the active members that provide feedback on how service can be improved and give

recommendations to non-members. Offering a product that provides members with what they want at a transparent price is the surest way to grow a gym's membership in the long term. However, it should also be borne in mind that retaining existing members, rather than soliciting new ones, should be the ultimate goal.

The Chinese Gym Industry Today

To survive long term, gyms operators need re-think their business model in order to attract and retain members.

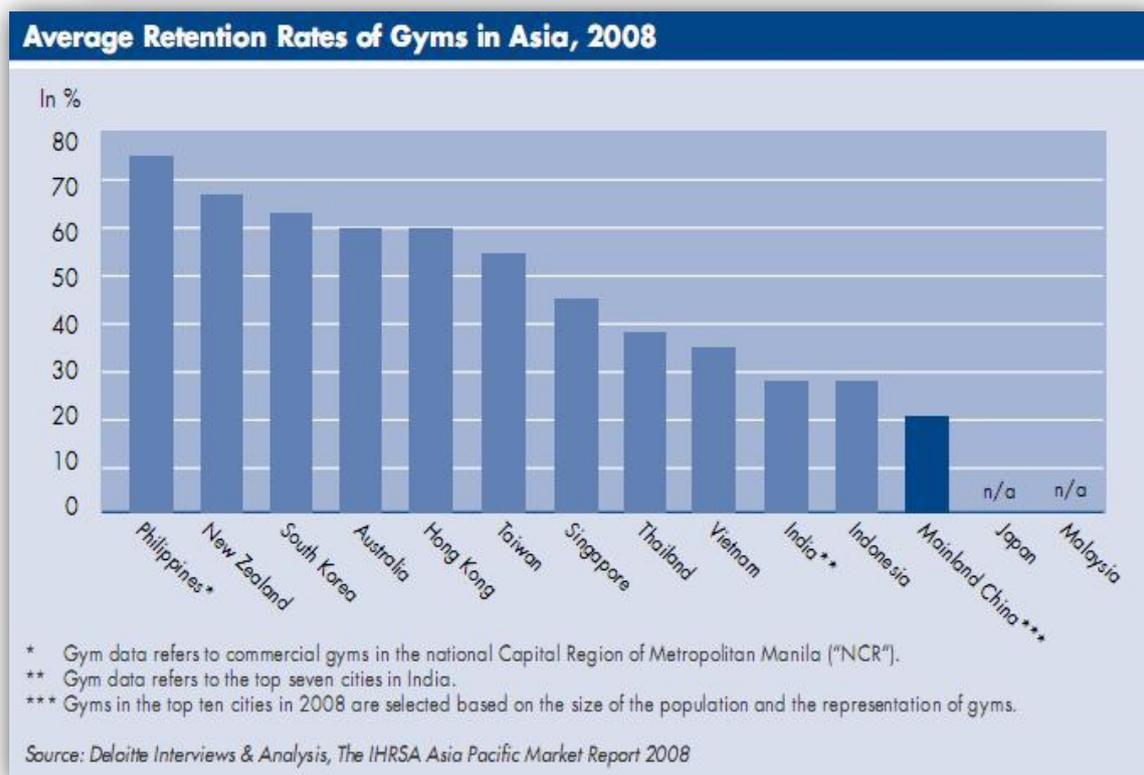
Fitness Clubs in China

- Number of fitness clubs in China: 1,500*
- Gym membership: 2.9 million members, representing a penetration rate of 4.5 %
- Types of gyms
Commercial: 1,292 Public: 70 Hotel: 138
- Top Five Players by number of centres

	National	Beijing	Shanghai
1	Hokay	Hokay	Tera Wellness
2	Tera Wellness	Bally	Star Gym
3	Impulse	OE	Will's
4	Bally	Ozone	Clark Hatch
5	Powerhouse	Zhangbei	Megafit

* For the purposes of this article, "gyms" are defined as fitness clubs that are larger than 1,000 sqm in size. The gyms surveyed are from cities in eastern, southern, western, northern and central China. Two cities in each region are chosen to form the top ten cities. Based on their economic status and industry experts' opinions, the cities are: Beijing, Changsha, Chongqing, Guangzhou, Hangzhou, Shanghai, Shenzhen, Tianjin, Wuhan, and Xi'an.

Source: Deloitte & Touche Financial Advisory Services Ltd., The IHRSA Asia Pacific Market Report 2008

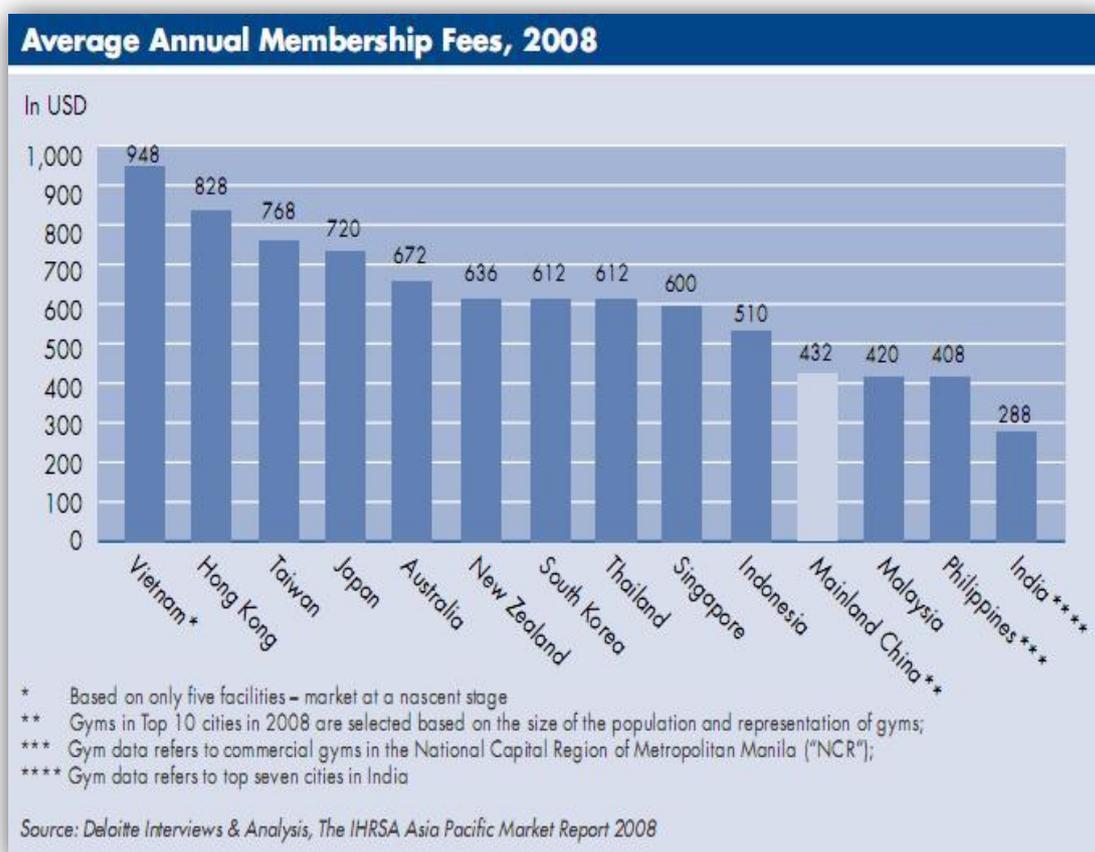


Research into the market shows recurring themes that are critical to the long-term success of fitness chains:

- Low retention is having a significant impact on profits.
- Existing business models need to change. Gyms need to adopt a monthly-payment model and discontinue sales of multi-year/lifetime memberships.
- Gyms must compete on more than just price.
- Gym operators must respond to customer demand, as members now have a wider choice of fitness centres.
- "Network Effects" between sites are critical as changing lifestyles mean travel time is a deciding factor.
- Marketing (in terms of demographics targeted, methods employed and areas focused on) must improve.
- Service needs to get better.

It's not the size of the gym that is decisive in a gym's success; it's the level of member retention, an indicator of the long-term health of a fitness market. Here, China scores very low compared to other countries in the Asia Pacific region.

Such a low retention rate is even more startling when one considers two factors: that the average annual gym membership fees are among the lowest in the region, and the number of gym members is increasing year on year.



The importance of quality gym

As the choice of gyms grows and demand increases, it is revealing to compare the results of the 2008 Deloitte staff survey with that of 2006. In 2008, the top three “primary” reasons for joining a particular gym were location, quality of fitness equipment, and price. Reflecting a growing trend around the region, group classes were a significant driver. At some gyms, places in these classes now have to be booked in advance. Successful gyms in China understand this, and are building more group exercise rooms to meet demand. Respondents are increasingly influenced by quality of fitness equipment and standard of service when choosing a gym to join. Although ranked as the less prominent of the “primary” reasons for joining a gym, user recommendations score consistently across the middle range of responses.

Primary Reason for Joining a Gym in China in%		
2006: 1797 Respondents; 2008: 1789 Respondents		
	2006	2008
Location	23	26
Quality of fitness equipment	14	16
Price	11	14
Specialised classes e.g. yoga, aerobics dance, etc.	13	12
Service, friendliness of staff	10	10
Multiple centres	10	7
Promotions	8	7
Onsite facilities (shops, bars, beauty salons, etc.)	5	4
Availability of personal trainers	4	3
Recommendations by others	3	2

Source: Survey of Deloitte’s staff conducted in October 2006 (5,980 employees) and September 2008 (7,977 employees) via an online questionnaire.

Substitutive product

A substitutive product can be the trainers devices which use vibration to do exercise. These products are expanding in the market and we can find important enterprises as Power Plate. They have designed a vibrator platform with which it is possible do a large series of exercises at home using only one machine. The increase of its demand would suppose a decline of gyms customers' numbers, so it would be a diminution our demand.

As this product, we can find similar products which also use the vibration to do exercise like patches or belts.



3. Marketing plan

3.1. Internal and external analysis: SWOT

Our marketing plan will contain the action to be followed by Gymshou both medium-term (objectives) and in the long term (strategy), in an orderly and practical. This plan is not intended as a document closed unchanged, but its purpose is to guide the company in making decisions in order to obtain better and more consistent.

Here is the internal analysis (strengths and weaknesses) and external (threats and opportunities) by the SWOT matrix technique.

WEAKNESSES

- Requires a high initial investment.
- Lack of experience in the Chinese market.
- Necessity of Chinese business associate to get into easier in the market.
- Must have a local partner who knows the local cultural tastes and profile
- Market fragmentation makes it impossible to cover

THREATS

- Rich market in piracy.
- Market with a non-transparent legal system.
- The distribution channels are immature and the logistic is inadequate.
- Hard competition from our greatest competitor.

STRENGTHS

- Differentiator design.
- We are a company formed by a highly qualified and motivated.
- Our product can be adapted to any gym.
- Our company has developed, according to his vision, a plan for future R & D and innovative solutions which will keep the product updated.
- Innovative product.

OPPORTUNITIES

- Tendency of government to support and improve the system of intellectual property protection.
- Market with cheap labor.
- Huge and dynamic market in a modernization process.
- Market with great and efficient organizational skills.
- Beijing weather incites to practice indoor sports.

Competitive analysis

Technogym and Lifefitness are our most important competitor because their product is very similar than ours. Their advantage is that they are important in the international market, especially Technogym. But our advantage is that we can be integrated in any gym without change the machines. This way, the gym can take full advantage of their machines.

The other issue is that, as a future project, we will incorporate attractive components to the Gymshou and also partner with a manufacturer of machines to incorporate our system directly into them. Thus, when the gym has to change machines, it can buy ours machines that have the integrated system and updated.

That adds an image value to the product, which the users can boast and feel a member of a sport family. The best part is that it is easier to add accessories like mp3, heart rate monitor and stopwatch to a wristband than a USB memory. In this way, they can take more utility from the same product, not to mention the simplicity of it.

3.2. Objectives

We will try to set medium-term objectives, in a period of 3 years.

The first thing to do is start the contacts to reach agreements with leading companies in the fitness industry. At the same time, there will be an initial advertising campaign which will have a very high impact on the number of customers we get.

The Director of Marketing and Public Relations will work in this area. Their functions are to promote and publicize the company's business in the fitness industry. Also, they have to transmit the message Gymshou to the most number of people in Beijing. It should be noted that commercial contracts should be ready within a period less than 6 months. The Advertising should be prolonged and ever-present, with a big impact on the marketing of our company.

Being a small company with a reduced capital, we must have a stable economy and sound at all times, therefore, the Director of Finance and Administration will analyze the costs of the company and set a spending limit for the other employees of the company. This limit should be reviewed annually in order to adapt to the company's financial situation, ensuring that there are going to the bankruptcy or insolvency and which have a return that will allow us to recover the investment.

Our goal is to get the number of people who use the Gymshou, increases 30000 each year. Most of them are customers themselves of the gyms where we settled. The other part will consist of people who after to be informed about the Gymshou, they go to the gym because there it is used. At the end of each year this goal should be compared with the number of real customers, and if there is a difference of over 20%, you should rethink both the activities of the company and the objectives outlined in this marketing plan.

Quarterly, the Director General shall convene a meeting between all members of the company to discuss the results of operations and assess compliance with the objectives. Thus, it must decide whether future goals are the same as current or have to be modified.

3.3. Strategic marketing

Our strategy is going to define our guidelines to position us in the world of fitness. As we are a new company, we can't be ostentatious. The customer is our reason for being, and that is why we base our strategy (long term) around it.

The above analysis helps us understand that there is a social necessity to do sport with a planning. For that reason, we base our orientation to sport people who usually goes to gym. We firmly believe our services will satisfy their needs.

The pillars of our strategy, focus on consumer segmentation, product differentiation and positioning in the mind of the athlete population. These three pillars are tightly linked around an idea: the people can have a good service in the gym knowing they will reach your sport goals in the most comfortable and healthy way.

Segmentation

Let's focus on the sports sector of the population without distinction of sex or age. In the early years, we focus on the people who visit the big gyms in the city of Beijing, basically because as we are not a company with initial capital too high, we can not trade contracts with gyms across the country. Then we will expand and introducing the product in other major cities like Shanghai or Hong Kong.

From Gymshou, we firmly believe that our message is directed to all classes of the population, but we understand that the upper middle class may be the most benefited because we have services that will add value to the gym, and can be converted into an exclusive product.

Differentiation

What differentiates us from our major competitors is that the product which the users are going to use is a wristband. Something much more attractive than a USB memory and it can be shined out of gym. Moreover, once added the complements which we plan for the future as the MP3, will become a much more complete product that will increase its relevance and differentiation.

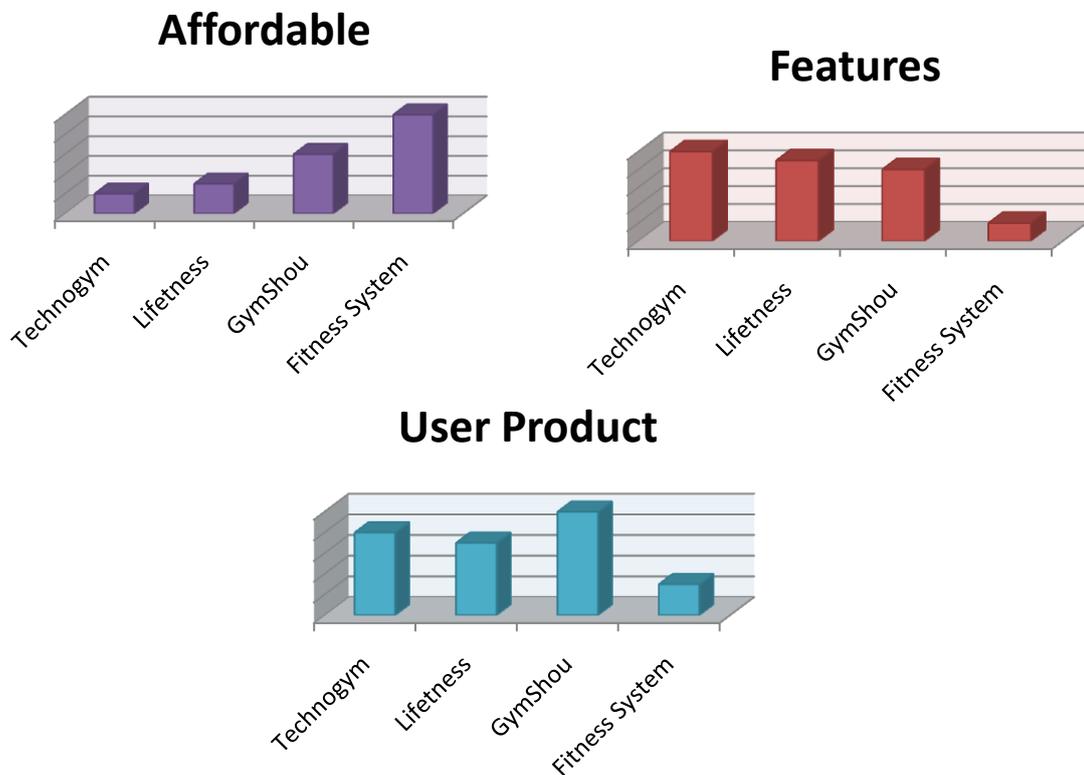
Furthermore, any user information is in our database and into the GS-Monitor of the gym while he is inside. Therefore, the loss of the wristband would mean no loss of data.

Another big difference is the system of all this service. Unlike our competitors, our receivers are not integrated into the machines, so, buy our product becomes more accessible.

We intend to become strong by offering a design wristband. This wristband must be attractive for the potential customers who ask for it. It has to introduce in the teen fashion, and be desired by many people because they see in Gymshou the synonymous of sports and good nutrition. We could say that from the point of view of fashion, is a smart wristband, with new applications.

Positioning

To study the positioning of Gymshou Company within fitness market, we have selected some variables in relation with the other competitors. We have elaborated some graphics which compare us with the competence.



In the first one, we compare the affordability of our product/service with the others. As our system doesn't have included the machines, so install our system is cheaper than Technogym System or Lifefitness. In addition, the installation is more simple and requires less invest for the owner of the gym. Anyway, the cheapest is the Fitness System because their product/service is based only in a software.

In the second one, we compare the system features. Technogym and Lifefitness having their system integrated in the machines, can add more complements to the machine like a Monitor TV where customer could see their planning in all moment. However, our system is simpler because the machines would only have a RFID reader. We consider, that's enough to complete

perfectly the routine, but we think about associate with a fitness machine manufacturer to improve our features in a future.

In the third one, we compare the product which is going to use the users. Fitness System doesn't have any product. Their users have to write their plans in a paper if they want to have something physic where they can bring their planning. Technogym and Lifefitness use a kind of memory USB which we consider less attractive than our wristband. In addition, as we said before, it gives us more option to add complements which convert the wristband in a product much more useful.

3.4. Product policy

3.4.1. The need to satisfy the product

The need that our products satisfy is to put an interactive personal trainer in each of our clients, gathering information from your exercise in the gym for later processing and providing assessment and advice of sports work. At company level, we want to satisfy gym owners offering a new delivery system. Using RFID technology, it can take control of the machines used, the routines that make each client, the hours they are used, etc. Thus, process information for the benefit of the gym, and advice which fitness machines should be changed to be the most used, or put more on the overbooking. Even giving information to the technical fitness of the gym for advice personally to clients in need.

3.4.2. Advantage over the competition

The main advantage is that our product/service is unique in the market. There are similar products or substitutes as the Technogym Wellness System (see 2.4.2. *Competitive analysis*), but this company requires that the gym changes all its for Technogym machines to enjoy the services.

Moreover, good choice of our raw materials to create products Gymshou and develop the hardware in China, give it more affordable prices compared to competition.

3.4.3. Characteristics and relevant attributes

The common denominator of our products is based on RFID technology. This technology has very good results in the companies that are currently using it. It is a clean and optimal way to gather information and then process it and be able to offer a complete service.

In addition, all our products have a design and style that are in keeping with fashion trends, it helps their marketing between and among users claim Gymshou.

3.4.4. Product portfolio

Our product portfolio consists of the wristband Gymshou, the GS-Calibrate, GS-Receiver, GS-Monitor.

Of these can differentiate those which will be for the gym and that will be for the customer. The Gymshou wristband will be for people. So the gym decides how to give it to their customers (as a courtesy or making them pay a certain amount). In contrast, the GS-Calibrate, GS-Monitor and GS-Receiver will be installed in the gym.

Apart from these products, we have after-sales service, which is responsible for, first, update and software upgrades and on the other hand, maintenance of equipment.

3.4.5. After-sales service, warranty, delivery and maintenance

In Gymshou, we offer a comprehensive after-sales service: consists of annual calibration of the gym equipment to comply with its services, together with regular updating of the software with any changes that may have arisen in the GS-Monitor and improvements in using the software. We also offer a 5 year warranty for manufacturing defects.

The delivery of our product is stipulated in 1 month from the time of the order of gymnasium. At this time Gymshou products must be assembled by the assembly, tested and approved.

3.5. Price policy

For product pricing, we took into account various internal and external factors.

Internal factors affecting pricing:

- The cost of raw materials, especially the GS-Monitor which consists of an interactive kiosk have influenced in the price. We should also bear in mind that the software is of type outsourcing. Facing the second year, we plan to rid the software from other companies (because of cost) and for this period, our team of engineers will have developed a software with all the features Gymshou ours.
- The calculation of the dead point tells us at what price we earn benefits after fixed costs absorbed. You can see the calculation in paragraph 5.5. *Determining the cost of the product / service (Manufacturing / Buy / Outsourcing).*

External factors that have influenced our pricing policy are:

- The positioning of the competitors is important to determining the price of the product/service. So we have to get a price more attractive than the competition. But this is easy since the gym to hire our service does not have to switch machines it has, therefore, the amount of money to invest is much lower.
- The correct sizing of the market and its elasticity, provides information on the number and variation of expected sales.

The final price of our products is:

PRODUCT	PRICE
Gymshou	40¥
GS-Calibrate	570¥
GS-Receptor	810¥
GS- Monitor	5782¥

3.6. Distribution policy

Distribution policy has a heavy weight in our company, compared to other companies who need a large logistics apparatus.

The type of channel that we use to make arrive our product to customers is directly: we will have appointments and meetings with members of gyms. We will be in charge to carry and install the products purchased by different clubs. Once they have tried our product, they could order more wristbands and equipments using our website.

The remaining channels used are defined in 3.7., where mainly try to make ourselves known through trade fairs, magazines and website.

As for the sales organization Gymshou products will be directed from the head of marketing and human resources, along with the sales manager. In addition, our general manager also will help in the sales sector during the rest of their time: we believe that its presence can be crucial to close some sales.

The frequency of contact with our customers is very high. We should note that once we sell the first products and do the installation, the client will pay an annual maintenance that will ensure after-sales service. Therefore, every two months we will contact with our clients ensuring that they have no functional problems, or usage.

It is also important to note that the customer can buy our products again, and due to our bounded group of buyers will be very important the full satisfaction of our customers.

3.7. Communication policy

Our goal is to introduce our products and our company as both are new. In addition, we want to position in the market following the distinctive attributes defined above. We must not lose sight, as we have established in the marketing plan objectives, one of the objectives is to arrive to 20 major gyms in the first year.

The main vehicle of communication is direct contact with the clubs through the public relations department. They will be responsible to make known our service and demonstrate its benefits to the various gyms in Beijing. Obviously we are announced in our website. This expenditure won't be added, since we ourselves are the owners of the web.

One of the most effective media for our market are fitness fairs. There are concentrated from large distribution companies to prominent figures in the sector. We will ensure the company's presence in the sector's largest exhibition, *The Fitness China Guangzhou International Fair*, held annually. For more information see *Annex I*.

It seems appropriate advertise in trade magazines fitness. The journal chosen for this purpose is the *Muscle & Fitness Magazine*, and the necessary budget for 8000¥/month.

Another way where we'll announce our product/service is with posters in gyms that use our services. This advertisement will be reciprocal, since through our posters, fitness center warns its clients that it has Gymshou technology, attracting more people into the club, and in return, we expand our brand awareness among the people. So we will come to agreements with gyms to have not expenses.

The design of the ad which will appear on billboards and magazine are located in *Annex II*.



Name	Kind	Month/period	Cost
China Guangzhou International Fitness	Fair	March 3rd-5th 2011	15000¥/stand
Muscle & Fitness Magazine	Magazine	During the first year	8000¥/month

Every time we advertise gyms in our website, we will agree a price and get a benefit. This benefit will be entirely invested to publicize ourselves in other media such as fairs and magazines. Thus, the advertising of our products shall be in proportion with the number of gyms which we deal.

4. Definition of the product, service and market

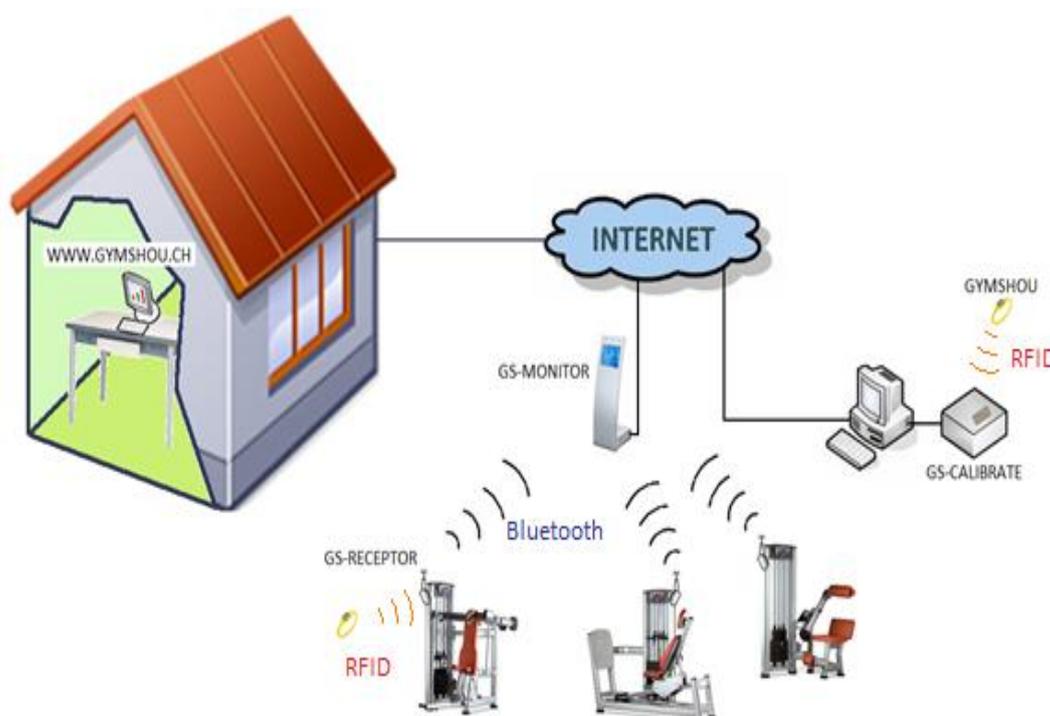
4.1. Specifications

To have a correct use of the Gymshou, the gyms will install all our products so they have a service completed and satisfactory. Thanks to our development department, we can offer a range of products that are alive, that is, in continuous development and improvement, of both the software as the components. In this way, we guarantee that our customers can be always updated with the optimal technology.

Technology selected for communication between our device is the RFID. Radio Frequency Identification (RFID) is a technology to capture and automatic identification of information in electronic labels (tags). When these labels fall within the coverage area of RFID reader, it sends a signal to the tag to transmit the information stored in its memory, typically an identification code. One key of this technology is that the recovery of the information contained on the label is carried out via radio and without need for physical or visual contact (line of sight) between the device reader and tags, although in many cases requires a certain proximity of these elements.. For a more detailed explanation of the mechanism and the uses of RFID may see *Annex XIV Study of RFID technology*.

Products

Our initial portfolio consists of the following products: the Gymshou, the receptors, the Gymshou calibrator, the web service and the monitor of the gym where users could watch all their monitoring. We have also a after-sales service to maintain and update the installed system.



4.1.1. Gymshou

GYMSHOU	
	It is a wristband that contains RFID chip. In this RFID tag it records the registration number of the user using the GS-Calibrate.
TECHNICAL SPECIFICATIONS	Identification of users and their gym. RFID communication Waterproof and impact resistant Very easy to use, only pass over receptors.
DESIGN FEATURES	Youthful and sporty design, different colours. Make a trend in the fashion world. Social differentiation mark Material rubber, elastic, comfortable and portable.

This is the product which its users are going to shine. Thanks to its design, users could wear it outside of gyms and show to the society that belong a family of sports people. The process to use it is following:

Users have to register in the gym as always. The personal of gym will save all data about the customer in the base data of Gymshou Company. In the registration, the users will have to indicate their personals data (name, age, weight, height...) and complete a few questions about their goals. After that, the system will do a personal plan with the activities that the user has to do, and a personal diet to complete perfectly the goals.

In addition, using the GS-Calibrate, it engraves the register number of the customer in a Gymshou which will be delivered to each user for personal use. After acquiring Gymshou, the customer can enjoy the complete service. They have only to wear the Gymshou everytime they go to the gym. To indicate the system that the activities have been realized, the user have to pass the Gymshou over the GS-Receptor and the system will update it. If the user pass the Gymshou over the GS-Monitor could watch activities which not done yet.

By having a clearly defined routine and receiving constant feedback on your progress, the users feel more motivated to move forward to achieve its objectives.

The wristbands are made to last, are resistant to heat and made with materials that characterize them as: smoothness, long life to use, friendly-looking, fashionable, waterproof, anti-collision and other benefits. It is designed in perfect harmony with the characteristics of human skin, with a strap that is easy to adjust and easy to remove. Accordingly, it has excellent properties against water, the RFID wristbands are useful for use in high humidity conditions.

Gymshou technology

Gymshou wristband uses RFID technology. Inside contains a RFID tag or chip low frequency (LF 125 to 134 kHz). We chose this frequency band because it reaches a short distance (10 cm),

and that is how we want it to work. Thus, this way, it reduce the potential for interference with other wristbands.

We can also say it is a passive Tag. This offers advantages for the type of product. Since it works without battery, is cheaper, with unlimited life cycle and low weight. We also know that the passive type ones have a low transmission rate, but since only it will send the identify the person who will use the machine, we do not care.



4.1.2. GS-Monitor

GS-MONITOR	
	It's an interactive kiosk with which users can access their training plan information and view messages from instructors.
TECHNICAL SPECIFICATIONS	LCD screen and four buttons to communicate the user with the system. RFID reader to tend the users and show their routine. Bluetooth reader to be communicated with GS-Receptors. Connected to the Internet to send user data to the web server.
SOFTWARE FEATURES	Fitness activities planning. Video clips of correct exercise techniques available for all equipment, classes and activities. Download results at the end of workout section: calories burned, distance covered, weight lifted and other information. Graphics / images to view performance and compare with pre-set goals.

The GS-Monitor is responsible for display to users the machines and routine to be performed. For that, it is connected to the Internet to download the necessary information from users via Gymshou server. It is also the machine that collects the information received via Bluetooth from different GS-Receptors.

It has a RFID reader to detect the Gymshou of each user. Once they pass their Gymshou over the reader, first, it displayed the following activities that the user has to do with a video guide showing how to properly perform them.

In addition, the user can access other information using the buttons located next to the screen. Using these, you can access information such as: results at the end of workout section (calories burned, distance covered, weight lifter, etc.), evolution graphics and profile data. There is also an EXIT button to close login.



Moreover, when the antenna of the Bluetooth reader detects a wireless signal from the GS-Receptors, the CPU of the GS-Monitor processes the signal, identifies which GS-Receptor has sent the signal and which customer number has the signal. With this information, the GS-Monitor updates their plans sending to the database that the user has completed this activity.

GS-Monitor Technology

The GS-Monitor is divided into different modules and makes different functions. We can distinguish the following technologies according to the modules:

- RFID. Contains an RFID reader, thus, each time a user, brings the wristband near the GS-Monitor reader, there is a communication between the tag of the wristband and the RFID reader. Thus, the GS-Monitor gets the identification of the user who wants to see her routine and sends this information to the module that connects to the Internet to download it instantly.
- BLUETOOTH. The communication between the GS-Monitor and the different GS-recipients of each machine is via Bluetooth. Contains a Bluetooth receiver that receives signals from the machines being used and the identification of who uses it. This information will be processed and posted to the Internet by another module.
- Internet connection. Allows to the GS-Monitor upload the information of the machines which are being used to update customer profiles and download the profiles in case a client requests a request to see their routines by the monitor.

4.1.3. GS-Receptor

GS-Receptor. This device is a RFID reader which is installed in each machine of the gym. It is connected to the GS-Monitor via Bluetooth to transmit the information in real time.

Before installation, programming is required. Each GS-Receptor is provided with a manual with a list of kinds of fitness machine or activities pectoral, abdominal, swimming pool, treadmill, etc.. This way, by the aid of three buttons is possible to program each GS-Receptor to indicate that this GS-Receptor is installed in a determined machine. One button is the RESET, and the others indicate the unit and the ten of the number to which it belongs.

For example, if the user is going to use the bench press machine and it belongs to the number 25, the installer must to press RESET and then, press two times the ten button and five times the unit button.

Once you have set the GS-Receptor, when users pass the Gymshou above the RFID reader, the GS-Receptor sends to the GS-Monitor your identification and registration number of the user that has completed activity.



Nº	TYPE	Nº	TYPE
1	Tape run		Load Records
2	Swimming	60	Vertical chest press convergent
	Upper Plate	61	Incline press convergent
10	Vertical chest press and triceps	62	Shoulder press convergent
11	Vertical press convergent	63	Convergent dorsal
12	Press inclined	64	Seated row with chest support convergent
13	Pectoral Contractor	65	T-bar rowing
14	Posterior deltoid	66	Twins sitting
15	Shoulder Press	67	45 ° leg press
16	Shoulder press convergent	68	Squat Cage
17	Lateral Raise		Multi Gyms
18	Biceps	70	Multipress – Multipower
19	Seated triceps	71	Counterweights Multipress
20	Horizontal Triceps	72	Crossing pulleys
21	Dorsal	73	Torre 4 seasons
22	Convergent dorsal	74	Tower 5 Stations
23	Seated Row Chest Support	75	Simple ergoline
24	Remo low pulley	76	Double ergoline
25	Seated Row chest support convergent	77	Multistation
26	Dominated and assistance fund	78	Max Rack
27	Pullover		Benches and Accessories
28	High pulley	80	Flat bench
	Media Zone Plates	81	Multi Bank
30	Sitting abdominal	82	Horizontal Olympic Bank
31	Total Abdominal	83	Incline bench press
32	Twister	84	Bench press declined
33	Lumbar	85	Olympic Bank Shoulder
	Lower Body Plates	86	Scott Bank
40	Quadriceps Extension	87	40 ° inclined bench
41	Femoral lying	88	Abdominal flexor bench
42	Femoral sitting	89	Abdominal crunch bench
43	Horizontal seated leg press	90	Abdominal flexor dominated
44	Hack press plates	91	Balanced Abdominal
45	Twins	92	Roman chair
46	Standing calf	93	Squat cage
47	Adductor	94	Support Disc
48	Abductors	95	Support bar
49	Multi Hip	96	Bank support
50	Buttocks (especially knees)	97	Dumbbells cabinet

With this system, the gym can control the use of their machines and thus know the most used and in what moment are more used. Thanks to that, the company could study the machines amortization.

GS-Receptor technology

In the GS-recipients, is possible to see two types of technologies depending on the process it performs:

- Contains an RFID receiver in charge of collecting customer information that you will use the machine. By bringing near the wristband of the customer, it sends a RFID signal, so the Gymshou wristband will reply saying which customer is, and it will save the information to send to the GS-Monitor for processing.
- Once you have the information, it communicates via Bluetooth with the GS-Monitor. So should contain a Bluetooth transmitter, responsible for sending user information and the machine is operating on GS-Receiver.

To work completely without cables will be equipped with batteries that will be fed, they will be rechargeable and the technicians responsible to change for a spare charged battery if it's necessary.

4.1.4. GS-Calibrate

GS-Calibrate. It is a RFID writer which is used to introduce in the Gymshou's tag the registration number of the users. It's connected to computer equipment of the gym reception by USB connection and it's only used by the personal of gym who do the registration of customers.

Its use is very easy. When the GS-Calibrate is connected to the gym system, this detected it automatically. At the final of the register, the software will give the option RECORD. Before click it, one need only place the Gymshou over the GS-Calibrate, click it and the Gymshou will have the registration number of the user in less than second.

Similarly, whenever any wristband gets deprogrammed should be placed in GS-Calibrate and be reprogrammed.

GS-Calibrate technology

The technology we observe is an RFID communication between the GS-Calibrate and Gymshou. What it does is record the information in the Tag of the Gymshou. What it does is record the information in the Tag of the Gymshou. In this way, may be used later in the GS-Receptors and GS-Monitor with RFID communications.



4.1.5. www.gymshou.cn

www.gymshou.cn is the website where users can find all their information about their activities plan, personal diet, profile information, communicates with other users using the forum, etc. Finally, modify, read and exchange all the necessary information for users to have a full and healthy monitoring.

In our website you can find different access in English or Chinese:

- **Personal:** This type of user can access promotional information of the Gymshou, location of the gyms where you can enjoy this service and enter in their user zone in the case of be registered. Every registered user at any of our gyms can access with the registration number and the password.

In this private zone, the user can consult all the information about their updated training plan. Just as personal information, fitness plan, nutritional plan, forum and health resources.

In fitness plan section, users can consult their full exercise program designed for their specified goals. They can also see progressive charts and graphs of their daily inputs from their fitness logs. Moreover, they are allowed to easily change or adjust or re-start their personal fitness plan.

In the nutritional plan, users must to complete a simple form to permit our system designs a personal nutrition program. Once completed, users can access to consult their very own personalized nutritional plan based on the goals the users specified. Again, they have the option of change or adjust or re-start their personal nutrition program. In addition, they can search for any food item in our Gymshou database to view the micro/macro full details.

There is a forum available. In this area, we encourage you to ask anything & everything which you have questions about; related to health & fitness. We strongly encourage our knowledgeable and experienced members to answer all the questions they feel comfortable.

In health resources, the users can find two kinds of resources: exercise/fitness and diet/nutrition. In the first one, there is information on general exercise, specific goals, specific muscle exercises and descriptions, guide to injuries, fitness calculators, articles. In the second one, information on general nutrition, guide to supplements, complete diet related terms glossary, guide to specific diet goals such as weight loss & muscle gain.

- **Business:** This access is destined to gyms that want information about our product/services or which are our customers. If there are not our clients, they are going to find a full detailed information about operating system and the benefits that they would win with the installation.

Moreover, gyms trainer will access to users data of their gym through of gym account. Here trainers could see the evolution of each user and send them messages to correct some activities or answer questions. Once Gymshou system have entered a personalised exercise routine into each a user's personal profile, gyms trainers are then free to focus on other tasks and can review every user's progress through a centralised programme at the end of the day or week.

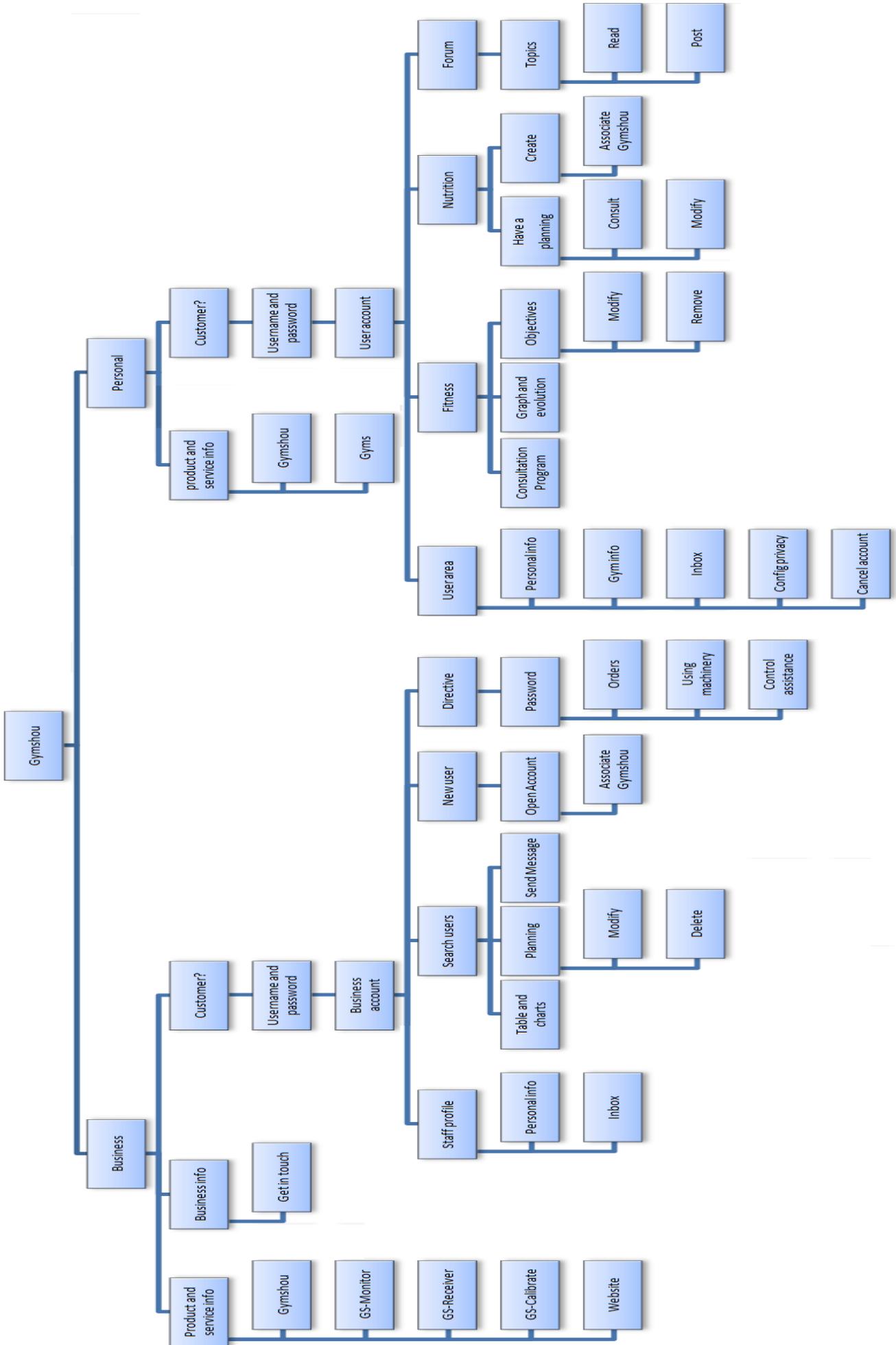
The gym staff will also use this access to do the register of new customers. In addition, the Gymshou system will also help owners gyms to optimize investment by identifying those users who are at risk of dropping out, thanks to the "attendance sheet" which with is possible see which customers attend less to gym.

Also, the owner can identify areas of their facility which merit further expansion or promotion, and will be shown which machines are more utilized to do a study of their yield. The Gymshou system not only enables them to maximise their current investment, but also provides invaluable data on which to base future improvements.

As most of websites, regardless of access, at the end of the page it is possible to find links to get information about Gymshou Company, how contact us, about our legal issues, how is possible work with us or suggestions.

The gyms will incorporate our products to the proper use of Gymshou. Thanks to our development department can offer a range of products that are alive, that is, continuous development and improvement, they improve the software and components. In this way, we guarantee that our customers can be always updated with the optimal technology.

The software contained in our website is developed by the software engineer is supported by nutritionists and fitness consultants. When a customer of the gym buys a Gymshou wristband, is created a account and is completed a questionnaire with objectives pursued, and another with their physical data. The software is responsible for collecting this data and tailor a personalized diet and routine according to the permutation of the questionnaires. Thus, the software knows all the possible permutations and associates the best diet and routine for each one.



4.2. Limitations of design

The viability of our products is limited by certain technological factors, economic and legislative.

As technology is concerned, we should be able to build a system that uses the technology easy to update it. For that, we have to use as standard technology that be possible to prevent future additions of complements in the system. Being that, we plan add to the Gymshou a pulsometer, a mp3, a watch, incorporate the RFID receiver into the machines in a future contract with a fitness machines manufacturer, etc. For that, the products have to be designed in such a way that will be easy to update.

This way we can differentiate ourselves from our competitors and also provide customer needs.

Another limitation it's that our customer must to have internet. All user information is saved in our database and it is necessary connect to our server to use the program.

With regard to economic constraints, we have to make a large initial investment in the Marketing department for make ourselves known around Beijing. Of course, our products have to be competitive, so we need to adjust the price to market needs.

Finally, the material of the Gymshou will have to respect the World Health Organization and don't be nocive for the skin.

4.3. Quantification and spatio-temporal market

4.3.1. Location of the market. Regulations, transportation

The products we develop have as main customers the gyms of Beijing. Initially we will focus on the China capital city market and in the future begin to enter the Shanghai market including Hong Kong, taking into account the characteristics and laws of this country.

When distribute the product, our technicians will install the system in person to the gyms and the extra demand of wristbands will be resolved by post mail. In case of a different order to wristbands as receivers, monitors, monitoring of products or update them, our technical personal of after-sales service delivery will deal personally of the installation, repair or upgrade.

At the moment we decide to settle in Shanghai, we will look for a distributor in the city and depending on the demand, we will raise the option to mount another venue. And in the case of Hong Kong would look for a distributor in that country to sell the product, handle the marketing and maintenance. We'll give you all the specifications tailored to the country's

regulations. To study this regulation, the department responsible for marketing and human resources as well as everything needed to make the assembly.

As we offer a web service to store user data, we made a study of existing legislation in the People's Republic of China about the Data Protection and Privacy Issues in China.

The personal dignity of citizens of the People's Republic of China is recognized and protected under Article 38 of the Constitution. Further, the freedom and privacy of correspondence of citizens of the People's Republic of China are protected; however Article 40 provides some significant limitations to such rights – where state secrets or a criminal investigation is involved, police and other authorities can intercept communications as necessary. The expansive concept of “state secret” gives the government supreme power in reviewing and monitoring of communications as necessary.

The General Civil Law Rule of China recognizes the right to identity and the right to protection of reputation. The People’s Supreme Court has not treated privacy as a separate right until now either - it treats a claim to privacy violation akin to that of violation of one’s reputation under its relevant judicial interpretations. This means that under current law, an action for privacy violation can be considered by a court only if the plaintiff’s reputation has also been violated or affected. The limitations imposed by such a view are obvious.

Although China lacks major privacy and data protection laws as discussed above, some regulations are in place in relation to network information. The Regulation on Management of the Administration of Internet Electronic Messaging Services issued by Ministry of Information Industry on 8 October 2000 is worth looking at. Article 12 states that Electronic Messaging Service providers shall maintain the confidentiality of personal information concerning online subscribers and may not disclose the same to third parties without the subscribers' consent.

4.3.2. Schedule of expected sales. Production quantities

Our aim to 3 years will be achieve in the first year the lowest possible losses. During the second year we will get closer to neutral and try to get some benefit. Finally, during our third year we plan to earn profits.

From the time we get benefits, we will begin to introduce our products in other major cities in China, to expand our number of clients.

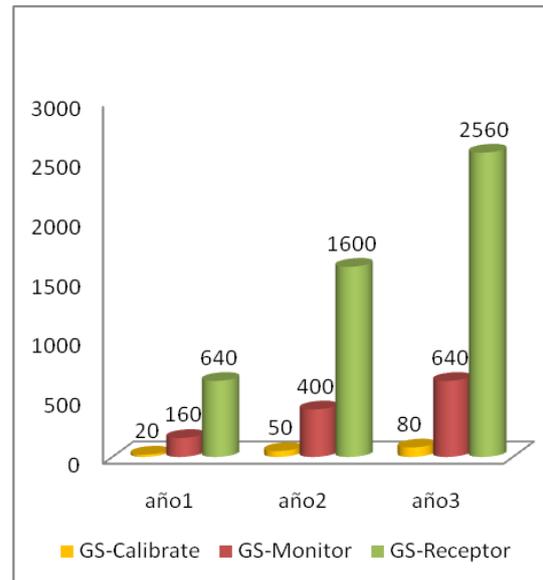
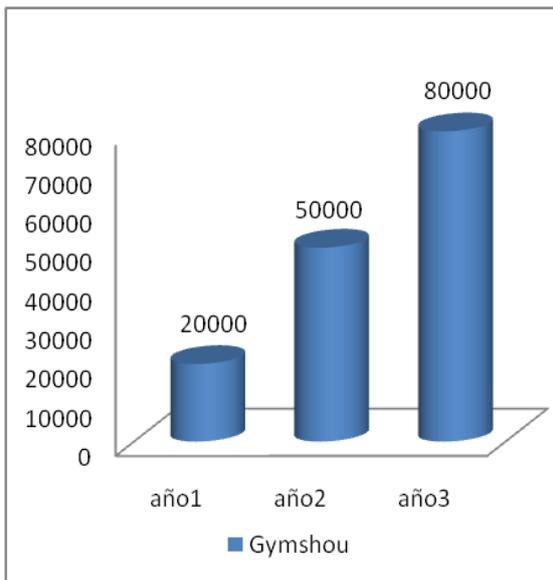
Therefore, in the early years, we intend to settle us in the major gyms of Beijing. In particular, we want that 20 gyms listed in paragraph 2.4.1 are our customers. If it's possible, they would have to be mid-range, so that these four clubs should be among the first 40 of the table.

Once done, you want to install the technology Gymshou in the largest number of gyms in Beijing, even open our market to other major cities in China such as Shanghai and Guangzhou. As our products are sold, our aftersales service will grow, since the products will need to spend

maintaining and updating to keep running. This chart is not taken into account custom updates you ask our customers, because it is something we can not estimate a priori.

In terms of logistics, our policy is zero stocks, it means, that we won't produce nothing that they haven't ordered. And if we have stock, we will try to have as little time in the store. However, as mentioned above, we will have prototypes for testing and improvements in our products.

Given this, we have a calendar with the projected sales of the first three years:



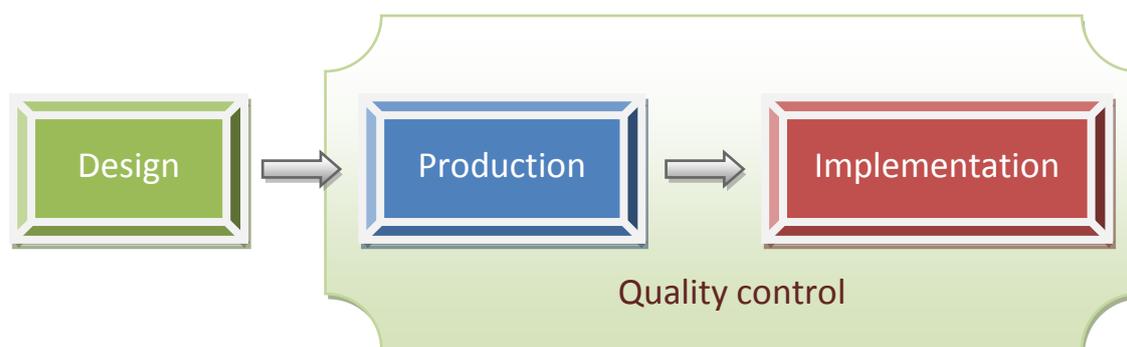
5. Production plan or operations and quality

5.1. Process of production or operations of the product / service

Our production system is governed by a process approach because the network which will be deployed is adapted to the needs and conditions in each gym.

For this, the process is divided into 4 stages:

- Design: is the most important stage. It makes a thorough study of the physical location of network components which will be installed later.
- Production: This stage will assemble the different components which have been determined in the design.
- Implementation: is the installation of the network.
- Quality testing of both components to be installed on the network and the smooth functioning of it.



5.1.1. Manufacturing process and product design

The design is based on:

- Determination of the number of GS-Monitor: To determine the number of devices to be installed in every gym should take into account the number of clients and size of the fitness room. Approximately every 200 square feet of fitness will install a GS-Monitor. These will be located at strategic points for comfort and proper use of fitness center clients.
- Determining the number of GS-receiver and the location of each detector: it will determine the position and number of RFID receivers from the number of fitness machines, so that will be placed one on each machine.
- Determination of the provision of proper connections and communication: the necessary cables to interconnect the database (GS-Monitor) to the Internet network. Thus we see the layout of the sockets and internet access. Also be taken into account from the study of the plane of the gym, the distances between receivers and transmitters for proper communication systems.

– Design of the GS-Receiver, GS-Monitor: concrete specification of the compo based in operating conditions, which will be followed in the installation of each gym. These were selected from an inventory of components with which the company works. The quality of the components that make up this inventory is determined by their relevance in the range of products, according to the operational requirements that it should have. For this we have developed a QFD in *Annex III* where it determines the importance of these components.

- GS-Calibrate and Gymshou provisioning: These two products, after made the study of the gym and seen how many will be sent, we will order it to the distributor company because this product we don't make it at our factory.

To conduct the study in every gym, two people from the company will move there and collect all data necessary for a correct design.

5.1.2. Product design

The production planning is based on a process approach. The components that are installed in gyms will be produced by adapting to the technical needs of the project.

Specifically, the factory will produce the GS-recipients and GS-Monitor, since they are different machines that alternate technologies such as RFID and Bluetooth. Thus, on the one hand, we can make it more personalized to our needs and, secondly, we get more economic benefits making ourselves the mounting with simple hardware blocks. The production is based on the assembly of the subcomponents selected from an inventory in the design stage. Thus, our company does not offer an infinite range of receivers to implement in the fitness machines, but a variety that will suit the needs of any project. In the design stage, it will decide which components fit together and the best distribution in accordance with previous studies. The design equipment will be made by the R & D engineers (telecom engineer and mechanical engineer).

On the other hand, the GS-Calibrate and Gymshou are standard products which don't alternate technologies. They are both RFID systems, the GS-Calibrate is a writer and wristbands Gymshou are passive LF tags. Because they are non-custom devices, which use a standard technology, it is more comfortable for us ordering to a company dedicated exclusively to the mass production of these products RFID. The company is Beijing Topview Tech. Co., Ltd, chosen because it is a company with experience. Its headquarters is in Beijing, and because is from China we can create better links and negotiations than with others that we had to bring the goods from any country outside. Moreover, as a large company which distributes large quantities all over China, makes large-scale prices are low.

The forecast made in the business plan is to have more than one project simultaneously with the main objective of achieving a rapid expansion.

This directly affects the structure of the production process, which should include activities to ensure a continuous flow of production to balance work and projects.

It is essential, therefore, to determine the processes which shape the production chain as well as the time resources consumed by each one to make a proper allocation and distribution of tasks.

The processes undertaken for the development of GS-Monitor and GS-Receiver will be made by operators and provided for in the following chain of production processes:

GS-Receptor



GS-Monitor



Each of these processes are detailed in *Annex IV*.

The layout of the production is designed based on:

- The order in which processes must be performed.
- The time that processes consume.
- The number of people on plant to perform the processes.

The distribution design of the plant and the time consumed by each process and the number of people on the ground is 4 workers, it is more explained in *Annex VI*.

5.1.3. Implementation

Implementation is the phase that ends the production process, and in which all components are installed according to the design of the network that has previously been carried out.

Due to the large volume of users of the gym, this facility shall be conducted as quickly as possible and at times of minimal influence of athletes.

We will hire the necessary staff ensure that, taking into account the size of the installation of the project, it can be done with all the necessary guarantees in a week. In particular, the early years we will have 2 technicians who will be responsible for installation and maintenance.

5.1.4. Quality

Quality is a mainstay of the company, and should be kept in each of the activities performed. Although we know that many Chinese companies fail in the final process of quality, we want to be different. We want to create a company made in China but with the quality basis of Western companies.

We believe that quality is important to get our customer satisfied, giving a value to the brand Gymshou, and creating loyalty between the brand and customers.

For the correct operation of the GS-Monitors and GS-Receptors which that our company produces and supplies, we have a strict policy of quality in the production process. Specifically, one of the stages of the production line is specially designed to carry out quality control.

An operator will be responsible for checking that the detectors and interactive kiosks manufactured in the factory comply with the purposes for which they were created. With the help of a simulator, the real context where will be the GS-Receptors and GS-Monitors will be recreated. It is checked for correct operation, focusing on the most important aspects as reading and storing data in memory from Gymshou wristband and also proper delivery to the data network using the GS-Monitor.

Other issues to consider in the quality control is the placement. Furthermore, once installed the system, the technicians will monitor the proper functioning of all its constituents as well as the entire network during a trial period of one week.

5.2. Maintenance

Gymshou priority is the smooth operation of service 365 days a year through the website. It is also vital to our policy of maintaining the infrastructure which has been designed and installed, all the time considering that our product's competitive advantages lie in customer service.

After each installation, the staff which use the system will be trained to manage it correctly and to solve the minor incidents.

Initially, after the introduction of the system, the technicians will supervise in person the proper functioning.

Periodic reviews will be realized a posteriori, and also will be used to gather suggestions to help improve the service. These reviews are conducted by our engineers on a monthly basis.

These reviews will be conducted by our technician team, which are the same who know the system and who have previously installed Gymshou products.

5.3. Infrastructure and equipment

The necessary installations to carry out the processes of production and storage of goods will take place in a warehouse-factory located in Beijing.

The installations are previously authorized to carry out the production of GS-Receptor and GS-Monitor and stored them with other Gymshou products (GS-Calibrate and wristband Gymshou).

The equipment required for the warehouse will be mainly machinery, furniture, computer equipment and the person charged of the production plant. It must also take into account the supply of electricity, water and telephone.

The necessary facilities to carry out the organization of the company from the field of management, R & D, design, accounting and marketing are located in the Beijing headquarters, in a floor in Wudaokou. Is property of one of the chinese partners. We have chosen this because it must be a place that is near the gyms where we are going to work. The necessary equipment for offices consists of furnitures and desktop computers interconnected by local area network.

5.4. Inventory management

Due to the nature of the company, which operates according to specific requests from the gyms, it is not possible to determine in advance how many components will be installed in each case. It is for this reason that the supply of materials will be made to order, once done the study and design of the gym in question.

To no stop production during this period of time, it was thought desirable to have a factory stock for each of the components in order to start production before the arrival of the specific components of the order.

The orders are taken directly to the component manufacturers. As they are large orders, it will be possible to apply a special price which will provide economic benefits to the company.

All the components are stored in the factory and move directly to the gym where are going to be installed.

In this whole process is very important to store the arrival of the components to be installed directly, since they take up space that may be required at the time of production. It is for this reason that the arrival in the facilities of these products will take place at a time near the end of production of components at the factory.

5.5. Determining the cost of the product / service (manufacturing / buy / outsourcing)

Once determined the design of the products / services to be provided must also be defined how will be obtained the various components that will form part of it, and who will perform the activities within the elaboration process, in order to estimate production costs. The information of results of cost are showed out in *Annex V: Production costs*.

We analyze the installation and maintenance services offered by the company to take them into account when calculating production costs. To calculate both we use the same model: it lists all the components and activities that are part of the product design and elaboration process. The end result is to obtain the cost of the product / service. The material costs to produce the product are ¥ 2 Gymshou wristbands, ¥ 380 GS-calibrate , ¥ 540 GS-Receptors, ¥ 3,614 GS-Monitor.

After studying the situation (alternatives have been sought, we have seen which costs should be addressed, depending on whether a component is manufactured or purchased, or perform certain services or outsourcing), we have decided to purchase the components in entirety. In the *Annex VI Specifications* itself listed the companies that provide them, and their characteristics.

The main peculiarity of the simulation is that the units sold have variable costs, responding to the fact that the company offers services of different magnitude (varies depending on the fitness to cover their size, etc.). To enable that this model covers this consideration it has decided to calculate the variable costs in proportion to the volume of members, and for maintenance, which plays an important role in the temporary variable (obviously if the service is offered for a longer time costs increase), it has decided charge a fixed annual quote per gym. As a reference unit sales has been chosen, in the case of the installation, a project covering an upper-middle-class gym, estimating that has a volume of 1000 clients.

Calculations are made based on the results in the gym Nirvana Fitness which is more similar to the reference gym. The number of GS-receptor, for example, must be commensurate with the number of fitness machines, and the GS-Calibrate similar to the number of counters, since the Gymshou wristbands will be calibrated at these points. So for our standard simulation for a gym Nirvana Fitness with 1000 customers as it will have 1000 Gymshous, 1 GS-Calibrates, 32 GS-Receptors, 8 GS-Monitor, we can see in Annex XI.3.3. It should be noted that, for example, FPGA, transceivers, antennas, RFID, Bluetooth devices, electronic components, software, they are all part of the GS-receiver, so they are necessary in the same amount. The same happens with different devices and cards for each product. The application to be loaded into the plate, whose design is contracted at a rate of 30.000¥ per year and 10¥ per unit provided during the fifth year.

As for the internal assembly services, machining external of Gymshou products, quality control, packaging and deployment, all are made by the company. In the case of GS and GS-Receiver-Monitor, fixed costs are calculated based on the design costs of equipment, the simulator tests, previous models, which are showed in the costs of R&D section. The costs

showed in the table of “Identification of costs” from Annex V: Production costs represent the cost of all the components.

The value of the final price will reflect all these costs in addition to the added value that we give the product for the service it offers. Finally, take stock and see what the best price for our interest and attractive for purchase at the gym it was decided to be: 40¥ Gymshou wristbands, 570¥ GS-Calibrates, 810¥ GS-Receptors, 5.782¥ GS-Monitor.

Part of the offered maintenance is periodically renew elements of the system with the aim of reducing incidents and optimizes the overall performance of it, so it should buy GS-Calibrates, wristbands and also manufacture GS-Monitor and GS-Receptors for this purpose. This will cover the maintenance fees paid by clubs.

The number of Gymshou to be given to the gym so they can make use of the system installed depends on the number of partners. Like the GS-Monitors and GS-Receptors, they should update. The reasons may be for loss, damage, or because the client would like to renew yours for another with different features as colour. Whenever the gym needs new wristbands, will order directly to our company, and then the gym delivers them to the customer. Maintenance doesn't included the lost of a wristband, but this will solve as specific cases and will be solved with orders separately.

Finally, periodic checks of the system to verify proper operation, and monitoring of incidents are carried out by our technicians.

6. Plan of the organization and HR

During the operational business plan in China, we have accumulated a vast knowledge of local market characteristics: the diversity of sectors, of products and the location of the manufacturers. Having worked and doing a small study of Chinese business environment, we have acquired a deep knowledge, experience of how they act and the mentality of our trading partners.

Since we began our operations, the basic principle of Gymshou company is make to reach to the people a product and service to our customers with quality. This is our primary objective to achieve success, satisfaction of gyms that hire us, and our end customers. We aspire to a collaboration in the long term, so each customer success is also a success for us.

6.1. Our team

Our team should be composed of members from Europe and other countries as well as by local Chinese staff.

The western members, plus knowledge of Chinese language, should have several years experience gained working in the Chinese territory, in the fields of investment, quality assurance, business consulting, planning and production management and logistics. Also we value a familiarity with the sport environment, as well as an understanding of the needs and expectations of customers in the fitness industry.

Our Chinese partners, given their familiarity with local dialects must have experience of many years in search of suppliers and products which meet the standards and demands of gyms, the norms of the machinery of fitness and knowledge of our technology. They must understand perfectly the differences between the mentalities of the inhabitants of different areas of Beijing, even from different regions of China, thus facilitating the successful completion of our project.

6.2. Organizational structure

The project will be conducted by a mixt team composed of Chinese and Western staff. In this way we ensure good communication with Chinese counterparts while maintaining a full understanding of the needs of our customers.

In Gymshou, we will acquire a functional structure: it is the first step towards business success. We believe that this horizontal structure coordinated by the Director General, facilitates the supervision of the tasks, because every manager is an expert in the field of that particular

department. In addition, to have a very small range of products favors this structure, since all of us will go in the same direction.

In this case, there are five departments coordinated by the Directorate-General, which shall consist of the six founding members. Each is responsible for the direction of one of the areas shown in the chart, even though all of them collaborate actively in the implementation, development, production and product sales. Below it's possible to observe the organizational structure with the cultural character that we want to stand out in each job:



Organizational structure of Gymshou Company

- **General director:** will coordinate, distribute and plan the activities of the directors of each department. Shall be a person of Chinese origin, but also trained in Western universities. In this way the company will benefit in the bureaucratic level, because as we have seen in section 2, China attaches great benefits the administration and aid for autochthonous entrepreneurs. But at the same time, we are interested in workers formed in occident to give the company structure and business knowledge from European or American.
- **Production:** will be responsible for manufacturing the product within the agreed time (and should be in permanent contact with the marketing department and be responsible for post-sales service). Finally, be responsible for improving the current product, discuss improvements of our competitors and working on the next product generation. Our interest is that this department be directed and composed by Chinese people. They are methodical in the chain manufacturing, they are workers and provide a cheap labor. We also know that China's hardware industry is expanding, so will interest to us that the Director of Production be from China to give us their views and experience in how to produce hardware devices in China, giving us contacts and advice about which companies are best to negotiate.
- **Quality and accreditation:** the quality department will oversee each and every product that we produce, try to detect possible problems and propose solutions. On the other hand, the director of this department is responsible for give legal advice to the production technicians on the current legislation in terms of quality and measures of traffic control. Also, they will look for the regulations of other countries where we plan to expand in the medium term, provided of adapting our product. As we have seen in the first study of trade, Chinese enterprises do not have good quality control,

in this area, in occident are more developed. That is why we want to give a touch of Western quality to our product in China. To this end, it requires that the Director of Quality and Certification has experience and Western education.

- **Finance:** The main task of this section, will try to seek funding. In addition, it will require constant contact with suppliers and customers to optimize collection and payment deadlines. It is for this reason that they shall be up to date of all the advantages that the Chinese administration provides and have good financial ties with Chinese suppliers, is a sufficient reason to find a Financial Director Western with studies in Chinese finance. Must be trained and experienced in the Chinese market. Finally also will be responsible of the accounting, balance, operating counts and management information to manage resources.
- **Commercial:** This department is responsible for everything related to the direct sale and relationship with intermediaries: an analysis of sales volume, measuring and evaluating sales force, structure of the sales organization, planning ... Also, will try to find interesting alliances and trade agreements, especially with gyms and fitness companies. It is essential to have people skills to create trust to the future directors of clubs. Therefore should be of Chinese nationality and consistently with Chinese as familiar language.
- **Marketing and human resources:** its role will be to develop a marketing plan and set-up, market studies, promote the product, communicate our development, communication on the Internet using a web page, etc. To do a good study marketing, they should be up to date of habits and likes of people still living in Beijing. This way, go adapting the Gymshou products to the needs of people in China. Moreover, the director of this department is responsible for all matters relating to personnel management, promotion, selection, contracting, risk prevention, establishment of pay system, performance evaluation, etc.

Each team member will have got assigned the duties and responsibilities listed in the business sinus, taking into account that decisions, defining and reviewing objectives, will be coordinated in regular meetings of the management team, where each and every one of the contributions of the members shall considered and voted on by the entire team. Also made annual or special meetings with investment partners for making strategic decisions of great caliber.

The main objective pursued with this model is that each team member is responsible for the area better suited to their interests and generate proposals that will contribute to improving it and the whole Gymshou, working independently and after, as a team discussed all these ideas.

Some of these departments require the inclusion of human capital to carry out the wide variety of tasks, and thus comply with the proposed objectives.

6.3. Planning and HR management

6.3.1. Planning and recruitment

Once established the company, to implement the project, it will be necessary to hire a skeleton staff to meet our goals, besides the entrepreneurial team.

In view of of the mechanical and technological aspect of the project, we will hire a mechanical engineer and a telecommunications engineer working in R & D of our product. We also need a computer engineer in charge of creating and maintaining Gymshou website. For the development of software and website of fitness, we will hire outsourcing a company to advice us with coaches and nutritionists.

The production manager will require four workers in plant to take charge of the installation, assembly, quality control and product packaging. This will be guided by the indications from engineers working in R & D, to advise on the installation.

For the manual installations of our equipment and set-up of them in gyms, we will hire two technicians specifically trained to carry out this work. They will be responsible for general maintenance of the facility, using conventional and electronic controls. And perform diagnostics of failures and faults in it, also be responsible for minor repairs. For these controls, there also be available the director of quality support and approval.

At the start, we will hire a company to provide us the necessary software. Over time, in order to have less external dependencies as far as production is concerned, regardless of the company, our R & D and will have developed their own software for our products.

Regarding internal communication, although we are a microenterprise with a small organizational structure, errors in communication or the lack of information can affect the performance of the company. Therefore, the communication policy shall establish bidirectional communication channels both ascending, descending as horizontal. The aim is to achieve flexibility and fluency in communication between the different organs of the company.

6.3.2. Management

6.3.2.1. Recruitment and selection policy

One of the functions of HR department consists of the search and selection of staff necessary to complete the template Gymshou. The recruitment policy will depend exclusively on job offered. When be have a set of candidates, will be perform a selection policy based on an assessment stage of various aspects of each of them. See details in *Annex VII: Recruitment*.

Once hired, the department's goal will be to encourage them to adapt quickly in the company, explain all the processes, policies and standards of the company and its role in his new job, as

well as build bridges of dialogue for have a efficient communication between new employees and those already have been working in the company.

6.3.2.2. Policy and compensatory wage

In the first year, provided undertake the business, the remuneration of the members shall be in a fair and low-wage concept, in order to bear the high costs faced by new firms.

The philosophy on wage policy in the enterprise will be based on a retribution based on the profitability of the company. In the coming years will increase those salaries over the previous year to motivate workers. Annex VIII is an explanation of the wage policy in China, and later, in annex XI.3.2. *Salaries and outside services*. we show the wages of each member of Gymshou.

6.3.2.3. Welfare policies

To evaluate the performance of each employee will be used a classic method of assessment based on the degree of worker efficiency and responsibility of his job.

Horizontal relations prevail between the different departments of labor, although also will be established a vertical relationship between the general director and the leaders responsible for each department as well as between the employee and his superiors in the department.

At the same time we want to care the work environment, promote the enthusiasm and creativity, meet the needs of workers and motivate them for successful job performance. For this reason, there is a need to implement a wellness policy to motivate and encourage employees, which consists of the following:

- Conduct periodic surveys to determine the degree of satisfaction of employees in the enterprise and possible improvements that could be made. Be carefully considered for optimal integration of employees within the project.
- Provide responsibilities to the employees to make them feel valued in the organization.
- It will give guidance and training necessary to the employees to achieve key skills to enable them to develop their roles within the company. For example, the managers to improve their functions within the enterprise may receive additional training on business administration and management.
- Organization of business meals provided to promote the integration and interaction among all the people who are part of the corporate staff. Will be made extraordinary company annual dinners to celebrate the efforts of all members advance the business year after year. And besides, the first year of life Gymshou, there will be a dinner to commemorate the first anniversary of its founding.

- The contracts offered are of indefinite, because you want employees to feel comfortable at work and not fear for their jobs with short-term contracts. This also marks the challenge that the employee himself to is implied with the project long term.

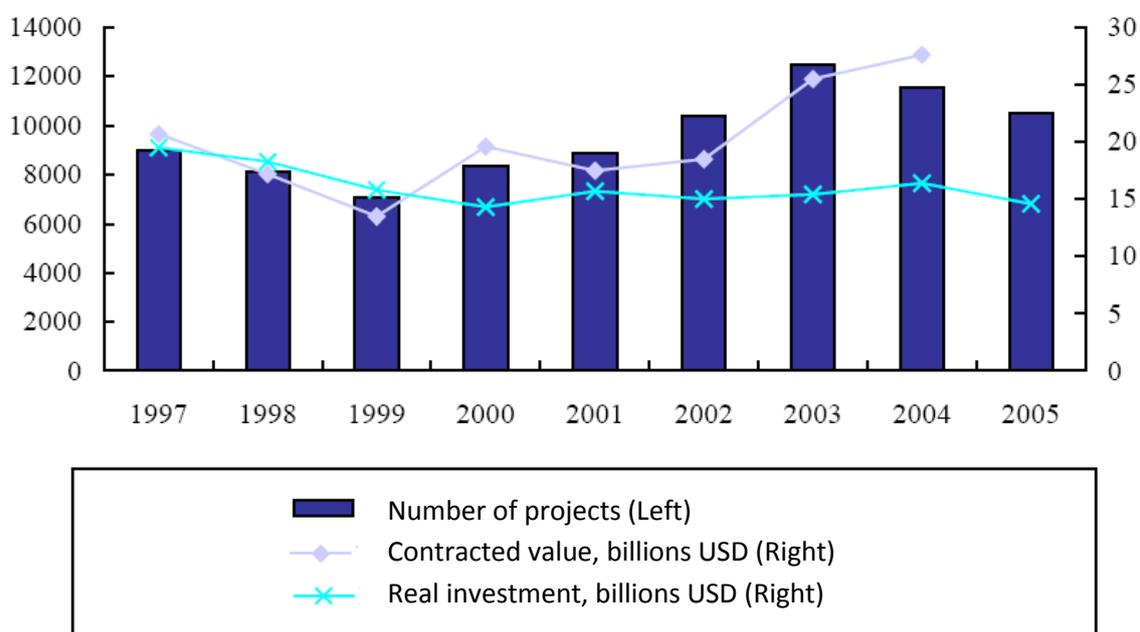
7. Juridical plan fiscal

7.1. Constitution in China of Joint Venture (JV)

Joint ventures are corporate structures through which its partners are creating a new entity or contractual partnership where is shared the investment, operating expenses, management responsibilities and the benefits and losses.

During deployment, more than two decades ago, of the China's policy of "Open Doors", joint ventures were the initial investment vehicle used by foreign investors, not by choice but by obligation. At that time, the central government used joint ventures as vehicles for transfer of advanced technology and management skills from foreign firms to the state ones. In return, foreign investors benefited from access to markets and to local suppliers, as well as a modest investment and operational costs. Although liberalization of foreign investment has entered other investment vehicles, such as WFOEs (Wholly Foreign-Owned Enterprise, companies with 100% foreign capital), still some projects require the participation of Chinese partners, both from a legally as operationally.

Plot 1: Joint Venture 1997-2005



Source: China Statistical Yearbook, Ministry of Commerce

In Annex XIII Joint venture in China, we can see the explanation of the types of joint venture (Equity Joint Venture (EJV) and Contractual Joint Venture(CJV)), as well as the advantages and inconveniences in a joint venture.

7.2. Determination of the legal form of the company

Gymshou will consist of 6 members where five of them will provide ¥128.500 and the sixth one a local valued in ¥900.000. Given the desired organizational internal structure in which each partner will have a charge, we opt for a constitution as a limited liability company, equity joint venture (EJV) with Chinese and Western partners. In *AnneIX* we present a table which collects all information of an equity joint venture (EJV).

Charge	Contributed Capital	% Share	Nationality
Director General	900.000 (provides the property)	58,35%	China
Production Manager	128.500	8,33%	China
Director of Quality and Standardization	128.500	8,33%	Western
Commercial Director	128.500	8,33%	China
Financial Director	128.500	8,33%	Western
Marketing and HR director	128.500	8,33%	Western

Table with the data of the founding members of Gymshou

In the decision of the legal form has been taken into account the fact that the company aims to establish itself quickly, so it should have a solid structure of enterprise from the outset with great agility in its activities, resulting in the limited partnership as the best option.

Investors should pay up Social Capital in proportion agreed between them and the contract of the EJV. China's EJV's law requires than the foreign partner contributes 25% of the capital of the company to be classified as foreign owned enterprises and can enjoy tax advantages. As seen in the percentage, the foreign partners contribute 25% (8,33% * 3 foreigners members). There is usually not a ceiling. Benefits are distributed as a dividend to the parties in proportion to their share in the company. The constitution of society will be made by public which deed must be registered and will be from this time that the company acquire legal personality.

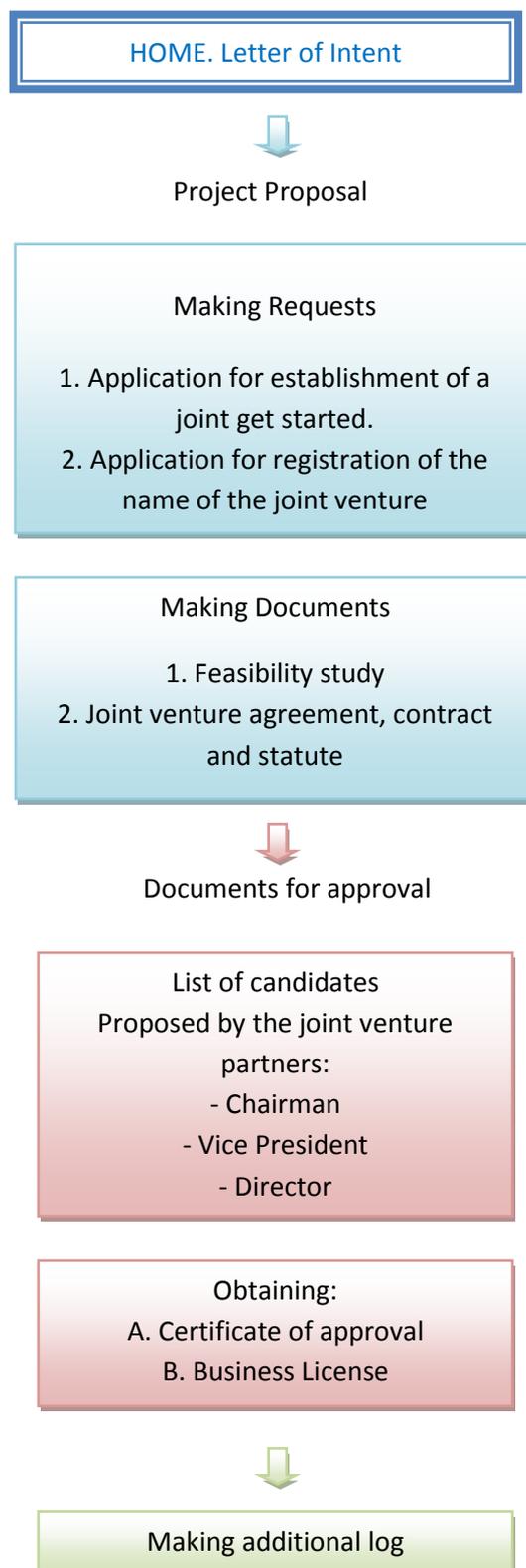
In scripture the most important to include are the statutes, which establish the essential rules for the company's corporate performance. Within this will be defined Administrators¹ and the general meeting.



¹ Executive and representative authority at a time, which carries out daily administrative management of social enterprise and representing the organization in its dealings with third parties.

7.3. Steps to the opening a Joint Venture

We show below an overview of the steps to set up a joint venture in China.



7.3.1. Documentation must be prepared to establish a JV

Must be prepared by the investor (the "Original Language" with an English translation, or directly in English).

- a) Business License (copy) of the investor in the "COUNTRY OF ORIGIN".
- b) Credit Certificate (original) investor in the "Country of origin" of a major bank.
- c) Mandate (original signed by the legal representative of the investor) to the legal representative of the office to be established in China and a brief CV of the legal representative provided by the investor in the "Country of Origin" (the legal representative a JV in China is usually the President of the Council: if someone else will sign on behalf of the company to be established, it requires an additional letter of reference).
- d) Appointment letter (original, signed by the legal representative of the investor), Passport (photocopy), and 3 passport photos of legal representative, of members of the Council, of the Director General and Assistant Director General (if this post) of the company will be established in China supplied by the investor in the "COUNTRY OF ORIGIN".
- e) List of Machinery and Equipment (items bought from import or domestically in separate listings).
- f) This list must include name, model, specification, origin of production, manufacturer, production date, price, quantity, etc..
- g) Production technology (including the introduction explanatory, diagram describing the process of production, quality standards...).
- h) Methods of protection at work.
- i) Issues Sanitation and Anti-Epidemic (cleaning and anti-bacteria), this point is not so important.
- j) Environmental protection (possible production of pollution, waste gas, water, solid waste composition and solution treatment).
- k) Type, quantity, source (purchased in foreign or domestic), and prices of virgin materials.
- l) Organizational plan.
- m) Water consumption, electricity, gas or other energy to the project.
- n) Estimated production over the next 3 years.

Apart from the above, the competent office may request new information or documentation if necessary.

7.3.2. Documents to be prepared in China

- a) Letter of Commitment.
- b) Project Proposal.
- c) Contract of Purchase or lease.

- d) JV contract between investors.
- e) Articles of association of the company to be established in China.
- f) Viability study for the company to be established (based on materials and information prepared by the investor).
- g) There may be a Report / Environmental Assessment Table, which should be carried out by an environmental assessment based on materials supplied by the investor.

7.3.3. Limitations on approval

The investments under USD 10 million can be approved by a district authority or the authority of a development zone. If this investment is between 10 and 30 million USD, the nod has to be accorded by the Foreign Investment Commission municipal or provincial. However, areas of high-level investment (both provincial and national) can also approve projects if the investment does not exceed 30 million RMB.

7.4. Investment period

Investment	Minimum registered capital investment (%)
Than 3 million USD	70%
Between 3 and 10 million USD	50% and not less than 2.1 million USD
Between 10 and 30 million USD	40% and not less than 5 million USD
30 million de USD	33,33% and not less than 12 million USD

Tips on investment period:

15% of registered capital should be invested within three months after the date of issuance of the license.

If the registered capital is less than \$ 500,000, the rest has to be invested within 12 months.

If the registered capital is between \$ 500,000 and \$ 1 million, the rest has to be invested within 18 months.

If the registered capital is between 1 million and 3 million USD, the rest has to be reversed within the next 2 years.

If the registered capital is between 3 million and \$ 10 million, the rest has to be reversed within 3 years.

If the registered capital exceeds USD 10 million, investment from the rest can be decided according to the department of local authorities.

7.5. Organizations and support measures for financing

This point is one of the most delicate, since it determines the largest injection of funding we expect to receive in our initial phase.

Of all the possible routes, described below which we are most favorable and best suited to our business plan "technology-based businesses".

The Chinese government promotes R & D and seizure, and gives money to institutions providing aid to companies in technology-based start-ups. In this way the organism National Natural Science Foundation of China offers support to projects that develop R & D in the country. Gymshou meets the conditions required to be beneficiaries of such assistance, such as be a SME company with a technological project with R & D. After a thorough assessment and if awarded, the agency will provide financial assistance. The grant will be 125.000 ¥. For more information about the agencies that finance R & D can consult *Annex XII: Financial R & D agencies*, which explains the institutions: The National Natural Science Foundation of China (NSFC) and Beijing Natural Science Foundation.

We also need a loan, the Chinese government promotes entrepreneurship, and for being a new company we can get it. After presenting our project proposal, we opt for a loan of 180.000 with interest at 4% and a repayment period of 8 years.

8. Financial economic plan

Then we will do a brief study of the economic-financial plan. To justify these values can be found in *Annex XI: Economic-Financial plan*.

8.1. Investment and financial analysis

The funds raised for the project cover a value of 1.722.500¥, distributed as follows: 642.500¥ (provided by 5 members) + 900.000¥ (provided by the partner who puts the locals) of social capital contributed, from the government institutions a credit of 180.000¥ with 4% interest because we are a technology company and with a returning period of 8 years. Also a grant from the National Natural Science Foundation of China of 125.000¥ without the need to refund.

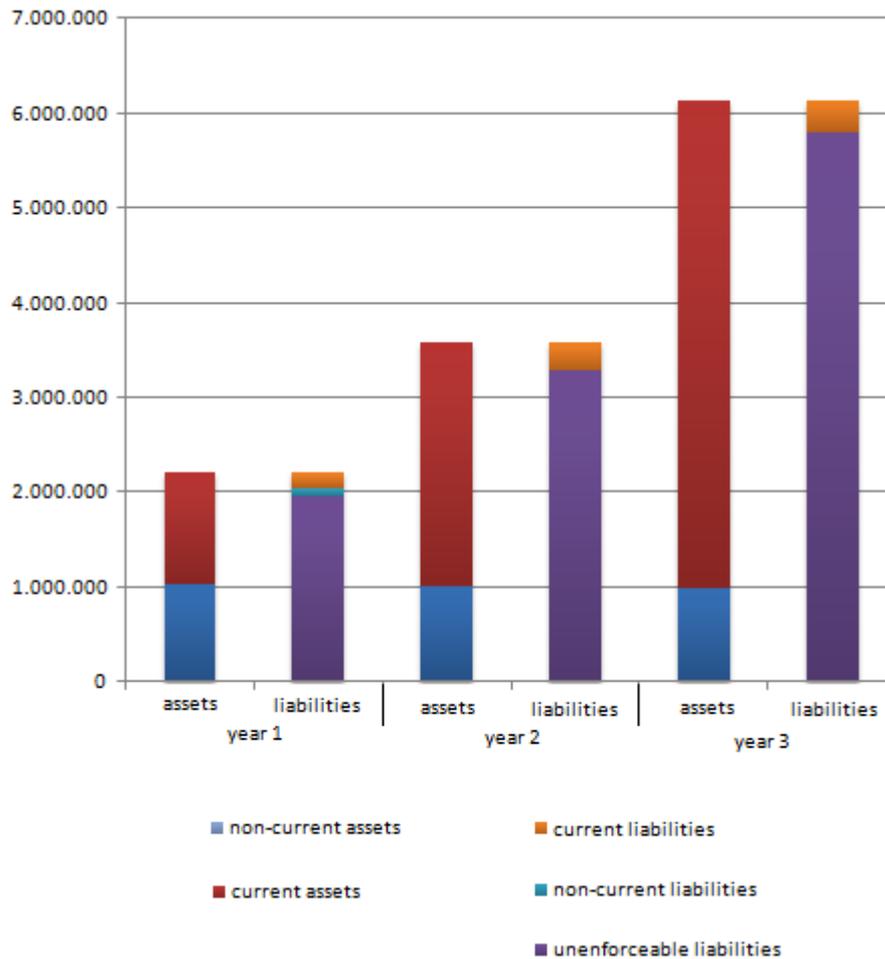
Each of the five partners of Gymshou involves the same percentage in society, and the sixth partner is the one who brings the property in which the activity takes place. After negotiations it was decided so because this sixth partner will have the corresponding percentage of shares available. The property, valued at market price, is free of charge and could be mortgaged in case of be necessary injection of capital into the company.

The capital structure is conservative, with little debt to others, making financial leverage is low. This has two consequences: it increases the financial soundness of Gymshou, because we cover the capital non-current assets of the company and part of current assets; and reduces the profitability of the company, because the own funds require a more high rentability than the debt of providers because they are at greater risk. Should there be any type of complication or situation of this type in the company, the government institutions would be the first to charge and shareholders the last ones, so the latter requiring return is higher (paid through dividends or through value at time of sale). In the case of the project, the dividends will begin to spread in the fourth year, to properly capitalize the company and make it strong for future contingencies.

Analysis of the capital soundness

We see that the company has a solid balance sheet structure because the net worth (passive unenforceable) is greater than the non-current assets in all exercises.

		year 1	year 2	year 3
assets	non-current assets	1.016.198,00	999.456,00	982.714,00
	current assets	1.193.791,67	2.583.286,77	5.149.715,62
liabilities	unenforceable liabilities	1.943.791,34	3.279.036,94	5.790.500,28
	non-current liabilities	90.000,00	0,00	0,00
	current liabilities	176.198,33	303.705,83	341.929,33



Analysis of the ratio of indebtedness

The indebtedness of Gymshou is stable for the following years. As we are repaying the debt is decreasing its quality too, because the total long term debt is lower (because it moves part of the long-term debt to short-term, worsening this way its quality).

	year 1	year 2	year 3
debt ratio	0,17	0,18	0,18
quality of debt	0,34	0,00	0,00

Analysis of working capital

One of the characteristics of Gymshou is that we have a dynamic positive working capital, because we charge the payment from customers before the date of payment to suppliers. That is, we require customers to pay 50% of the order in advance, and 50% at the end of adaptation, and we pay to suppliers after 30 days which is later than anticipated adaptation of the gym. This allows finance partially the realized purchases, reducing the potential lack of liquidity or cash flow and have a high ratio of current solvency.

Also, using the same values, we can calculate the current solvency ratio (measured as current assets / current liabilities), which reflects the guarantee given by the current assets over total current liabilities. In the case of the company is very high since it implies that with current assets we cover more than 3 times of liabilities every year.

	year 1	year 2	year 3
current solvency	6,78	8,51	15,06
working capital	1.017.593,34	2.279.580,94	4.807.786,28

8.2. Economic and financial structure

To start the activity, from Gymshou we perform the purchase of the items which, then, we will adapt, assemble, market and install in sports centers. The purchases are split between Gymshou bracelets and the machinery which will be installed in the gym.

We believe that some of them can be defective, and therefore we realize a higher volume purchases. Furthermore, the difference between those which are defective and actually purchased, will be put in stock.

In the early years, the purchases we make considering that the difference between the defective and the total buy is a 3% for the bracelets, which allows us to accumulate a certain amount of stock, once analyzed its ratio of adjusted consumption. Not necessary to buy more parts because we will have a safety stock to cover defective. Stock management is expected to be actively, so that rotation thereof is high, thus reducing the costs of storing it. No changes are expected in the technology used until after 4 years. The projected sales volume of for the first exercises grows exponentially, since in the first year we plan to install our service in 20 gyms. In this first exercise, we only record sales from the second quarter of the year, because initially we will develop the software that will use the exercise machines. Subsequently, we hope to implement the software. Following years we hope to arrive to 50 gyms and the third year to 80 gyms of China's capital. In subsequent years we will expand to other Chinese cities like Guangzhou and Shanghai.

Is presented below the calculation of net profit for the company in which the main variables from the company management can be seen. We will have a significant increase in sales, and consequently, an increase in variable costs (including the components used for installation of machinery).

Gross margin decreases over the years because we're creating a stock to be capable of responding to the growth of the company and deal with possible contingencies that may arise with our suppliers (which do not serve orders on time).

However, EBITDA, more variable used at the management level of companies, grows significantly. This allows better analysis of the evolution of the management of a company,

because that only takes into account the internal variables of the company's sales and costs. It doesn't consider the depreciation expense or interest, are costs that vary with time and depends of the degree of conservatism that we adopt in the company. It can be seen that the growth of the company is efficient, and EBITDA increases during the three years and the percentage of fixed costs decreases.

Income	year 1	year 2	year 3
sales	2.399.984,0	5.489.060,0	8.813.296,0
variable costs	(999.378,4)	(2.477.606,0)	(3.964.169,6)
Gross margin	1.400.605,6	3.011.454,0	4.849.126,4
% margin	58%	55%	55%
fixed costs	(951.600,0)	(936.888,0)	(964.994,6)
EBITDA	449.005,6	2.074.566,0	3.884.131,8
% margin	19%	38%	44%
Depreciation and amortizatio	(16.742,0)	(16.742,0)	(16.742,0)
EBIT	432.263,6	2.057.824,0	3.867.389,8
interests	(7.200,0)	(3.600,0)	(3.600,0)
EBT	425.063,6	2.054.224,0	3.863.789,8
taxes	(148.772,3)	(718.978,4)	(1.352.326,4)
Net profit	276.291,3	1.335.245,6	2.511.463,3
<hr/>			
EBITDA	449.005,60	2.074.566,00	3.884.131,76
C. Working Var	(42.760,9)	(55.691,4)	(59.071,4)
interests	(7.200,0)	(3.600,0)	(3.600,0)
taxes	(148.772,3)	(718.978,4)	(1.352.326,4)
debt repayment	-	(90.000,0)	(90.000,0)
Cash Flow	250.272,4	1.206.296,2	2.379.133,9
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Stocks	35.001,6	86.864,0	138.982,4
clients	93.957,7	225.294,2	360.470,7
suppliers	(86.198,3)	(213.705,8)	(341.929,3)
Net working capital	42.760,9	98.452,3	157.523,7
var. wo capital.	(42.760,9)	(55.691,4)	(59.071,4)
<hr/>			
	year 1	year 2	year 3
Dead Point	1.630.598,1	1.707.691,5	1.753.879,5

From the first year we get a positive net benefit, as sales margins are high and costs Gymshou structure are not very high, hardly exists indebtedness and machinery required for the activity can be funded with capital.

	year 1	year 2	year 3
ROA	45%	211%	402%
ROE	23%	65%	68%

The ROA ($ROA = EBITDA / \text{total assets net}$) is a measure that looks at the performance of company assets, must exceed the average rate at which the company is indebted, because such as the first creditors are the government institutions they are the first we have to pay. A consequence of this, if the asset's performance is not enough, we can not afford to pay interest. It is possible to see that ROA is very high especially in the third year, since it EBITDA grew significantly and we won't do new investments in business.

The ROE, in turn, is the return received by shareholders for investing in the company. For the shareholders are satisfied with the investment, the ROE should be higher than the return on an investment without risk. Given that today the return of riskless asset is close to 3%, investors will be satisfied with the performance offered by the company.

8. Annexes

Annex I: China Guangzhou International Fitness



"China Guangzhou International Fair Fitness" is an international fitness fair. It is an excellent platform for buyers, suppliers and health centers to establish contacts with the Chinese market and introduce their products and services there. For industry experts, the fair is an ideal opportunity to learn, to exchange ideas with colleagues and business contacts. It will be held on March 3rd-5th 2011.



Exhibitor register online

* Company Name :	<input type="text"/>
* Person :	<input type="text"/>
* Phone Number :	<input type="text"/>
Fax :	<input type="text"/>
E-mail :	<input type="text"/>
Address :	<input type="text"/>
* Products :	<input type="text"/>
Booth application :	We need standard booth(es) or raw space <input type="text"/> , Booth No. <input type="text"/> , Total <input type="text"/> \$.
AD application :	We want advertise on show directory : <input type="text"/>
Hotel :	We need <input type="text"/> -star hotel, <input type="text"/> standard room, date: <input type="text"/>
Other Information :	<input type="text"/>

Annex II: Logo and image advertising Gymshou

As a new company, in Gymshou, the advertising and promotion are two values to help look after the entry into the target market.

First, it has designed a logo. This image will be which represent the set of people working in Gymshou and should convey the philosophy of the company. Below is the chosen design.



This design has been chosen due to the large amount of visual information it contains. On the one hand, the observer can sense with the weights that the product is related to the world of gyms and fitness. We decided to use a dark blue to represent it as it gives an image of quality and reliability. The font and the way it is written Gymshou refer to two very different styles. On the one hand GYM comes from the English, and that is why we decided to use a western font. SHOU Instead, it is written in pinyin (phonetic chinese) as the word "hand." To write SHOU we used a font made with strokes, emulating China calligraphy. Thus, visually emulates the union of two styles very latent in the formation of our company, which is the organization and Western creativity with the eastern work culture.

GYM + SHOU union could be translated by a mix of English and Chinese as "the gym in your hand." It is the metaphorical sense which would have the wristbands, thinking that with the technology that's in your wrist, you can connect to gym equipment.

For the promotion of the company in magazines and posters, we have designed an ad that aims to attract potential customers interested in fitness.



We opted for an ad that represents a healthy lifestyle and body worship. Appears in black and white photograph of a sportsman. It has a wonderful body, that arouses the curiosity of both men and women, since men envy it and would like to achieve that goal, and women are attracted to and interested in what it advertises. This image is intended to impact the viewer and make you think carefully about whether it is able to improve their physical appearance, and whether it can meet the challenges of doing fitness exercises.

In yellow (to highlight) appears the slogan 连接你的身体 which translates as "connect your body". Here is embedded a technology message, because the client can associate the word "connect" to transfer information. And the word "body" associated with getting the body of the model.

So the first thing that will look the viewer it will be the athlete's body, and wondering how to get it, he will read the message. And next to this slogan, at the same height, appears Gymshou wristband in yellow too, highlighting as product advertised. You can also see the logo on the top and the web address at the bottom.

Annex III: QFD of GS-Receptor and GS-Monitor

Below is showed the QFD of the GS-Monitor and GS-Receiver that the company assembles at the factory and that is part of the RFID system and Bluetooth system which it will be implemented.

GS-Receptor

In its development, one must first determine the requirements to be met in performance. These are:

- Ease of use by customers and technicians in the gym.
- Quick Connect to send the Info to the database. It will be a bluetooth connection between the GS-Monitor and GS-Receiver. It must be high speed as they have a heavy load because it must constantly transmitting data of identification of the different GS-receiver and of the user who is using.
- Reliable, the GS-receiver must be equipped with the necessary technology to communicate with the 'tags' RFID in any condition of the environment (interference, proximity of the wristbands, etc.).

Depending on the importance of each of the above needs, it determines the quality of the various components that comprise the GS-Receiver.

Customer needs	Customer importance	Estructure	Antenna	Transceiver	FPGA	Bluetooth device	Battery
Easy to use	1	●					●
Fast connection	2					●	
Reliable	3		●	●	●	●	
	Objective values	5	8	15	8	12	10

Many relationship (5)

Medium relationship (3)

Little relationship(1)



GS-Monitores

The needs that must meet the GS-Monitor in its operation will be:

- The design. It will take into account that is attractive and modern. According to the type of fitness center to which we will install.
- There has to be the ideal number of GS-Monitors into the gym. It won't be an optimal design if it produce queues because there are few in the room compared to the number of athletes, or otherwise, there useless GS-Monitors.
- Reliable. The GS-Monitor must receive data from each machine and processing them to upload on the Gymshou Web quickly and securely.

- Interactive system easy to use, which allows customers can see their routines and details of machines which they have to perform simply and intuitively. In order to be used by any customer regardless of their expertise in handling electronic section.

Depending on the importance of each of the above requirements, it will be determined the quality of the various components that comprise the GS-Receiver.

Customer needs	Customer importance	Kiosk interactive	Bluetooth device	Internet connection	Software
Appearance	1				
Number of monitors	2				
Reliable	3				
Easy to use	4				
	Objective values	6	8	8	12

Many relationship (5)

Medium relationship (3)

Little relationship(1)





Annex IV: Description of the production process and distribution plant

GS-Receptor processes:

For the creation of the GS-recipients we will buy the necessary hardware and we will make the installation of all blocks. This way, we create a RFID reader for communication between the wristband and the GS-Receiver, with a Bluetooth device to send information to the GS-Monitor.

1) The first step in the production of the GS-Receiver is the loading of the software in the FPGA. This program will be responsible for communication with the chip on the wristband. In the first months of existence of the company, this program will be purchased from a supplier.

Meanwhile, the R & D department works on obtaining of the software too. Once the program has been created, we will dispense of the software which gives us another company to save costs. In addition, this software will go updating.

When the program has been loaded, the next phase of the first process is the program of testing to verify that the operation is correct.

(Processing time: 30min)

2) The second stage of the process is based on the assembly of the FPGA on the motherboard. In this phase, the operator will be devoted to assembling the FPGA loaded with the program in the motherboard. Also install the other components that make up the reader as is the case of output and input buttons from the GS-Receiver. It will make the connection and installation of the two LED digits, the reset button and the calibration buttons. The two LED digits are visible to users and are to mark the type of machine where is incorporated the GS-Receiver. The reset and calibration buttons serve to signal the receiver which kind of machine is, and therefore, which signal must be issued.

(Processing time: 20min)

3) In the third stage, the operator will assemble the transceiver into the motherboard, along with the FPGA. The RF transceiver is the source of RF energy used to activate and charge the passive RFID transponders. The radio frequency transceiver controls and modulates the radio frequency that the antenna transmits and receives.

(Processing time: 40min)

4) For the fourth stage, an operator will assemble the antenna on the motherboard, finishing the form of the reader from GS-Receiver. The antenna is used to transmit RF signals between the reader and the RFID device.

(Processing time: 40min)

5) Now it will be assembled the block containing the Bluetooth device. It will be the responsible for issuing information to the database, in our case, is responsible for sending the information to GS-Monitor.

(Processing time: 20min)

6) The next stage is based on the assembly of the structure of GS-Receiver. An operator will shape the structure whichxx will be subject to the fitness machine. In this structure the reader is introduced previously created, being finished GS-Receiver.

(Processing time: 10min)

7) The seventh stage is based on the product quality control. Controlling the subjection of the structure, and correct functioning of the receptors using a simulator that recreates the real context where will be used the GS-Receiver.

(Processing time: 20min)

8) The final stage of production is devoted to the assembly of GS-receiver, after passing quality control. This operator will leave the GS-Receptor packed and ready for subsequent distribution thereof.

(Processing time: 10min)

GS-Monitor processes:

We will receive the interactive kiosks from a specialized home, specifically Beijing Cyber Farsighted Electronics Science And Technology Ltd. We will choose one that meets the quality that we want but at an affordable price. After, we will dock it a module and modify it to suit our service.

1) The first step is to incorporate the necessary hardware to connect to the Internet. So that it could be assembled a network card to interconnect the CPU data to internet.

(Processing time: 30min)

2) The next step will incorporpar the modules to connect to the GS-Receptor. In this way, we will assemble the hardware that contains the Bluetooth device to the CPU of the interactive kiosk. That will be internally, so it is not noticeable from outside.

(Processing time: 20min)

3) Once the hardware is made, we apply the software. We load the software necessary for the proper functioning of the GS-Monitor. This program will be responsible for communication between the GS-receptors and the GS-Monitor. Will also integrated the interactive part for easy customer use. In the first months of the enterprise, also we buy the software from a supplier, and when R & D team has developed our own, we will replace it.

When the program has been loaded, the next phase is the testing program to verify that the operation is correct.

(Processing time: 40min)

4) In the next stage of the production process, an operator will connect an RFID reader taking advantage of the blocks from GS-Receiver. Thus, this new receiver will be as a GS-Receptor but instead of having a Bluetooth device output is connected to the GS-Monitor by cable to cut costs. Then, the operator mounts the structure and fixings. He will leave ready the output connections for use, finishing this way the GS-Monitor.

(Processing time: 10min)

5) The fifth stage is based on product quality control. It controls the proper functioning of the screen and buttons. Be checked for proper operation of the receivers using a simulator that recreates the real context where will be used the GS-Monitor.

(Processing time: 20min)

6) The final stage of production is devoted to the packaging of GS-Monitor, having passed the quality control. The operator will leave the GS-Monitor assembled and ready for the subsequent distribution thereof.

(Processing time: 10min)

GS-Calibrate processes:

GS-Calibrate is an RFID writer. We won't have to fit any module, because we will use a standard model provided from another enterprise that works with RFID technology. So do not get any production process in our factory.

GS-Gymshou processes:

The wristbands will also be chosen and assigned to the enterprise charged in RFID technology. We will send a prototype design to receive the style and brand Gymshou. Neither there will be any production process in our factory.

Number of workers and distribution in plant

It is estimated that the production needed to perform within the time allowed the different projects the company will be about 8 GS-Receptors and 2 GS-Monitor daily. If we produce significantly more than this, it could make that stocks accumulate in the factory unnecessarily, and lower production would do the company wasn't able to make time project.

To be able to maintain this pace, we must be capable of producing a GS-receiver each hour in a working day of 8 hours.

The sum of all the processes that make up the production of the 8 GS-Receptors and 2 GS-Monitors is 1780 minutes. Knowing that each day we need these 1780 minutes of labor, and also knowing that a worker produces 480 minutes daily, we can take that will be needed in plant 3'7 workers.

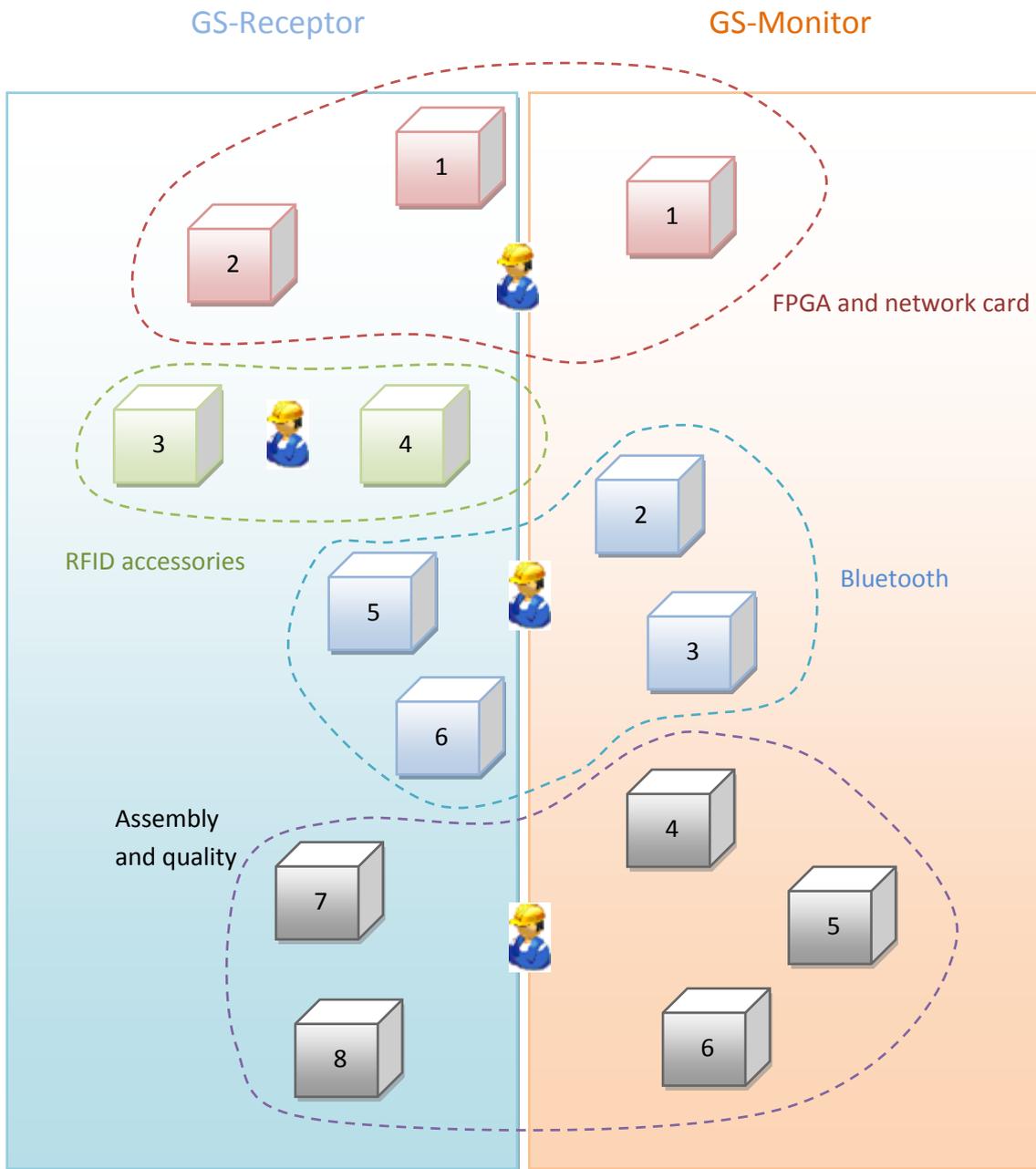
Therefore, we conclude that we need four workers in the factory and distribute among them the different processes so as to form a string which maximizes the working time of each.

The working time of each operator for each GS-Receptor fits the cadence (80 minutes) of the production chain.

- Operator 1: FPGA and network card. Total time: 80min.
 - GS-Receptor:
 - Time processing 1: 30min. Load software in FPGA+Test
 - Time processing 2: 20min. Assemble FPGA
 - GS-Monitor:
 - Time processing 1: 30min. Assemble network card.
- Operator 2: RFID accessories. Total time: 80min.
 - GS-Receptor:
 - Time processing 3: 40min. Assemble transceiver.
 - Time processing 4: 40min. Assemble antenna.
- Operator 3: Bluetooth devices. Total time: 80min.
 - GS-Receptor:
 - Time processing 5: 20min. Assemble Bluetooth device.
 - Time processing 6: 10min. Mounting of the structure.
 - GS-Monitor:
 - Time processing 3: 20min. Assemble Bluetooth device.
 - Time processing 4: 40min. Load software.
- Operator 4: Assembly and quality. Total time: 80min.
 - GS-Receptor:
 - Time processing 7: 20min. Quality.
 - Time processing 8: 10min. Assembly.
 - GS-Monitor:
 - Time processing 1: 10min. Mounting structure and RFID input.
 - Time processing 2: 20min. Quality.
 - Time processing 2: 10min. Assembly.

Being a process approach, is not a priority set the time to the limit in a rigid way, so that each worker has a time frame to suit each particular design.

Given the time required for each of the processes in the development of products, established the following distribution in plant:



Annex V: Production costs

Subsystem	RFID recorder (GS-Calibrate)	Tag wristband RFID (Gymshou)	FPGAs	Transceiver	RFID Antenna	Bluetooth GS-Receptor	Bluetooth GS-Monitor	Electronic Components GS-Receptor	Electronics Components GS-Monitor	Mechanical Components GS-Receptor	Kiosk interactive	Nedwork Card	Soft. FPGAs	Soft. GS-Monitor
Brand	Beijing Topview Tech	Beijing Topview Tech	Altera	Melexis	Sunbestfid Technology	Roving networks	Roving networks				Beijing Cyber	Beijing Dongda		
Type	component	component	component	component	component	component	component	component	component	component	component	component	project	project
Make / Buy	buy	buy	buy	buy	buy	buy	buy	buy	buy	buy	buy	buy	outsorcing	outsorcing

Procurement cost

Unit Cost	380	2	70	150	10	220	220	50	50	20	3000	42		
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Outsourcing costs

Unit cost													10	10
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Manufacturing cost

Unit cost

Subsystem	Int. assembly GS-Receptor	Int. assembly GS-Monitor	Quality Control GS-Receptor	Control Calidad GS-Receptor	Packing GS-Receptor	Packing GS-Monitor	Implementa tion GS-Receptor	Implementa tion GS-Monitor	RFID GS-Monitor
Brand									Gymshou
Type	project	project	project	project	project	project	project	project	project
Make / Buy	make	make	make	make	make	make	make	make	make and buy

Cost Product	¥
Gymshou	2
GS-Monitor	3614
GS-Receptor	540
GS-Calibrate	380

Procurement cost

Unit Cost										280
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Outsourcing costs

Unit cost

Manufacturing cost

Unit cost	2	4	5	5	2	2	1	1	
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Annex VI: Specifications

For the choice of components has been studied the existing supply in the market and have been selected the products that best fit our needs. To estimate production costs and sales prices has been decided to choose mid-range products.

RFID WRITE (GS-CALIBRATE)

RFID LF 125KHZ Reader-USB port-TVB3120U 380¥

Enterprise: Beijing Topview Tech. Co., Ltd.



Description

Proximity cards / tags reader. Frequency: 125 kHz

Reading Speed: less than 70ms

Indicators: LED and buzzer

Current: ±45mA

Operating temperature: -10°C~70°C

Humidity: -10-70°C RH

Dimensions: 100*75*18mm

Interface: USB

RS 232 Interface, 9600 baud, n, 8, 1 & Wiegand 26 Interface

Small size encapsulated reader

Multiread. The reader verifies that the tag is in the field doing multiple readings.

Pin type connector. Reader very suited for integration.

RFID TAG WRISTBAND (GYMSHOU)

RFID LF 125KHZ Wristband-TVA-125-005 2¥

Enterprise: Beijing Topview Tech. Co., Ltd.



Product Details

Brand and Model	RFID LF 125KHZ Wristband-TVA-125-005
Colors:	yellow, red, green, blue, blak...
Waterproof	yes
Material	Silicone

Payment & Shipping Terms

Price:	FOB USD 0.2~0.8 / Piece Get Latest Price. 2¥
Minimum Order Quantity:	1,000 Piece/Pieces samples order can be smaller
Port:	guangzhou
Packaging Details:	1) ; plastic bags , 2) ; cartons
Delivery Time:	3 days for the normally order of normally size
Payment Terms:	T/T,Western Union,MoneyGram,cash
Supply Ability:	30,000 Piece/Pieces per Day for the popular model and size

Product Feature

Wristband-TVA-125-005

Material: Silicone Rubber

Physical Size: OD32 (Face) x 20 cm (Size)

Operation Temperature: 0°C ~ 160°C

Storage Temperature -20°C ~ 80°C

Standard Color: Blue / Red / Black / Yellow / Dark Blue / White

MOQ: 300 pcs per color per size

Others: Water proof. Available with silk printing

Product Specifications

IC	EM*	TEMIC (T5567)	Mifare Ultralight	Mifare 1 S50	Mifare 1 S70	TI Tag-it	ICode2	U CODE EPC G2
Memory	64 bits	330 bits	512 bits	1Kbytes	4Kbytes	2Kbits	1024bits	96-bit EPC No
Function	Read only	Read / Write						
Dimensions	OD 32 (Face) x 20 cm (Size)							
	OD 32 (Face) x 23 cm (Size)							
Frequency	125KHz	13.56 MHz					915MHz	
Operation Temperature	0°C ~ 160°C							
Material	Silicone Rubber							
Weight	17 g							
Surface	Matte							
Standard color	Blue / Red / Black / Yellow / Dark Blue / White							

*EM4200 / TK4100

TRANSCEIVERS

Melexis TH7122 150¥ (Midrange)

Enterprise: Shenzhen Ji Sheng Da Technology Co., Ltd.

Transceiver FSK / FM / ASK single-chip. Designed to operate at low power in a single channel or multichannel programmable in half duplex.

Can be used in applications operating at frequencies of LF.



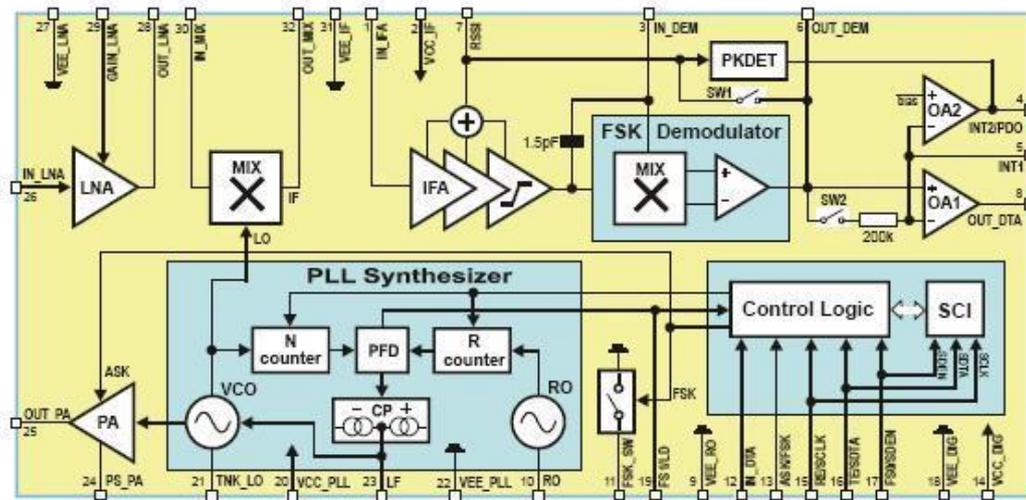
Features

- Single chip solution with only a few external components.
- Programmable mode of a single frequency.
- Programmable multi-channel mode.
- Serial interface for three-wire control.
- FSK and FM digital signals for analog signal reception.
- Peak detector for ASK detection.
- Switchable LNA gain for improved dynamic range.
- Automatic PA turn-on after PLL lock.
- ASK Modulation alcxanzada by PA on / off keying.
- Encapsulated Package 32-pin low profile quad.

Technical Specifications

- Low Frequency.
- Voltage range: 2,2V to 5,5V.
- Temperature range: -40 °C to 85 °C.
- Standby current: 50 nA.
- Current reception: 6,5 mA.
- Current transmission: 12 mA.
- RF power range: -20 dBm a 10 dBm.
- Sensitivity -105 dBm in FSK with a BW of 180 KHz filter.
- -107 dBm sensitivity in ASK with a BW of 180 KHz filter.
- Maximum input level -10 dBm to -20 dBm in FSK and ASK.
- Range of deviation FM / FSK: + - 2.5 to + -80 kHz.
- Input frequency acceptable: + - 10 A 150 KHz (depending on the deviation FSK).

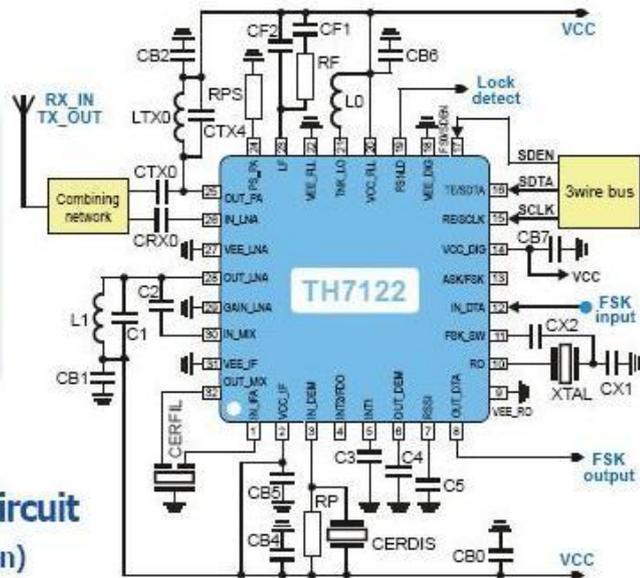
Block Diagram



Evaluation Board



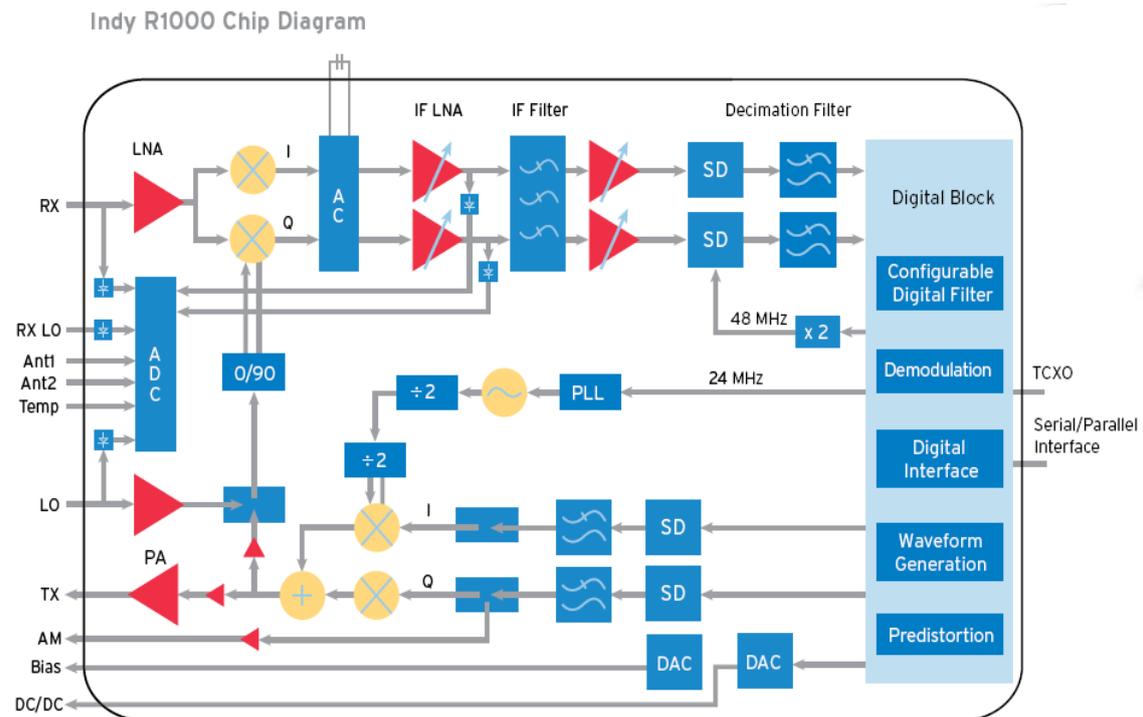
FSK Application Circuit
(internal AFC Option)



Indy R1000 UHF RFID Transceiver

Highly integrated chip with high performance as a reader of LF.





Incorporates a complete transmitter, receiver, demodulator and base band functions to the standard LF.

Up more than 90% of the discrete components of a design from a reader.

Reduces design complexity, reduces manufacturing costs and increases reliability.

Enables greater battery life in handheld readers, power over USB for readers short-range and Power over Ethernet (PoE) for high performance readers and long range.

Supports EPCglobal Gen 2 specifications and ISO-18000-6C, regional regulatory requirements and the entire LF band.

Supports low-level diagnostics and remote management.

Protocol includes firmware, development tools, radio drivers and frameworks for rapid development and exit to the marking.

Supported protocols	EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C <ul style="list-style-type: none"> • DSB, SSB y PR-ASK • Dense reader mode (DRM)
Integrated Power Amplifier	Configurable Integrated power amplifier. Supports external power amplifier
Modem	Configurable Digital Baseband
Frecuencias	LF
Encapsulated	8 mm2 QFN 56 pin
Power	Advanced Power Management
Process	SiGe 0.18μ Bugs
RSSI	Configurable
Sensitivity	-95 dBm (DRM) 110 dBm (LBT)
Supported Regions	U.S., Canada and other regions to follow the U.S. regulation FCC Part 15 Europe and other regions to follow the regulations ETSI EN 302 208 with and without LBT China, India, Japan, Korea, Malaysia, Taiwan

ANTENNA RFID

Antenna 150 KHz 10¥

Enterprise: Sunbestrfid Technology Co., Ltd.



Brand Name: Sunbest rfid

Model Number: rfid reader EM9926

Specifications

A 125kHz reader

Include A 10-cm diameter square antenna coil

An external DC 12V voltage that provided 0.2A current power

This reader is supplied in a PCB board containing RF circuits, an 8-bit microcontroller and data output connections. Its main functions are driving the antenna, sending demodulated data into microcontroller, checking the input data code and processing output data format.

The following is Data Connection of Reader:

Color	Name	Description
BLACK	GND	GND
RED	DC +12V	DC +12V POWER
GREY	ALARM	ALARM Output line
YELLOW	D0	WEIGAND 26 DATA0
GREEN	D1	WEIGAND 26 DATA1
WHITE	LED	LED Control line, the color of the light from red to green as LED pulled down.
BLUE	BEEP	Buzzer Control line, the buzzer beep as BEEP pulled down.
BROWN	RS232	Rs232 data line

FPGA

Altera Arria GX 70¥ (gama media)

Enterprise: High Cloud Electronics Ltd. Guangdong



The Arria GX FPGA family from Altera (Stratix II GX-based) now accelerates the transceiver to 3.125 Gbps. Arria GX FPGAs also supports more protocols, including XAUI, SDI, CPRI, OBSAI and SerialLite II, along with the ability to develop the IP owner, using its basic mode ...

- The main features are:
 - Characteristics of the transceiver block
 - High-speed serial channel transceiver with clock / the help of data recovery to 3.125 Gbps.
 - Devices are available with 4, 8 or 12 channel full-duplex serial high speed transceiver
 - CDR support for standards-based following the bus - PCI Express, Gigabit Ethernet, SDI, SerialLite II, XAUI, and Serial RapidIO, along with the ability to develop proprietary, serial-based IP using its Basic mode
 - El transmisor y el receptor individualmente disminuyen el consumo de energía durante el no funcionamiento
 - 1.2-V and support pseudo current mode logic 1.5-V (MLCP) in intermediate buffers transmitter output
 - Receiver indicator for loss of signal (available only in PCI Express mode (PIPA))
 - Dedicated circuitry that complies with PIPA, XAUI, GigE, SDI and serial RapidIO
 - Channel aligner meets XAUI

- Main features of the device
 - TriMatrix™ memory consisting of three RAM block sizes to implement true dual-port memory and first-in first-out buffers intermediaries (first in, first out) with performance up to 380 MHz

- Up to 16 global clock networks with up to 32 regional networks by the device clock
- The blocks of high-speed DSP provide dedicated implementation of multipliers, multiply-accumulate functions, and filters finite impulse response (FIR)
- Up to four enhanced PLLs and the device provides spread spectrum, bandwidth programmable registers the switch-over multiplication and phase shifting advanced
- Help asymmetrical and differentiated standards many input / output
- Support source-synchronous high-speed input / output up to 47 differential channels
- Support for the standard source-synchronous bus, including SPI-4 Phase 2 (POS-PHY level 4), SFI-4.1, XSBI, UTOPIA IV, NPSIA and CSIX-L1
- Help for high-speed external memory including double data rate (DDR and DDR2) SDRAM, and single data rate (SDR) SDRAM.
- Remote configuration updates.

BLUETOOTH DEVICE

RN-41-USB Bluetooth Class 1 OEM Module 220¥

Enterprise: Roving networks



RN-41

DS-RN41-V3.1 11/13/2009

Class 1 Bluetooth® Module



El módulo RN41 de Roving Networks
Image 3 of 3



FOB Price:	EUR 22 - 25 / Piece Get Latest Price
Port:	EUROPE
Minimum Order Quantity:	1 Piece/Pieces
Payment Terms:	T/T,PAYPAL

Brand Name: RN-41

Model Number: RN-41

RN-41-USB OEM module - Bluetooth Class 1 OEM

Specifications

RN-41-USB Bluetooth Class-1 OEM Module - Bluetooth 2.0 EDR Compliance: FCC EN IC Host Command Interface (HCI)

RN-41-USB Bluetooth Class-1 OEM Module - Bluetooth 2.0 EDR Compliance: FCC EN IC Host Command Interface (HCI)

Key Features

Bluetooth Qualified (Bluetooth 2.0 EDR)

Bluetooth Class 1 (17dBi - up to 100m)

AT-Command support

Internal Ceramic

SMD Solder-Pads

USB Interface

Dimensions 13,2 x 25,8 mm x 2,05mm

Power supply 3,3VDC +/- 10%

No Software required

Low priced

Small Design

Designed for high data throughput

Wireless LAN Co-Existence support

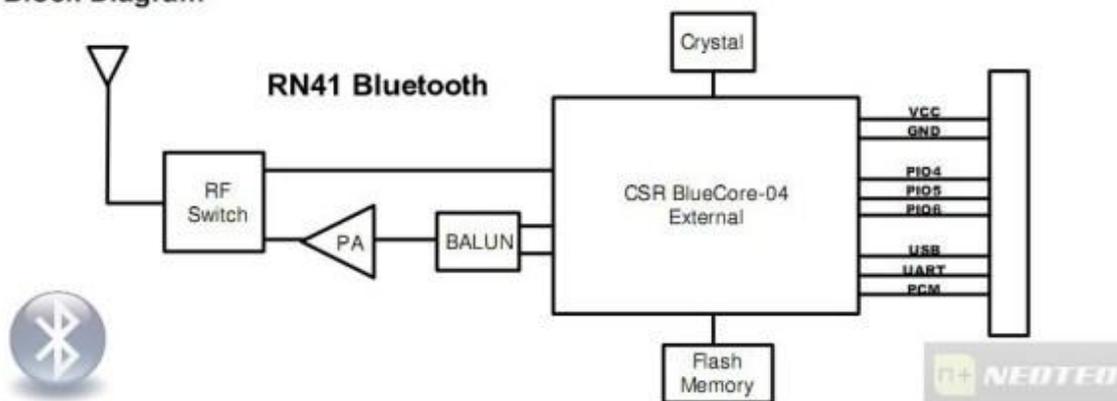
Configuration over Bluetooth

Leadfree and RoHS compliant

Industrial and Automotive Temperature Range -40 - +85°C

Custom tailored configurations possible

Block Diagram



KIOSK INTERACTIVE

Product: H-YCCY-CLK300 Standard P series 3000¥

Enterprice: Beijing Cyber Farsighted Electronics Science And Technology Ltd.



Products Status: Stock	Brand Name: YCCY	Model Number: CLK300
Place of Origin: Beijing China (Mainland)	screen size:: 32", 42",55",60"	touch screen:: infrared sensor touch screen
response time:: less than 10ms	warranty:: one year	Output:: 1500 sets/month

Packaging & Delivery

Packaging Detail:	Foam for inner packing, wooden box for outer packing.
Delivery Detail	depends on the order

Specifications

Interactive kiosks fashionable design quick and excellent ROI on-time delivery one year warranty

Interactive kiosks

Touch screen: infrared sensor touch screen

Cabinet: all steel enclosure, imported metal paint,With a rust-proof, anti-magnetic, anti-static function

Control panel: host, fans, audio switch control, Volume tone tuning

Color: Mediterranean blue, silver or by user-specified

Network interface: provides RJ45 standard network interface, Provides RJ11 standard telephone interface

Power supply: voltage AC220V±10% 50HZ±1HZ, Power consumption <100W

Working environment: temperature: +5°C--35°C, Humidity: 40%--80%

PC

CPU: E5500+ FAN

Motherboard: Gigabyte G31

Memory: 2G

Hard Discs: 250G

NETWORK CARD

10/100/1000Mbps Gigabit Network Card 42¥

Interprice: Beijing Dongda Jinzhi Technology Co., Ltd.



FOB Price:	US \$4.2 - 4.5 / Piece Get Latest Price 42¥
Port:	Fob Shenzhen
Minimum Order Quantity:	200 Piece/Pieces other
Supply Ability:	20000 Piece/Pieces per Week other
Payment Terms:	T/T,Western Union

Quick Details

Application: Server	Type: Wired	Kind: Internal
Transmission Rate: 10/100/1000Mbps	Interface Type: PCI	Certification: CE,FCC,ROHS
Brand Name: OEM	Model Number: 3C-PCIEA1000M	Place of Origin: Guangdong China (Mainland)

Packaging & Delivery

Packaging Detail:	Colour Box
Delivery Detail	7 Days

Specifications

10/100/1000Mbps Gigabit Network Card

Chipset: Realtek 8169SC

10/100/1000Mbps Gigabit Network Card

32 bit PCI-bus Rev 2.1/2.2, PnP supported, full duplex (IEEE 802.3x)

RPL/PXE supported

Compliant with IEEE802.3 10BASE-T and IEEE802.3u 100BASE-TX, and IEEE802.3ab 1000Base-T standard

PCI2.2 supported, supported PCI clock up to 66MHz

Standard RJ-45 port, 10/100/1000Mbps auto negotiation, full/half duplex supported

ACPI supported

10/100Mbps full and half duplex, 1000Mbps full duplex supported

Full Duplex Flow Control (IEEE 802.3x) supported

IEEE802.1P, IEEE802.1Q VLAN tag supported

Auto-MDI/MDIX supported

Supports ACPI, PCI power management

With LEDs to indicate network Link/Activity/Speed/Duplex

Annex VII: Recruitment

In order to select staff that best fits the needs of the company and with the greatest potential to perform their duties, they must make an exhaustive study of each of the candidates who will comprise the following:

- Preliminary interview. The candidate must complete an employment application form where you indicate your basic information, and will be a first interview.
- Knowledge test. Oral and written test to assess the validity of the candidate's knowledge.
- Psychological test. Conducting a psychological test by the candidate to assess their emotional balance.
- Final interview. The candidate must make a new interview, this time more formal and strict than the first.

The following shows the different profiles required to perform each job. With these prerequisites will hire 4 operators, 2 technicians, 1 computer engineer, 1 telecommunications engineer and 1 mechanics engineer.

OPERATOR	<ul style="list-style-type: none"> • Middle Degree related to electronics. • Experience of more than 2 years in the sector. • Immediate incorporation
TECHNICAL	<ul style="list-style-type: none"> • Middle Degree Certification of the technology • Training in the enterprise and transportation availability • Immediate incorporation
COMPUTER ENGINEER	<ul style="list-style-type: none"> • Engineering or higher, specialty in electronics or telecommunications. • Fluent in English and Chinese, spoken and written • Valuable additional languages • Experience in the design, development and maintenance of websites
TELECOMMUNICATIONS RESEARCH	<ul style="list-style-type: none"> • Superior Telecommunications Engineering • High knowledge of communications between devices • Fluent in English, spoken and written. Understand Chinese • Experience in the field of research

MECHANICAL RESEARCH	<ul style="list-style-type: none">• Mechanical Engineering• High knowledge of Mechanical and Industrial Electricity• Fluent in English, spoken and written• Understand Chinese• Experience in field research
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Also in the selection policy will be considered as an added value that recruits are young and eager to engage in a large business project.

Annex VIII: Wage policy in China

China is famous for its cheap labor, which is generally regarded as the country's strategic advantage. In fact, wages in China are usually one-tenth of those in some European countries, see the example in Table 1. Consequently, China has achieved dominance in many industries where production is intensive in labor, and although it would increase these costs, the rate of increase is slow and it will keep the difference between China and most of the rest of the world.

However, it should be noted that labor costs are not uniform across the country, and neither are in all industries. Recently, Shanghai, for example, is less competitive in terms of labor costs, especially in terms of senior positions, where foreign capital companies offer high salaries to attract qualified people.

Table 1: Average wages per year in China for certain jobs.

Charge	Wage (US\$)
Director	21.638 – 48.761
Engineer	10.845 – 17.450
Secretary	4.855 – 6.772 (With a foreign language)
Manual operator	2.000 – 2.400

The general perception in the West is that savings are achieved by the low labor costs are counteracted by low productivity. This concept is not quite true. The assessment of productivity in China, as in many other developing countries, is a complex issue.

In the first place, necessary segmenting productivity figures across industries and regions, given the huge differences in labor productivity among firms.

Secondly, it should also be noted that the competitive advantages of companies in China should not be attributed solely to the cost of labor. In most sectors, companies adopt a completely different approach to the West in terms of their investments, using more labor than automation. With more manual work processes, savings can be achieved over 50% in capital investment. The low numbers of per capita productivity in China as a whole should be associated with lower initial investment.

Thirdly, it is important to note that in China, improvements in productivity are much faster than in the West, as it achieved annual productivity improvements of 10-15% compared with the usual in the West of 3 -4%. In the experience of many companies with foreign capital, it is clear that you can achieve Western levels of productivity in manual labor (unskilled and semi-skilled) in China, and can even exceed (skilled workers).

Annex IX: Joint venture participation

Highlights	General characteristics of a joint venture
Principal laws and government regulations	Legislation on joint ventures for participation; Legislation RP China on enterprises
Number of members	Minimum: 2 members; Maximum: 50 members
Partners Require	No need for any specific requirement, except in the joint venture which will be related financial industries or trade
Approval authorities	The provincial delegation COFTEC or MOFTEC, depending on: (i) total investment of the joint venture participation, and (ii) the type of industry that is going to dedicate this company, restricted, permitted or encouraged
Superior authority of the corporation	Board. The total number of board members must be mutually agreed by the partners according to the company's contract and articles of association signed
Decision Making	Quorum agreed by the joint meeting: more than 2 / 3 of the members; Quorum for decisions of the following important issues: Unanimous agreement by board members present at this: - Changes to the articles of association; - Suspension and dissolution of joint venture participation; - Increase or decrease of registered capital; - Company mergers with other entities; - Quorum for other decisions must be agreed by the articles of association of the joint venture participation
Transfer of participation	Without the prior consent of the / s other / s part / s, one of the joint venture partners for participation can not transfer its ownership interests of the company. This transfer requires the approval of the original that gave the approval for the creation of joint venture participation
Other legal restrictions	No

Annex X: Contractual joint venture

Highlights	General characteristics of a joint venture
Principal laws and government regulations	Legislation on joint ventures cooperation; Legislation RP China on enterprises
Number of members	Unspecified. Should be decided by them
Partners Require	No need for any specific requirement
Approval authorities	The provincial delegation COFTEC or MOFTEC, depending on: (i) total investment of the joint venture participation, and (ii) the type of industry that is going to dedicate this company, restricted, permitted or encouraged
Superior authority of the corporation	There are no restrictions, depending on the contract and articles of association of joint venture
Decision Making	There are no restrictions, depends on agreement between the parties
Other legal restrictions	No

Anexo XI: Economic-Financial plan

XI.1. Balances

XI.1.1. Asset

ASSET				
NO CURRENT ASSETS	1.032.940,0	1.016.198,0	999.456,0	982.714,0
INTANGIBLE immobilizer	19.920,0	19.920,0	19.920,0	19.920,0
concessions	4.000,0	4.000,0	4.000,0	4.000,0
industrial property	3.920,0	3.920,0	3.920,0	3.920,0
applications software	12.000,0	12.000,0	12.000,0	12.000,0
MATERIAL immobilizer	113.020,0	113.020,0	113.020,0	113.020,0
lands and grants	-	-	-	-
machinery	10.280,0	10.280,0	10.280,0	10.280,0
furniture	3.400,0	3.400,0	3.400,0	3.400,0
section I+D equipment	23.500,0	23.500,0	23.500,0	23.500,0
Transport elements	68.500,0	68.500,0	68.500,0	68.500,0
Other tangible assets	7.340,0	7.340,0	7.340,0	7.340,0
PROPERTY investment	900.000,0	900.000,0	900.000,0	900.000,0
lands	-	-	-	-
construction	900.000,0	900.000,0	900.000,0	900.000,0
Depreciation and amortization	-	(16.742,0)	(33.484,0)	(50.226,0)
CURRENT ASSETS	814.560,0	1.193.791,7	2.583.286,8	5.149.715,6
Stocks	-	35.001,6	86.864,0	138.982,4
comercial	-	35.001,6	86.864,0	138.982,4
Trade and other receivables	-	93.957,7	225.294,2	360.470,7
customer for sales and services	-	93.957,7	225.294,2	360.470,7
Cash	814.560,0	1.064.832,4	2.271.128,6	4.650.262,6
treasury	814.560,0	1.064.832,4	2.271.128,6	4.650.262,6
ASSETS TOTAL	1.847.500,0	2.209.989,7	3.582.742,8	6.132.429,6

XI.1.2. Liability

EQUITY AND LIABILITIES				
EQUITY	1.667.500,0	1.943.791,3	3.279.036,9	5.790.500,3
OWN Founds	1.542.500,0	1.818.791,3	3.154.036,9	5.665.500,3
capital	1.542.500,0	1.542.500,0	1.542.500,0	1.542.500,0
capital scriptures 1 (member contributed property)	900.000,0	900.000,0	900.000,0	900.000,0
capital scriptures 2 (contributed by 5 of 6 members)	642.500,0	642.500,0	642.500,0	642.500,0
Required no capital	-	-	-	-
Reservations	-	27.629,1	161.153,7	308.500,0
legal and statutroy	-	27.629,1	161.153,7	308.500,0
Results of previous	-	248.662,2	1.450.383,2	3.814.500,3
Remnant	-	248.662,2	1.450.383,2	3.814.500,3
Grants, donations and legacies received	125.000,0	125.000,0	125.000,0	125.000,0
NON-CURRENT LIABILITIES	180.000,0	90.000,0	-	-
Long Term Debt	180.000,0	90.000,0	-	-
Debts to credit institutions	180.000,0	90.000,0	-	-
CURRENT LIABILITIES	-	176.198,3	303.705,8	341.929,3
Current liabilities	-	90.000,0	90.000,0	-
Debts to credit institutions	-	90.000,0	90.000,0	-
Trade and other payables	-	86.198,3	213.705,8	341.929,3
suppliers	-	86.198,3	213.705,8	341.929,3
TOTAL EQUITY AND LIABILITIES	1.847.500,0	2.209.989,7	3.582.742,8	6.132.429,6

XI.2. Profit and loss account

OPERATIONS			
Net turnover	2.274.984,0	5.477.060,0	8.801.296,0
sales	2.254.984,0	5.407.060,0	8.651.296,0
<i>% growth</i>		140%	60%
maintenance	20.000,0	70.000,0	150.000,0
<i>% growth</i>		250%	114%
Procurements	(999.378,4)	(2.477.606,0)	(3.964.169,6)
consumption merchandise	(971.440,0)	(2.408.600,0)	(3.853.760,0)
deterioration of merchandiser and supplies	(27.938,4)	(69.006,0)	(110.409,6)
Other operating income	125.000,0	12.000,0	12.000,0
ancillary revenues and other operating revenues	-	12.000,0	12.000,0
embedded operating subsidies to income	125.000,0	-	-
Staff cost	(895.200,0)	(922.056,0)	(949.717,7)
executive salaries	(720.000,0)	(741.600,0)	(763.848,0)
workers salaries	(175.200,0)	(180.456,0)	(185.869,7)
External service costs	(56.400,0)	(14.832,0)	(15.277,0)
external software	(12.000,0)	-	-
salaries outside services (software company, fitness company)	(44.400,0)	(14.832,0)	(15.277,0)
Depreciation and amortization	(16.742,0)	(16.742,0)	(16.742,0)
OPERATING INCOME	432.263,6	2.057.824,0	3.867.389,8
<i>% growth</i>		376%	88%
<i>% margin</i>	19%	38%	44%
Financial expenses	(7.200,0)	(3.600,0)	(3.600,0)
debt to group companies and associates	-	-	-
debt with third parties (loan interest)	(7.200,0)	(3.600,0)	(3.600,0)
restatement of provisions	-	-	-
FINANCIAL RESULTS	(7.200,0)	(3.600,0)	(3.600,0)
PROFIT BEFORE TAX	425.063,6	2.054.224,0	3.863.789,8
<i>% growth</i>		383%	88%
Income Taxes	(148.772,3)	(718.978,4)	(1.352.326,4)
YEAR RESULTS	276.291,3	1.335.245,6	2.511.463,3

XI.3. Detail

XI.3.1. Materials immobilizer

INTANGIBLE IMMOBILIZER		TOTAL
Administrative concessions		4.000,00
Industrial Property		3.920,00
Community trademark		2.010,00
Patent registration		1.910,00
patent registration	800,00	
Request for a report	800,00	
concession	310,00	
Computer applications		12.000,00

TANGIBLE IMMOBILIZER			
	Q	P/U	TOTAL
Machinery			10.280,00
Assembly	1	9.000,00	9.000,00
Material workshop	1	1.280,00	1.280,00
Furniture			3.400,00
Office supplies	1	3.400,00	3.400,00
Equipment R&D section			23.500,00
RFID Test Material	1	3.100,00	3.100,00
Blueetooth Test Material	1	3.600,00	3.600,00
Computer element	1	7.000,00	7.000,00
Measuring instruments	1	9.800,00	9.800,00
Transport elements			68.500,00
Van	1	68.500,00	68.500,00
Other tangible material			7.340,00
Computer equipmet for marketing and HR section	1	7.340,00	7.340,00

XI.3.2. Salaries and outside services

				year 1	year 2	year 3
				TOTAL		
SALARIES						
Executives				720.000,00	741600	763848
Director General	1	FT	12.000,00	12,00	144.000,00	
Production Director Quality and Standardisation Director	1	FT	12.000,00	12,00	144.000,00	
Commercial Director	1	FT	12.000,00	12,00	144.000,00	
Marketing and HR Director	1	FT	12.000,00	12,00	144.000,00	
Workers				175.200,00	180456	185869,68
R&D researchers	2	FT	6.000,00	12,00	72.000,00	
Computer Technics	1	FT	5.000,00	12,00	60.000,00	
Operators	2	FT	1.200,00	12,00	14.400,00	
	4	FT	1.200,00	12,00	14.400,00	
TOTAL SALARIES:				895.200,00	922056	949717,68
EXTERNAL SERVICES						
Service software for our products during the first year						
Enterprise subminister of software	1	WS			30.000,00	* 1 only 1 year
Fitness consulting services for development software and web						
Enterprise specialized fitness and nutrition	1	WS			14.400,00	14832 15276,96
TOTAL EXTERNAL SERVICES:				44.400,00		

FT: Full Time

WS: Works and Service

xH: Per Horas

XI.3.3. Wristband and machines

	Q	P x U	Total Buying	pieces	Total Consumption	Sale price	TOTAL SALE	Gross margin	contribution variation %	Consumption	Defective	Stock variation	Stock to 31.12	Customer debt	Suppliers
YEAR 1			1.034.380,00		999.378,40		2.254.984,00			971.440,00	27.938,40	112.852,92		93.957,67	86.198,33
Wristband															
Gymshou	23.000,00		46.000,00	22.400,00	44.800,00										
15% backup	20.000,00	2,00	40.000,00	20.000,00	40.000,00	40,00	800.000,00	95%	35%						
12% defectuosas	3.000,00	2,00	6.000,00	3.000,00	6.000,00						4.800,00				
	2.400,00	2,00	4.800,00	2.400,00	4.800,00										
Machines															
	168,00		607.152,00	161,60	584.022,40										
GS-Monitor	160,00	3.614,00	578.240,00	160,00	578.240,00	5.782,40	925.184,00	38%	41%						
5% backup	8,00	3.614,00	28.912,00	8,00	28.912,00										
1% defectuosas	1,60	3.614,00	5.782,40	1,60	5.782,40						5.782,40				
	691,20		373.248,00	672,00	362.880,00										
GS-Receptor	640,00	540,00	345.600,00	640,00	345.600,00	810,00	518.400,00	33%	23%						
8% backup	51,20	540,00	27.648,00	51,20	27.648,00										
5% defectuosas	32,00	540,00	17.280,00	32,00	17.280,00						17.280,00				
	21,00		7.980,00	20,20	7.676,00										
GS-Calibrate	20,00	380,00	7.600,00	20,00	7.600,00	570,00	11.400,00	33%	1%						
5% backup	1,00	380,00	380,00	1,00	380,00										
1% defectuosas	0,20	380,00	76,00	0,20	76,00						76,00		35.001,60		

	Q	P x U	Total Buying	pieces	Total Consumption	Sale price	TOTAL SALE	Gross margin	contribution variation %	Consumption	Defective	Stock variation	Stock to 31.12	Customer debt	Suppliers
YEAR 2			2.564.470,00		2.477.606,00		5.407.060,00			2.408.600,00	69.006,00	185.964,67		225.294,17	213.705,83
Wristband			57.500,00		115.000,00		56.000,00		112.000,00						
Gymshou	50.000,00	2,00	100.000,00	50.000,00	100.000,00	36,00	1.800.000,00	94%	33%						
15% backup	7.500,00	2,00	15.000,00	7.500,00	15.000,00										
12% defectuosas	6.000,00	2,00	12.000,00	6.000,00	12.000,00						12.000,00				
Machines															
GS-Monitor	420,00		1.513.680,00	404,00	1.456.016,00										
5% backup	400,00	3.604,00	1.441.600,00	400,00	1.441.600,00	5.766,40	2.306.560,00	38%	43%						
1% defectuosas	20,00	3.604,00	72.080,00	20,00	72.080,00										
GS-Receptor	1.728,00		915.840,00	1.680,00	890.400,00										
8% backup	1.600,00	530,00	848.000,00	1.600,00	848.000,00	795,00	1.272.000,00	33%	24%						
5% defectuosas	128,00	530,00	67.840,00	128,00	67.840,00										
GS-Calibrate	52,50		19.950,00	50,50	19.190,00										
5% backup	50,00	380,00	19.000,00	50,00	19.000,00	570,00	28.500,00	33%	1%						
1% defectuosas	2,50	380,00	950,00	2,50	950,00										
	0,50	380,00	190,00	0,50	190,00						190,00		86.864,00		

	Q	P x U	Total Buying	pieces	Total Consumption	Sale price	TOTAL SALE	Gross margin	contribution variation %	Consumption	Defective	Stock variation	Stock to 31.12	Customer debt	Suppliers
YEAR 3			4.103.152,00		3.964.169,60		8.651.296,00			3.853.760,00	110.409,60	251.952,89		360.470,67	341.929,33
Wristband	92.000,00		184.000,00	89.600,00	179.200,00										
Gymshou	80.000,00	2,00	160.000,00	80.000,00	160.000,00	36,00	2.880.000,00	94%	33%						
15% backup	12.000,00	2,00	24.000,00	12.000,00	24.000,00										
12% defectuosas	9.600,00	2,00	19.200,00	9.600,00	19.200,00						19.200,00				
Machines															
GS-Monitor	672,00		2.421.888,00	646,40	2.329.625,60										
5% backup	640,00	3.604,00	2.306.560,00	640,00	2.306.560,00	5.766,40	3.690.496,00	38%	43%						
1% defectuosas	32,00	3.604,00	115.328,00	32,00	115.328,00										
GS-Receptor 1	2.764,80		1.465.344,00	2.688,00	1.424.640,00										
8% backup	2.560,00	530,00	1.356.800,00	2.560,00	1.356.800,00	795,00	2.035.200,00	33%	24%						
5% defectuosas	204,80	530,00	108.544,00	204,80	108.544,00										
GS-Calibrate	84,00		31.920,00	80,80	30.704,00										
5% backup	80,00	380,00	30.400,00	80,00	30.400,00	570,00	45.600,00	33%	1%						
1% defectuosas	4,00	380,00	1.520,00	4,00	1.520,00										
	0,80	380,00	304,00	0,80	304,00						304,00		138.982,40		
			5.470.869,33												
	27.354,35														
	5.470.869,33														

	Customers per gyms	gyms	Gymshou	GS- Monitor	GS- Receptor	GS- Calibrate
year1	1000	20	20000	160	640	20
year2	1000	50	50000	400	1600	50
year3	1000	80	80000	640	2560	80

Product cost	year1	year2	year3
Gymshou	2	2	2
GS-Monitor	3614	3604	3604
GS-Receptor	540	530	530
GS-Calibrate	380	380	380

*2 and 3 cost less
because our software

Price	year1	year2	year3
Gymshou	40	36	36
GS-Monitor	5782,4	5766,4	5766,4
GS-Receptor	810	795	795
GS-Calibrate	570	570	570

Maintenance

Payment per year	gyms year1	gyms year2	gyms year3	Manten.1	Manten.2	Manten.3
1000	20	70	150	20000	70000	150000

XI.3.4. Money invested, credit and contributions

		How much is payable		
		año1	año2	año3
Credit	180.000,0		90.000,0	90.000,0
Interest	4%			
returns		7200	3600	3600

DATA	
Members	6
Contribute Money	5
Money per member	128.500,0
Total cash Money	642.500,0
Member provides property	900.000,0
TOTAL scriptures capital	1.542.500,0

Grants, donations and legacies received 125.000,0
 *grant from the National Natural Science Foundation of China

TOTAL FUNDS 1.722.500,0

Annex XII: Financial agencies R & D



The National Natural Science Foundation of China (NSFC) is an organization directly affiliated to the State Council for the management of the National Natural Science Fund.

1. In accordance with the guiding principles, policies and plans for the development of science and technology in China and by adopting the operating mechanisms for the National Natural Science Fund which conform to the socialism market economic system, NSFC supports basic research and some of applied research, identifies and fosters talented researchers in the realm of science and technology, accelerates the progress of science and technology, and promotes the socioeconomic development in China by giving full play the guidance and coordinating role of the National Natural Science Fund from the central government

2. NSFC is in charge of the management of the National Natural Science Fund. It compiles and promulgates the annual Guide to Programs for basic research and some of applied research, handles applications of research projects, and organizes peer review and select the best projects to support. It endeavors to create an academic environment conducive to innovation.

3. NSFC cooperates with the Ministry of Science and Technology to formulate the principles, policies and plans for the development of basic research in China. When entrusted, it provides consultation and undertakes related assignments on major issues for the development of high technology and applied research in China.

4. NSFC gives help and support to other Chinese foundations in natural sciences.

5. NSFC establishes contacts with governmental departments in charge of science and technology, science foundations and related academic organizations in other countries and carries out international cooperation and exchange.

6. NSFC is responsible for the administration, supervision and guidance of the subordinated bodies.

7. NSFC undertakes other tasks entrusted by the State Council and the State Leading Group for Science and Technology and Education.



The purpose of **Beijing Natural Science Foundation** is, according to scientific, economic and social demands of Beijing, to strengthen and develop fundamental research, find and culture talents so as to promote the development of science and technology and sustain the development of capital economy and society.

Its main tasks are, according to national policies for development of science and technology: integrate the demand of capital economy and development of science and technology, work

out and issue project guide; use natural scientific fund effectively, guide and coordinate fundamental research of Beijing; organize and propel key research projects; promote the transformation from research achievements into practices; let young qualified researchers assume projects and accelerate the growth of scientific teams; organize and propel corresponding international cooperation and academic exchange.

It adopts the mechanism of science fund, namely, to combine free application with directional guide, evaluation among colleagues, fair competition, optimal selection and auxiliary “guide”, select subjects strictly, stand out emphases and trace achievements.

Annex XIII: Join Venture in China

There are two types of joint venture: the equity joint venture (EJV) and contractual joint venture (CJV). Both companies require the drafting and agreement of a joint venture agreement between the foreign partner and the Chinese partner, specifying in detail the responsibilities, rights and interests of each partner. While the EJV defines this division according to the coefficient of shareholding of each one, the division in a CJV is a decision of the members.

XIII.1. Equity Joint Venture (EJV)

The EJVs are regulated by Chinese laws of equity joint ventures consisting in Chinese and foreign capital. They were enacted for the first time in 1979, when the first law on foreign investment was passed, and therefore the first links employed by foreign investors. The EJVs must necessarily be constituted as limited liability companies with a "legal personality", independent of their partners, limiting the liability of the same to their contributions to Social Capital of the EJV.

Investors should pay up Social Capital in proportion agreed between them and the contract of the EJV. China's EJVs law requires that the foreign partner contributes 25% of the capital of the company to be classified as foreign owned enterprises and can enjoy tax advantages. There is usually a ceiling for the contributions of foreign partners except when the Chinese law requires that the Chinese partner has a majority participation (eg. For industries "restricted"). The Companies Act restricts the capital of the Chinese partner to 50% of its own value of net asset. Benefits are distributed in proportion to their participation in the company.

Normally, the Chinese partner will provide capital, property rights and land use rights, while the foreign partner usually provides capital, materials, technology, equipment and machinery. The Chinese authorities must give prior approval to all contributions, and then the certificates must be included in a report issued by a firm of chartered accountants registered in China.

The EJVs have a management system at two levels:

- The Board of Directors, with a minimum of three members, is the supreme body for decision-making in an EJV, able to take all important decisions which could affect the joint venture shareholding. The partners of the company appoint the board members and the representation should be in proportion to the percentage of shares of each shareholder of the company. According to the law of EJVs, either party may elect the President, acting as legal representative of the company.
- The General Director or Chief Executive Officer is responsible for daily management. The Assistant Director General (ADG) system means that, if a party will designate the charge of the General Director, the other party will be entitled to appoint the Deputy Director General, who acts as reviewer of the performance of the Director General.

The EJVs are structured by a process similar to WFOEs. Normally, foreign investors may only recover its capital to settle the EJV, if the company is solvent, or if they sell its stake to the Chinese partner or to a third part. The unilateral cancellation of an EJV is not possible.

XIII.2. Contractual joint venture (CJV)

The CJVs are regulated by the Chinese law of contractual joint ventures with Chinese and foreign capital. The CJVs are organized by a contract rather than an equity interest. There are two types:

- Where that a CJV Company takes the form of a Limited Company, that Company shall be owner of all the assets contributed, and the responsibilities of investors are limited to contributions to the Social Capital of it.
- Is also possible constitute an unstructured CJV "new legal personality" different than its investors, making it simply a contractual agreement. In these cases, contributions remain the property of the partners, revenue belong to shareholders and the partners are jointly responsible for their total assets.

In contrast to EJs, members of both types of CJVs enjoy a considerable freedom to negotiate in the contract of CJV their respective rights, obligations, some of the risks and responsibilities, management and ownership of assets to settle the contractual joint venture , etc. In fact, although CJVs were originally created as a legal framework for allow the enterprises operate in China through contracts, attracts foreign investors for other reasons. In particular, because the distribution of benefits do NOT have to be proportional to the contribution of each party:

- The CJVs are attractive to foreign investors who prefer their Chinese partners receive only fixed payments. It is often the practice of many investors from Hong Kong and Taiwan, whose Chinese partners are minority shareholders, who hire their basic business licenses and assets to foreign companies.
- The CJVs are attractive to foreign investors who want to quickly collect the benefits of their investments, but its Chinese partners are reluctant to transfer the long-term control. By this structure, at the beginning the foreign company would have a controlling interest in the CJV, and gradually the control would be transferred to the Chinese partner when the CJV has profitability.

The CJVs that operate as limited liability companies have a management system at two levels:

- The Board of Directors, with a minimum of three members, is the supreme body for decision-making in the CJV, with power to take all important decisions which could affect the company. The members appoint the board members but unlike an EJV, the representation of the Governing Council should not be proportional to the percentage of shares of each party in the company. The Chairman of the Board acts as legal representative of the CJV.

- The General Director is responsible for the daily management and there is no system of "Deputy Director General" as in the EJV.

For CJVs without "legal personality" independent, usually is appointed a Joint Management Committee rather than a Board of Directors. The Chief of Joint Management Committee is the legal representative of the CJV. It is better supplement the regulatory scope by consent than the Chief of Joint Management Committee represents the investors.

For both types of joint venture, the CJV is created after the negotiation of the terms of a contract between foreign and Chinese investors, and the approval thereof by the competent authority. Unlike the EJVs, foreign companies can recover and repatriate their capital before the liquidation of the CJV, with preferential distribution of profits or products, for example, provided than the Chinese partner receives all the assets at the time of cancellation of the CJV, in principle, when is received the approval of financial and tax authorities. Unilateral termination of a CJV is possible in case of breach of contract.

China authorities usually prefer the establishment of EJV and not CJV, so generally is necessary to justify objective reasons relating to the business model to opt for this model. In case of conflict, since this type of structure is not as common as the EJV, which has a varied case mix and references that may use the courts, the legal risk is higher for the foreign company.

The decision to joint venture which model is best suited for each case thus becomes one of the decisions leading investment of strategy for a foreign company.

In *Annex X* we present a table which collects all information of a contractual joint venture.

XIII.3. Advantages and disadvantages in a joint venture

When analyzing investment vehicles, foreign investors should consider the advantages and disadvantages of having a Chinese partner. This analysis of pros and cons that takes place in any process of setting up joint venture in the West, is particularly important in China. Unlike other countries, undo the wrong road taken is a really expensive process in China (from the standpoint of legal, financial, tax and market).

The advantages of having a Chinese partner focus on the support it can provide to foreign companies who do not know how to work in China. This support may include obtaining official permits, the selection of personnel, procurement of raw materials, land acquisition and production facilities, as well as access to marketing and distribution channels.

After defining the issues that the Chinese partner provides to the foreign firm is recommended consider the following question: How many of these benefits could be obtained through recruitment? Are these alternative benefits and at what price?

Thus, it is a common case the fact of invest in China with a local partner that has access marketing and distribution channels already in existence and constituted. The risks of an upfront investment of foreign investors is greatly reduced, particularly in business transactions

which are largely based on personal relations or administrative. However, it should be noted that some foreign investors have been disappointed to see that the promises of its Chinese partners in the joint venture were just exaggerations. In these cases, the joint venture has been forced to hire a local manager at a high price to fill this gap by the partner. Therefore, we recommend a careful evaluation before choosing a partner.

Often problems with a partner come from the difference between the business cultures of the foreign investor and Chinese, and the resulting divergence between the objectives and expectations for your project. Generally foreign partners seeking a foothold in the Chinese market and are willing to resign great benefits to achieve good market share or reinvest the profits into the company.

By contrast, the Chinese partners are looking for a quick cash to finance their own affairs or pay its debts, as well as an output it receives for its surplus workers. These differences can cause failure of the project at an operational level, as than day to day will be reflected the different views on how to conduct business. Even if the mutual interests coincide, there are frequent battles by the control of the strategy and management.

If considered preferable to work with a Chinese partner, the foreign investor should carefully select the most appropriate. The size, diversity and dynamism of the Chinese market can provide a great potential partner or make it difficult to find. Unless the partners are "perfect partner", the balance between the advantages and disadvantages for foreign investors often depends on the level of control.

JVs advantages compared to WFOEs	Disadvantages JVs against WFOEs
<ul style="list-style-type: none"> • Fewer restrictions on the approval of the project than for WFOEs, therefore is possible in industries "restricted" where WFOEs is not allowed. • The early investment of foreign investors tends to be lower for a JV than for a WFOE, because the JV is shared with a partner. • Partner collaboration on issues such as obtaining government approvals, selection of manpower, raw material sourcing, land acquisition and production facilities, gaining access to distribution channels and marketing, etc. • Thus, there is potential to reduce investment risks early compared with a WFOE, due to the transfer of existing customers and commercial contracts from the joint venture partner. • And there is also potential for joint ventures are operational before WFOEs. • It could be the first step towards the acquisition of the joint venture partner. 	<ul style="list-style-type: none"> • Need to perform a proper pre-audit and evaluation, and then negotiate the contract of the joint venture with a Chinese partner in China. • Risk of an unwanted legacy of the Chinese partner of the venture, as the surplus of workers, poor reputation with previous clients, etc. • No unilateral control of operations, and therefore exist the risk of having problems with the partner and losing control of the joint venture. Furthermore, in the case of an EJV, the partner has veto power over important decisions that require unanimous approval of the council, inhibiting possibly the ability of the EJV to respond to changing market conditions. • Given that joint ventures tend to work well, allows less control of the business culture that a WFOE. • Unlike a WFOE, JV has a greater exposure to risks in terms of IPR violations

Annex XIV: Study of RFID technology

XIV.1. Introduction

The RFID technology is not new, have operated for many years, but recently is when they are having greater and more diverse application sectors. In recent years, RFID technologies have been developed and perfected techniques, currently available to internationally accepted standards for the working frequency bands common to more applications, and the acceptance of government responsible for the allocation of frequencies, they understand that they must release sufficient resources to enable the development of RFID technology, also thinking that the resources (eg frequency bands) must be compatible for the use of international technology, essential to point occurs massive use of the technology considering the globalization of products that exist today.

This evolution of RFID technology has also made progress on the applications derived from its use. If initially the operation was limited to short distances using HF technology, technologically mature, the new standards currently in UHF allow meter readings to several reliable. This increase in read range is for RFID-based solutions a breakthrough in the identification process, especially when compared with the technologies currently used as bar code, which requires direct vision and therefore distance very short between reader and code.

The deployment and implementation of RFID technology is being supported by some of the international distribution companies larger (Wal-Mart, Metro, ...), so adoption is expected global supply chain in the coming years in response to traction effect created by those companies promoting the use of RFID among its suppliers.

Among the most influential factors in the widespread use of RFID include aspects related to security and privacy, the initial costs of deployment, current price of RFID tags and inertia to undertake and manage change processes in many companies. Until recently, the experiences of implementing technology as the main actors were so-called "early adopters", with an innovative profile companies hoping to take advantage of their experience against competitors and gain commercial advantage. From the data collected in recent surveys shows a change in this trend and the number of companies undertaking projects with this technology is growing every year, expecting a significant number of deployments by 2012.

Like any technology that has wide commercial application, for the development of RFID is essential to existence of international standards which reflect the communication protocols and operating modes to achieve a global operation. In turn, being a technology based on radio frequency, you need to control and regulate the radio emission and spectrum use by regulation. The range of frequency bands in which RFID can work in turn has generated a variety of standards and regulations that correspond to each of the possible operating bands.

Although initially RFID systems are being implemented mainly in internal solutions or "closed loop" provides a migration to a situation of "open loop" where independent information systems share information through secure network services in both access control and

integrity data, thus providing full functionality to the applications of RFID technology and thereby promoting its implementation in all enterprises.

XIV.2. What is RFID and how it works?

The technology of radio frequency identification, known by its English acronym RFID (Radio Frequency Identification) technology is not new, has been living among us for many years, though recently that has taken on increased importance and presence especially due to technological development (miniaturization) and the decline of the manufacturing costs of electronic components, factors that are allowing this to guide the use of identification technology to sectors as wide as the logistics and supply chain, among others. RFID technology was first used in World War II by the British navy, to identify friendly aircraft. Today we can find systems that use RFID technology in a variety of services in civil and military, public and private, such as the identification of patients in hospitals, highways automatic payment, animal identification, etc.

In an RFID system to identify the element (can be an object, animal or person) is labeled with a small silicon chip attached to a radio frequency antenna (known as 'tag' or label) so you can communicate and be identified through radio waves by a transmitter / receiver (known as 'reader') designed for that purpose. The main feature that provides this system to identify high value added, is that the RFID chip can store inside identifiable information that gives each of the elements labeled by a single character.

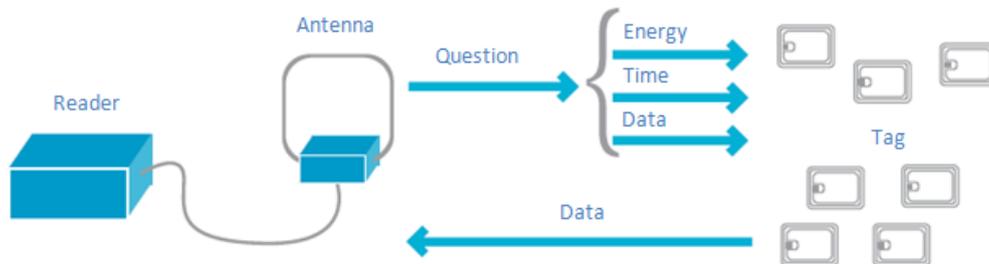
The physical basis in which RFID technology is based, involving the emergence of several models of communication between the basic system devices. The radio frequency communication requires the integration of a RF antenna in each of the devices involved in communication whose form and features depends on the frequency band in which to work.

The following frequency bands are used by different RFID systems currently on the market:

Frequency Band	Description	Range
125 kHz – 134 KHz	LF (Low Frequency)	Up to 45 cm.
13,553MHz – 13,567 MHz	HF (High Frequency)	1 to 3 m.
400 MHz – 1000 MHz	UHF (Ultra High Frequency)	3 to 10 m.
2,45 GHz – 5,4 GHz	Microwave	More than 10 m.

Each of these frequency bands has specific characteristics that confer differential elements to the RFID device functionality, so choose the working frequency is fundamental to design an RFID solution. Depending on the functional requirements of the final application may require the automatic identification or not, a greater or lesser distance of identification, generating the lowest possible radio interference, signal stability against harsh environments or high ability to penetrate materials . Depending on the requirements and will select the frequency of the system.

The basic components of an RFID system are: tag, reader, antenna, RF and information management system. An RFID system is not complete if it lacks any of these four elements. The mode of operation of a basic RFID system consists of identifying objects automatically located and labeled. Within this final goal, each of the components of the system has its particular function that allows, in sequence, is carried out the identification process.



General scheme of operation of an RFID system

a) The RFID tag or label, or electronic field of the transponder, is the star component of the RFID system. Device is called a "transponder" for its basic operation mode, is capable of receiving and transmitting signals, but only transmitted as a response to any request for a device "transceiver" or RFID reader. The tag is a small chip, or integrated circuit, an antenna adapted to radio frequency (RF) that enables communication via radio. These two elements integrated on a substrate, forming what is called a tag. Depending on the final application of the identification system, the substrate which encapsulates the chip and RF antenna will be different allowing the adaptation of its characteristics to application requirements, for example, there are special tags for textiles, liquids, metals, books, etc.

b) The tags are manufactured in a wide variety of formats. The basic process of assembly consists of a first base substrate materials (paper, PVC, PET, etc.), upon it an antenna made of different conductive materials, like aluminum, copper, etc. Then the tag chip is connected to the antenna.

Finally, is coated with a protective layer made in different types of materials such as PVC laminate, epoxy or adhesive paper, according to requirements that are needed by different final conditions of the environment.

The tags have different features or capabilities, so you can make multiple classifications to help us understand how they affect your behavior or way of working. Tags can be classified by type (active, passive and semi-active), by type of memory, storage capacity, power source, frequencies, physical characteristics, air interface protocol (how your computer communicates with the reader) and so on almost all the features. Sort tags by all these features allows us to obtain a guide to finding the best type of tag for each of the applications or projects. The choice of label or "tag" right is a key factor to ensure successful implementation of RFID and its contribution to production processes.

There are many basic features that can modify the behavior of an RFID tag, some common to all tags (minimum requirements that all must play) and others found only as a model.

- Accession Tag: any tag must have an adhesive or mechanical mechanism to attach to the object.
- Reading Tag: Any tag must be able to communicate information using radio waves.
- Kill / Disable (disqualification): Some tags allow the reader to send a command (order) to stop working permanently, provided they receive the proper "Kill code." This causes not respond anymore.
- Write Once (Write Once): A lot of tags identifying them enter into the actual manufacture, but those containing writeonce feature allows the user to configure or write its value only once, after the initial change, it is impossible to change .
- Write many (many scripts): Some tags have the ability to write and rewrite many times as you want (there is usually a very high limit cycles, ie 100,000 writes) the data field of the identifier.
- Avoid Collision: When many tags next to a reader, it can be difficult to "talk" or communicate with them at once. The collision avoidance feature allows the tag to know when to transmit so as not to hinder or disturb other readings. This feature is performed using protocols that control communication between tag and reader.
- Security and encryption: Some tags encrypt the data in communication, there is a possibility in several types of these tags to respond only to readers who provided a secret password.
- Supported standards (conformity): The tags can meet one or more standards, allowing readers to communicate with the meeting.

RFID tags can take many shapes and sizes depending on the environment where it is used, this feature adaptation provides a high range of tags. Furthermore, these tags can be encapsulated in different types of material. There are tags that are encapsulated in plastic (usually PVC), and buttons for durability, especially in closed-loop applications where you have to reuse or in hostile environments. If, however, the ultimate goal is to identify objects such as boxes or pallets in and out of a store, the most common solution is to use a plastic substrate as a label that adheres to the surface of the object to be identified.

They can also be embedded in plastic cards such as credit card, this type is called "contactless smart cards, or sheets of paper (similar to bar codes), which are called" smart labels ". Finally, we stress the glass or ceramic encapsulated particularly suitable in corrosive environments, liquid and to enhance the security of the tag, for example, use in animal traceability. If the ultimate goal of implementation is the identification of animals, often used the method of inserting the tag under the skin of the animal or in the stomach. To make this possible, the chip and antenna are encapsulated in non-toxic substrates as a capsule or ruminal bolus. Between these two extremes, there are other applications such as automobile security keys, cards or access control to restricted areas and / or buildings.



Examples of tags in different shapes and sizes.



Examples of RFID label printers

Another important feature to consider when choosing tags for a particular application is the power mode. This feature is one of the main factors that determines the cost and life of the tag. Passive tags obtain the transmission power of the reader, using a battery very active and semi active or semi passive use a battery to activate the chip circuitry to generate power but communication is the collecting of radio waves reader (as in liabilities).

The most common are passive tags, allowing the transponder device to work without its own power supply, making it cheaper, smaller, and with an unlimited life cycle. A disadvantage is the dependence on the electromagnetic field generated by the reader device and therefore the distance limitation for identification. Semipassive tags have their own battery, allowing you to increase the distance of identification, but still depend on the signal from the reader device, as the need to generate the response signal. In this case, the life cycle of the tag appears limited by the life of your battery. The most extreme case is that of active tags. They have their own battery and its own transmitter, making them completely independent of the signal transmitted by the reader device. The range of identification is greatly increased compared to passive tags. The life cycle is limited to the life cycle of their own batería. Otra important feature to consider when selecting tags for a particular application is the power mode. This feature is one of the main factors that determines the cost and life of the tag. Passive tags obtain the transmission power of the reader, using a battery very active and semi active or semi passive use a battery to activate the chip circuitry to generate power but communication is the collecting of radio waves reader (as in liabilities).

Here you can see a comparison table between the two extremes, passive tags and active tags:

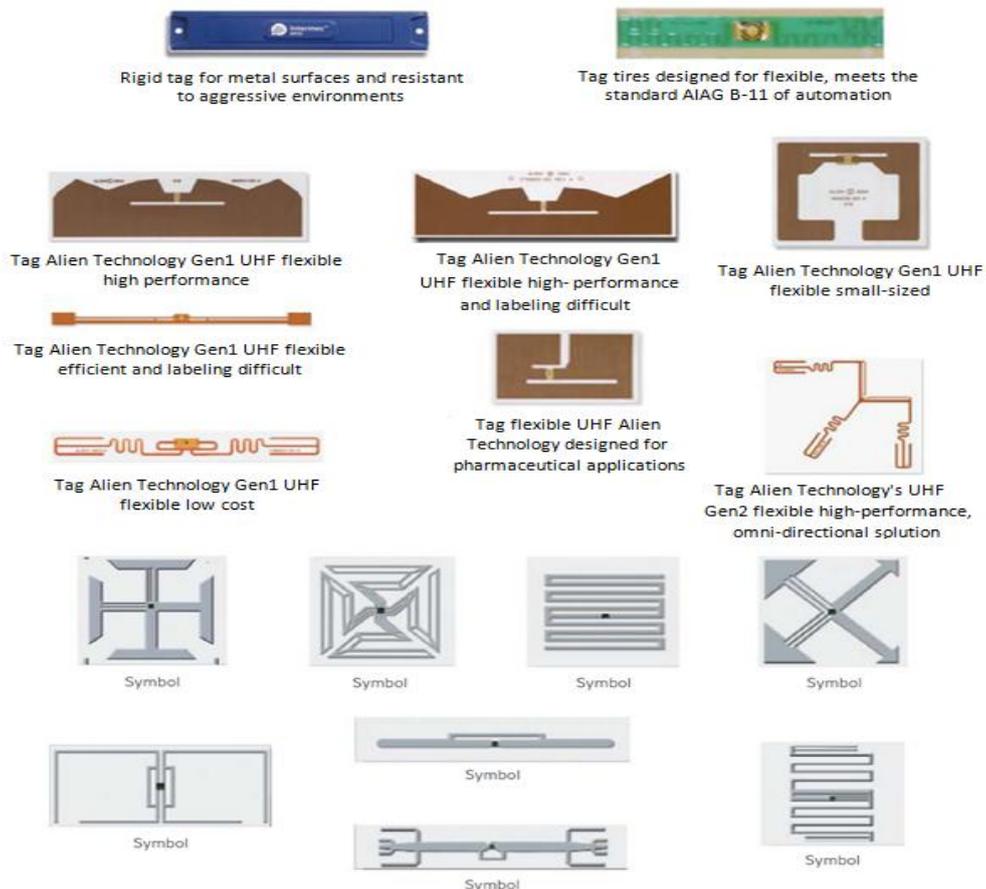
Tag Pasivo	Tag Activo
Funciona sin batería	Funciona con batería
Relativamente económico	Relativamente costoso
Ciclo de vida ilimitado	Ciclo de vida limitado por la batería
Poco peso	Mayor peso
Alcance limitado (3-5m)	Mayor alcance (100 m)
Sensible al ruido	Mayor inmunidad ante presencia de ruido
Dependencia de la señal del dispositivo lector	Transmisor propio
Requiere dispositivos lectores potentes	Relaja el requisito de potencia de los lectores
Velocidad de transmisión baja	Lectura simultánea alta
Alta sensibilidad de orientación	Menor sensibilidad de orientación

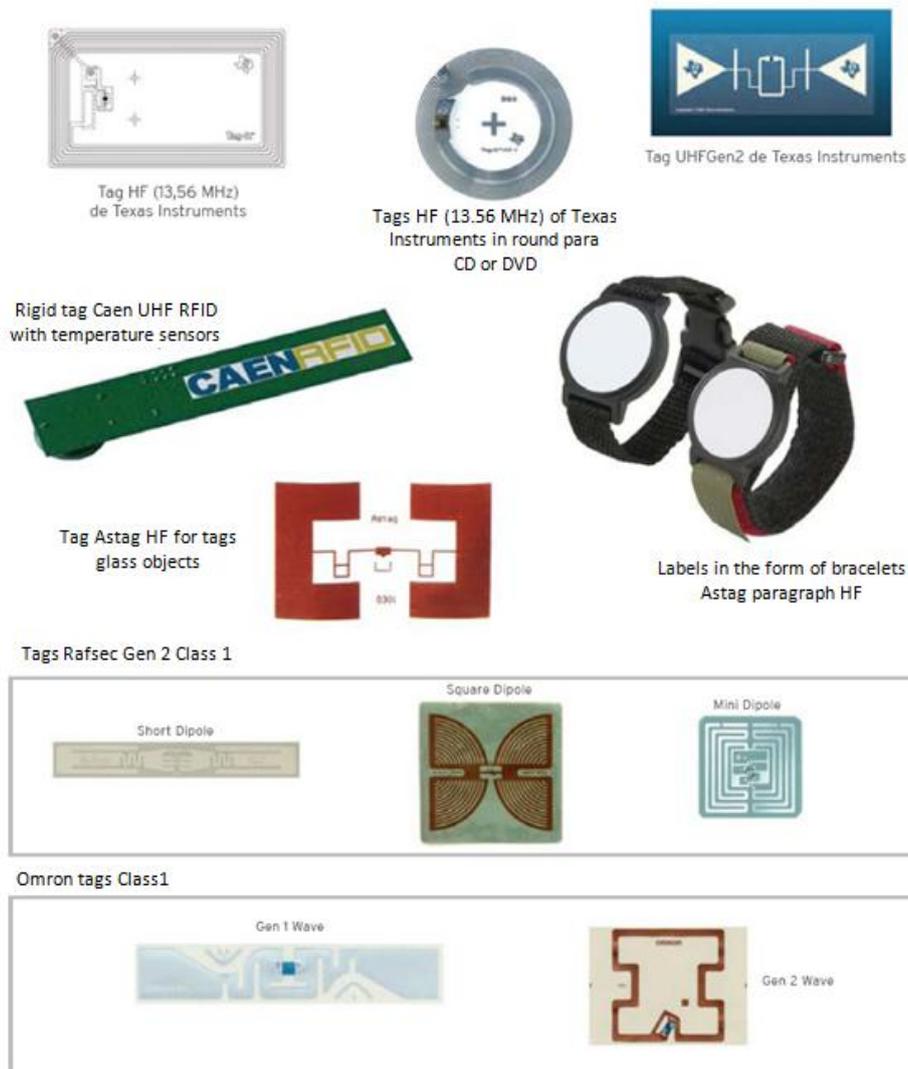
Comparison between characteristics of passive and active tags

The storage capacity and processing power are also important when choosing the value of the tag, plus the other features described above. The RFID tags on the market allow us to choose a wide variety of capacities. From the simplest with just a bit of storage (used for anti-shoplifting solutions) to kilobytes of data to store identifiers and data.

Finally we show some examples of tags from different manufacturers, with different shapes and sizes, and application-specific features:

Examples of tags of different manufacturers





b) The reader device, or electronic field "transceiver", acts as a transmitting station identification request signals to the tags and receiving the answers to these requests.

Is a receiver / radio transmitter, which also includes the sub-transmission and reception, a digital signal processor that gives it greater functionality and complexity in their operations. A reader, will need one or more RF antennas to transmit and receive signal generated tag response.

It may find readers with integrated RF antenna on its own hardware and readers with external RF antenna connectors. Depending on the scope of the final application will need to have a configuration or another.

For the identification of animals or patients in a hospital, the most common is to have hand-reading devices, PDAs, in which the antenna appears integrated into the reader. In the case of a distribution center or warehouse, in which the identification is located in a passageway or

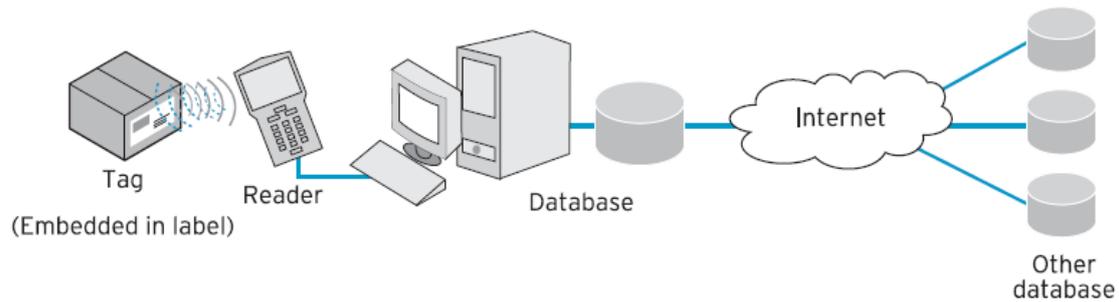
monitoring, reading devices are used with various external antennas that enable an arc setting of identification, delimiting a given area of reading.

The functionality and / or computational complexity and operations of a reading device is fully proportional to the size of the hardware. Processing power, memory and speed requires additional hardware and therefore the device size is increasing. Readers can find everything from the size of a PCMCIA card for connection to a PDA, to readers rugged for harsh environments that require physical protection, increased reading speed and multiplexing between antennas and processing information, whose size increases considerably compared to the first. Similar to the case of the antennas of the tags, the RF antenna connected to the device reader, vary in shape and size according to the operating frequency of the system. The figure below shows some readers from the above example.



Examples of RFID readers from different manufacturers

c) The database is a platform for additional software that stores, in an organized manner, the identification information generated by the hardware subsystem (tag and reader). Without this software subsystem, a client application would be unable to manage the information generated by a reader. Prior to this step, you need to store the identification information in a common format so that any client application, a higher level, be able to work and access to this information. Between the database and the reader device interface middleware is needed to run a pre-treatment of raw data generated by the reader. As mentioned above, the reader device itself has an intelligent processing unit, depending on the complexity of its design, implement this interface in the reader. In other cases you will need the external design of the middleware interface. The chart below shows the idea of a basic RFID system.



Schematic of a basic RFID system

Today it is easy to meet RFID systems at both daily and professional and industrial. Some examples of applications in the everyday are the keys to immobilize vehicles with RFID chips that contain authentication codes low frequency (LF), or automatic payment highway assets using UHF tags.

In the professional field the most common applications today are identifying animals through subcutaneous or bowling ruminal chips working in low frequency (LF) according to ISO 11784 and ISO 11785, the identification of individuals in controlled environments such as access to buildings or restricted areas through HF RFID chips under the ISO 14443 standard, control theft by EAS (Electronic Article Surveillance) working in the medium frequency band (7.4 to 8.8 MHz), uncommon in RFID applications The identification and baggage control at airports by UHF tags (860 - 960 MHz) or even the identification of patients in hospitals using HF (13.56 MHz ISO 15693).

In industry, a major application that is oriented toward the UHF band RFID is the visibility¹ and management of the supply chain, from manufacture to point of sale, as well as to the quality control, automation and reduce production times and costs, and detection of forgeries. This will work on the design of equipment and appropriate tags for tracking items, cases or pallets and has created a global standard EPCglobal Class1 Generation 2 EPC also adopted as international standard ISO 18000-6C. This standard is intended to be technology independent, ie, defines the data structure to encode and the various features of the system without determining the frequency.

It has now been concluded that for identifying cases and pallets is essential use UHF, but is still under study the optimal frequency of work to label the final article.

On the other hand, thinking in a futuristic vision with the development of NFC (Near Field Communication) (www.nfcforum.org) appear increasingly mobile phones equipped with RFID modules that allow you to make purchases or download information through RFID links. Other applications such glimpses are RFID-enabled appliances that enable more efficient and easy for the user, for example helping to identify obsolete items in the fridge, identify delicate clothes in the washing machine or automatic programming of adequate temperature the type of tissue

¹ In this context, the concept of "visibility" is used to indicate the possibility of accessing data in real time to know at all times the status of the products that move through the supply chain. The easier it is to have that information, the greater the visibility of the supply chain.

iron. All these applications are contemplated within the framework of what has been called "Internet of Things", a concept that is reviewed in more detail later.

The following table shows the main characteristics and application examples of different RFID systems according to the frequency band in which they work:

Frequency band	System Features	Application Examples
LF (100 to 500 kHz). Typical 125 to 134 kHz. International	Short range. Low-speed transmission. Relatively inexpensive. Great insight into the materials (liquids). Works well with metal.	Access Control. Animal identification. Inventory control. EAS (theft). Car keys.
HF. 13.56 MHz typical International	Short / medium range. Average transmission rate. You can read through liquids and in humid environments. Problem with metals. Moderately expensive. Ability to act as a reader or tag depending on the scenario of use (NFC).	Access Control. Smart cards. EAS (theft). Inventory in libraries. Warehouse management. Baggage screening. Laundry management. Patient identification. Payment with mobile data capture and bring only phone (NFC).
UHF (400 to 1000 MHz) 850-950 MHz typical	Long Range High speed transmission. Avoidance mechanisms. Problem with liquids and metals. Problematic in humid environments. Metal generates interference. Moderadamente caro.	Item management. Managing the supply chain. Warehouse management. Management expeditions. Traceability.
Microwave (from 2.4 to 6 GHz)	Medium range. Characteristics similar to those tags. UHF but with higher transmission speeds. Higher price.	Railway control. Motorway tolls. Location.

Main features and application examples of the different frequency bands used in RFID

XIV.3. What use is RFID

We will study the utility of RFID technology by comparing the benefits against other equivalent technologies:

Large capacity storage of information.
Streamlines and automates the mechanisms needed to maintain traceability allowing incorporate more information to it.
The information stored in the tag can be updated on demand.
Ability to gather information from many labels at the same time.
Collection of data without direct contact or direct line of sight of the cloud.
Increased reading speed and distance.
Greater precision in data recovery.
In the case of passive tags, easy to hide and place them into products.
Safe operation in aggressive conditions (dirt, dust, humidity, temperature).
Enables process automation monitoring and control of stock in real time.
The process automaticación a reduction of human error.

Main benefits of RFID technology

XIV.3.1. Benefits in the supply chain

There are many industries that can benefit from the advantages of radio frequency identification technology (RFID). These benefits stem mainly from the optimization and automation of management processes in the supply chain.

Some examples to note are:

- Reduction of inventories as a result of better visibility of stock. Allows you to perform traceability and visibility throughout the chain of production and delivery, greater reliability and agility that today's systems, helping companies to take inventory planning policies best suited to actual needs .
- Improved level of service. Thanks to better control in delivery of customer orders, we can ensure traceability of orders much more reliable, resulting in reduced errors and therefore returns, resulting in administrative cost savings and increased sales .
- Improved efficiency and reduced operational costs and labor. Not being required to match the visual line the drive and the chip, as it does with the bar code, you can resort to using fixed reading arches similar to those found in stores to prevent shoplifting. Thus, in the stores, the logistics management processes will be simplified greatly being not necessary scan operations to identify the products in each of the stages through which pass (production, finished product warehouse, distribution center, picking, shipping Reception at the point of sale, etc.).
- Accurate identification of goods. As the collection of information is not dependent on manual operations, is able to increase significantly the safety and accuracy in the process of high and low inventories.
- Reduced shrink by external theft, internal, administrative errors, as a result of the improvements mentioned above.

- Better use of reusable assets of the company (returnable packaging, pallets, loading trucks, etc.).
- Anti-counterfeit products. The unique identification of products and the accessibility of such data through the Internet makes it much easier to control the shipping product.
- Facilitate and safer removal of concrete products market in the case of discovery of the existence of a threat to the safety and health of consumers.

In general, through the identification (RFID) provides a noticeable improvement in the mechanisms for tracking shipments through global distribution channels, allowing both suppliers and distributors and customers, to have real information on the number product and delivery dates. It also allows to detect the phases of the process which produces a high rate of shrinkage, slow downs, etc., In order to alleviate bottlenecks and reduce significantly the lack of products in stores.

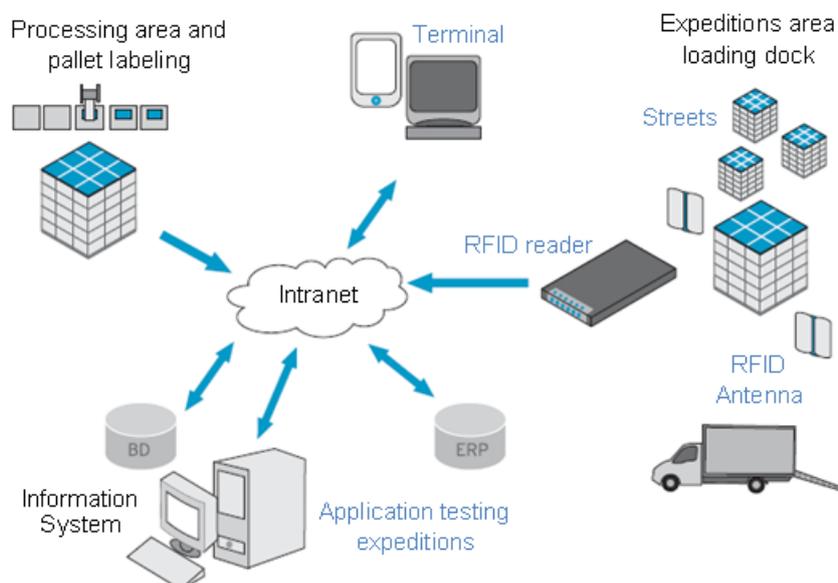
XIV.3.2. Main applications

The following describes in detail some of the most common today and which detects a greater benefit from the application of RFID technology.

Expeditions Management

RFID tagging of the final products either at the item level, case or pallet, can more efficiently address the management of shipments, automating the processes associated with the output of products and making sure that each order is served with the correct items. In the figure below details the typical architecture of a management system shipments.

Architecture in the management of shipments



The products (item, case or pallet) are labeled at the end of the production process with RFID tags which contain information provided by the information system of the company. Once the products enter into the cargo area can be checked automatically to match the appropriate delivery order, all with a substantial reduction of human intervention in this verification process, and may also generate the appropriate instructions expedition staff in case of need for intervention with the aim of preventing failed expeditions leave the premises, thus drastically reducing the costs associated with repairing them.



Example of RFID application in dairy products issue

Intelligent Storage Management

The automation of storage management by using RFID technology involves a substantial improvement in the whole process based on the reduction of time and optimizing inventory stocks, which makes easy the production decisions to meet the needs real. In this way you can achieve significant savings in storage space.

Typical components of the RFID warehouse management are:

- Post-labeling to identify products that are not source tagging.
- Mobile terminals for identifying products with wireless connectivity to the central information system.
- Fixed portals for reading RFID tags located in the areas of entry and exit of products.

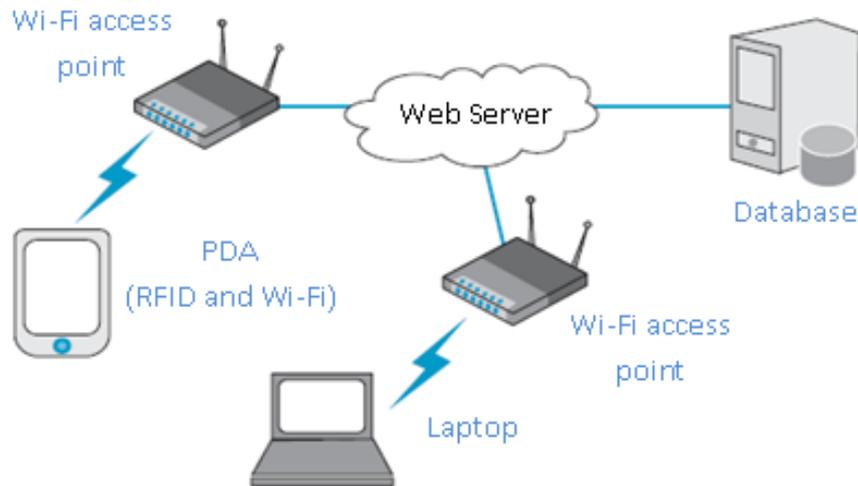
A typical system has mobile RFID reading devices, which are responsible for identifying and verifying the correct location and condition of the goods stored, comparing the information with the relevant database information system and update it if necessary.

The features and capabilities which look greatly enhanced by the application of RFID technology are:

- Identification of products.
- Identification of location.
- Location Management.
- Inventory management.

- Selective Localization of the product.
- Dynamic management of stock and exchange of information with suppliers and customers.

Inventory Management System based on RFID



General outline of the system RFID inventory management

Product Management Reception

The reception of raw materials or intermediate products from different vendors is one of the common processes in all industries. During the reception, there is to check that the goods received respects the purchase orders issued to validate each delivery.



- EAN-13 Version
- 13 Numeric
- GTIN-13 and Select Applications
- Omnidirectional (for Point-of-Sale)

Example of EAN-13 encoding

The progressive adoption of identification systems based on bar codes according to coding standards such as EAN-13, GS1-128, ITF-14, etc. Has allowed some level of automation of the processes of reception while maintaining a high need for human intervention in it.



Data Matrix coding example.

- GS1 DataMatrix (version ECC 200)
- 3116 Numeric capacity
- 2335 Alphanumerics capacity
- Carries Application Identifiers
- Unique GS1 Identifier
- Camer-based (imaging) scanners only

Currently dimensional bar code is still valid as a majority in the coding of pallets, boxes and individual products. Due to the limitations of in terms of information content that can be registered in the code, is necessary to use systems that provide increased information, appearing for instance new bar code called "dimensional" higher capacity.

However, the incorporation of these systems does not provide solutions to a number of difficulties (the need for direct line of sight for reading, reliability, etc.) to increase the automation level of the receiving process, the use of RFID technology solves these difficulties by allowing the increased level of automation of this process. Clearly, in this case the potential for deployment of RFID technology in the receiving process are conditioned by the RFID tagging of products at source.

Services traceability in the supply chain

The above applications are focused on internal processes within companies or in some cases involving clients or immediate recipients of production, however, the supply chain is an open system and distributed geographically that involves a lot of companies. This diversity reinforces the need for standards adoption, to share information along the supply chain so as to bring greater efficiency to the process and can fulfill the law.

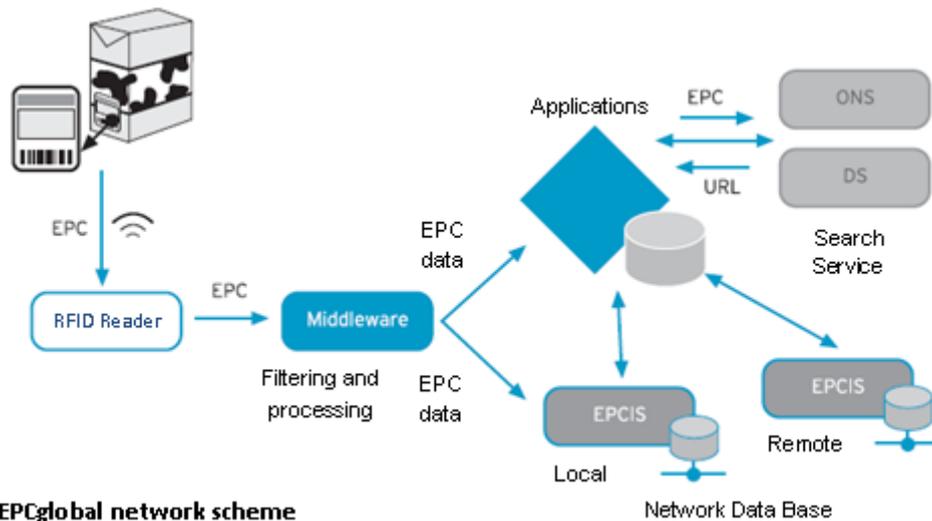
The gamble of using RFID technology to improve the traceability requirements, is based on EPCglobal's proposal to encode each object using the EPC code (Electronic Product Code) and encourage the exchange of information between information systems of different companies information service using the EPCIS (EPC Information Services) that records every observation of an object and encoded (and tagged with an RFID tag). In this way, and using other network services such as ONS (On Naming Service) and Service² Discovery tools available to improve product visibility.

²The ONS standard is ratified, but not the Discovery Services although prototypes exist at R & D as is put forward in the BRIDGE project of the 6 th Research Framework Program funded by the European Union.

EPCglobal is a non-profit, neutral and almost 1,200 members signed. Its mission is to develop and implement a system of global standards (open and free) that combine RFID, communications networks, and the EPC (Electronic Product Code, a unique number that identifies each item), with the aim of:

- Ensure interoperability between systems used by different companies that make up the supply chain.
- Allow the identification and traceability of an item throughout the supply chain.

The standards developed by EPCglobal are focused on the implementation of the EPCglobal Network, whose objective, as mentioned, is to improve efficiency and visibility of the supply chain. This network will provide a secure connection between servers containing information related to articles or items identified by EPC and will reveal information on their movements throughout the supply chain.



EPCglobal network scheme

The EPCglobal Network consists of six elements:

- 1. Tags.** The tags have an RFID chip which stores the Electronic Product Code (EPC). The EPC is a set of numbers that uniquely identifies unique and each article of the supply chain.
- 2. Readers.** Readers can read the EPC of several items at once, so that the goods passing through its vicinity are activated and identify products that are happening. EPC readers are located at strategic points in the supply chain in order to locate the movements of the articles.
- 3. Custom Software (Middleware).** It is a software layer that isolates the world of physical events in the world of software and business events. Is responsible for managing and filtering the EPC identified by the reader and communicate the information system of the company with the information services of the EPCglobal Network.
- 4. EPC Information System (EPCIS).** Servers that act as local repositories of information and providers of information abroad to share information in the EPCglobal Network.

5. Discovery Service (DS). Are a set of services that allow users to find data related to a specific EPC and to request access to them. Provide a list of links to EPCISs containing information of the movements performed by a particular EPC.

6. Object Name Service (ONS). Service that provides a link to the manufacturer that combines the EPC to one of their products. From this link you can follow the movements of the product by the DS.

Network services support basic transactions as the location information of an object or on tagged item, the identification of an item in the supply chain and product tracking and tracing of products with pedigree. It also has access control and authorization to provide privacy and data protection, limiting who and what data you see and when you a user is allowed to access it.

Each participant in the EPCglobal Network stores information on their EPCs within their EPCIS server. When a user enters the network through its internal management system (ERP³, WMS⁴, ...) and requires certain information about a particular EPC, the network will indicate the EPCIS server that contains this information and provides the user the.

The aim of the Network is that the label only store the EPC product and all other relevant information is contained in the databases of the network. Thus, the information is protected, because only authorized users have access the EPCglobal Network.

The EPC is a standard code for product identification that goes beyond the current barcode. Allows to assign a unique identifier to each item, so that any company in the supply chain, including retailers, can be tracked at the individual product.

Services traceability of production

Many of the production processes used in SMEs are organized into sections of different manufacture. In these cases it is necessary to understand the evolution of products in each of the sections, ensuring that the supply to the following sections in the chain is continuous, minimizing downtime and making production more efficient.

Likewise, in products which are incorporated parts or other products of different batches is necessary to know at all times the source of each of these parties to maintain traceability of the final product.

To achieve the improvement of this process, the products can be identified at the beginning of the chain using RFID tags to facilitate tracking of them in certain points of each of the sections and, thus, can provide information that facilitates process visibility tools provide real-time measurement of processes and ability to react to unexpected delays.

³ ERP: Enterprise Resource Planning, information system for enterprise resource planning.

⁴ WMS: Warehouse Management System, sistema de información para la gestión de almacenes.

The features and capabilities are greatly enhanced by the application of RFID technology in this process are:

- Measure process time in different sections.
- Traceability of products.

Smart Store Management

Another positive aspect of the incorporation of RFID technology is the differentiation that is achieved with respect to competition. The application of RFID technology in this case facilitates the buying process such as making easier the process of collecting items and thus reducing queues at checkouts, providing comprehensive information on products (origin, composition, applications, recommendations, etc.) In addition to best picture in front of end customers, achieves a more pleasant and interactive environment that can improve the degree of their satisfaction. In addition to this direct interaction with customers, RFID technology can be used here to control product inventory available to customers at all times, is well known that the lack of stock situations are one of the main reasons for losses sales. By shelf "smart" equipped with RFID readers can be controlled at all times the amount of product available in store.

Location

There are different RFID technologies for application to the location of people and materials depending on the accuracy required, these systems are called RTLS (Real Time Location System). Basically one can distinguish between passive RFID solutions using (typically UHF) in which the location is performed by area or active RFID systems (based on 2.4 GHz wireless technology or other proprietary systems to 433 MHz), more accurate and that can reach to provide position coordinates of a person or object located within a coverage area.

Identifying people

Although the privacy issue is critical in these applications, exists a large number of people identification solutions, mainly aimed at increasing security.

Some of the most widespread applications in the field below:

- ePassport: In 2000, the International Civil Aviation Organization (ICAO) began evaluating RFID technology in contactless chip and its application in the passport to identify people and prevent theft or impersonation. Finally, the U.S. imposed on all countries VWP⁵ implementation of RFID-based electronic passport before October 26, 2006. It is from these government mandates when it extends the use of RFID technology on a massive scale to identify people in transit from other countries. The adoption of RFID technology along with authentication and encryption techniques in identification documents allow to identify people safely preventing counterfeiting and identity theft.

⁵ VWP: Visa Waiver Program, a program of the U.S. government that allows citizens of certain countries to travel to the United States for tourism or business without obtaining prior approval.

- Identification of clients in facilities (hotels, sports facilities, etc.): Use a card that carries an RFID chip that contains the data of the user of the services of a hotel, health club, gym. you get quick access to services by customers. The card may include data such as photograph, name, surname, ID number, information about the services contracted by the client, set schedules to enjoy them and information if you are aware of the payment of dues. When a client accesses the facilities providing the services, an RFID reader device is responsible for reading the information contained on the card that carries with it and compare it with the one with the database or not giving consent to the use of facilities.
- Identification of patients: One of the applications of personal identification using RFID most used is the patients identification in health centers. One of the key factors for increasing patient safety in hospitals is the correct identification. Adverse events related to misidentification of the patient are a risk to their safety during treatment. To equip healthcare workers a reliable identification tool that helps minimize the risks associated with process-based solutions using RFID technology, with which each patient is uniquely identified and safely, for example by incorporating a bracelet RFID chip that stores patient information.

Safety and health process control

The value of RFID technology excels in the most critical processes, where the need for correct identification of patients and their associated treatments is essential.

It is the most appropriate technology for these applications because of its privacy and security throughout the process. Therefore, it has extended the use of RFID in the HF band as it is in the best position to prevent unwanted readings due to the limited read range of bracelets (10-15 cm), and it not produces interference with other medical equipment due to low power used by readers devices. The combination of HF and UHF technology is also useful in some specific applications.

Some examples of applications for hospital services are listed below.

- Treatments which include application of special medication.
- Surgical Safety circuits.
- Identification and location of patients in the emergency department.



Example of patient identification using RFID bracelets.

Annex XV: R&D of Multinationals in China: Structure, Motivations and Regional Difference⁶

by Kazuyuki Motohash⁷

1. Introduction

During his southern visit in 1992, Deng Xiaoping⁸ called for speeding up economic reform and economic growth in order to bring about a boom in the inflow of FDI. With open door policy for foreign direct investment as well as strong competition among local governments trying to attract foreign capital, the FDI achieved remarkable expansion, raising the amount from US\$4.4 billion (actual amount used) in 1991 to US\$53.5 billion in 2003. Major motivations behind this surge of FDIs include using cheap labor for offshore production facilities and exploiting large market backed by the world largest population. However, at the same time, China started attracting foreign investors as a host of international R&D. Now, Beijing becomes to be a city of international R&D centers, including ones by Intel, Microsoft, Nokia and Siemen.

International R&D can be a natural extension of international production and marketing. Each country has a different taste, and R&D for localization of home market product is an important element of international marketing. Since China is a large developing country with substantial difference in consumer tastes from developed economies, substantial efforts of product localization R&D need to be provided for market penetration. At the same time, the level of scientific research at Chinese university has been improving due to the strong government policy for S&T promotion and high-tech developments. Therefore, there may be some scientific area where multinationals have a good incentive work with Chinese universities as technology sources. Furthermore, China is an attractive country for cheap but high quality S&T human resources. The number of engineering and science students is now greater than that of Japan, and second to the United States, and ample S&T labor supply makes it possible for multinational to hire well qualified Chinese students for reasonable wage.

These motivations for international R&D in China can be broadly categorized into (1) market driven R&D, (2) technology driven R&D and (3) human resource (HRST) driven R&D. In this paper, we analyze R&D activities of multinationals by using a large dataset from Science and Technology Survey conducted by National Bureau of Statistics of PRC. In this dataset, detail variables on S&T activities are available both for foreign owned companies and domestic ones.

⁶ This research is based on research collaboration of Chinese National Bureau of Statistics and RIETI. Authors wish to thank Zhang Weimin, Ma Jingkui, Cha Zhimin, Guan Xiaojing, Xiao Yun and Qian Jinchang for their arrangement of access to firm level data of S&T survey by NBS, as well as supports on setting up datasets and clarifications on data questions. Financial supports are provided by RIETI, and statistical assistances from Toshiyuki Matsuura at RIETI and Yue Ximing at Chinese Academy of Social Science are also acknowledged.

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⁸ Bajo su liderazgo, la República Popular China emprendió las reformas económicas de liberalización de la economía comunista que permitieron a este país alcanzar unas impresionantes cotas de crecimiento económico. Frente a estos éxitos en la economía, Deng ejerció un poder de mercado carácter autoritario, y su papel fue decisivo en la represión violenta de las protestas de la Plaza de Tian'anmen en 1989.)

Therefore, activities at multinationals can be compared with those of domestic firms to understand which motivation among the three above is relevant.

In addition, regional differences of the motivations for international R&D are investigated in this paper. There are three major regions which host substantial amount of FDIs, Beijing, Shanghai and Guangdong. Beijing is a city of scientific sector, where major universities and substantial number of public research institutes are located. Zhongguancun in Haiden district is called China's "silicon valley" as a cluster of scientific institutes and tremendous number of high-tech start-up companies. Shanghai is a large industrial base with manufacturing firms, and S&T activities are mainly conducted by such private sector. Finally, Guangdong province is a world center of electronics components firms. Although there are a few universities and PRIs, a substantial number of multinationals set up a production facility in the "IT factory of the world". Motivations of international R&D must differ substantially by these regional specific factors.

This paper is organized as follows. In next section, the dataset used for this study is explained and descriptive statistics on the differences of R&D activities between foreign owned companies and domestic ones. Then, a section of quantitative analysis on the motivation on R&D by multinationals in China is provided. This is followed by a section for describing regional differences of this motivation, focusing on Beijing, Shanghai and Guangdong, the three major regions for hosting FDIs.

2. Data and Recent trend of international R&D

The dataset used in this paper is based on the Survey on Science and Technology Activities, an annual survey conducted for all large- and medium-sized enterprises (LMEs)⁹ in manufacturing sector, conducted by National Bureau of Statistics (NBS). There are about 22,000 samples for each year from 1998 to 2002.¹⁰ The scope of the survey is quite broad, and in addition to the variables commonly found in regular R&D surveys, such as R&D expenses and staffs, it also covers innovation output variables, such as sales of new products and the number of patent applications. In this survey, some survey items are based on the concept of S&T (Science and Technology), which is broader than that of that of R&D by the Frascati Manual (OECD, 2002).

For example, S&T activities include implementation of R&D results in actual production facilities, which is not covered by the definition of R&D.

The patterns of R&D as well as S&T activities can be compared between foreign owned companies and domestic ones by firm ownership information. In this survey, the ownership structure of firm is categorized into (1) domestically owned, (2) Hong Kong, Macao and Taiwan

⁹ LMEs are defined as firms at or above a certain production capacity threshold. This threshold varies by industry, and is defined in terms of units corresponding to the technical characteristics of each sector, such as 'ton' for chemicals and 'sheets' for textiles. Details of this definition can be found in Huet. al (2004).

¹⁰ In 2000, a census survey of S&T activities was conducted that included small firms (non LMEs) as well; in that survey, the share of S&T spending by LMEs in 2000 was about 67.3% of the total amount spent by all companies. As such, it is reasonable to say that annual data for LMEs is representative of overall S&T activity trends in the Chinese manufacturing sector.

(HKMT) owned and (3) Foreign owned. In addition, further distinctions within each type of ownership are provided. Domestically owned companies can be broken down into state owned, collectively owned, limited partnership, stock holding as well as privately owned. HKMT and foreign owned companies also have subcategories, such as joint ownership with domestic investors and wholly foreign owned companies.

In this paper, HKMT and foreign owned companies are separately compared to so-called privately owned domestic companies, which include limited partnership, stock holding and private companies.¹¹ The reason for excluding state owned and collectively owned enterprises is that their corporate governance mechanism is quite different from the rest of domestic firms as well as HKMT and foreign owned companies. The major motivation of this study is benchmarking R&D activities at multinationals to those of domestic firms. In this process, it is important to pick up comparing domestic samples with similar type of governance mechanism to HKMT and foreign owned companies.

Figure 1 and Figure 2 is the presence of HKMT and foreign owned companies in total output by year and by industry, respectively. We can find a growing share of these types of companies over time and the sum of these two shares becomes over 25% in 2002. However, this share varies substantially across industry, according to Figure 2, showing composition of industrial output by industry in 2002. In 'electronics and electronics' and 'fabricated metals', over 50% of output comes from HKMT or foreign owned companies. In contrast, the shares of them are quite small for 'mining', 'petrochemical', 'primary metals' and 'utilities'.

¹¹ Specifically, privately owned domestic companies include 150 (limited partnership), 160 (stock holding) and 170 (private companies) except for 151 (wholly state owned limited partnership) and 171 (individually owned private firm) by the ownership code of S&T Survey.

Figure 1: The output share of foreign and HKMT owned enterprises

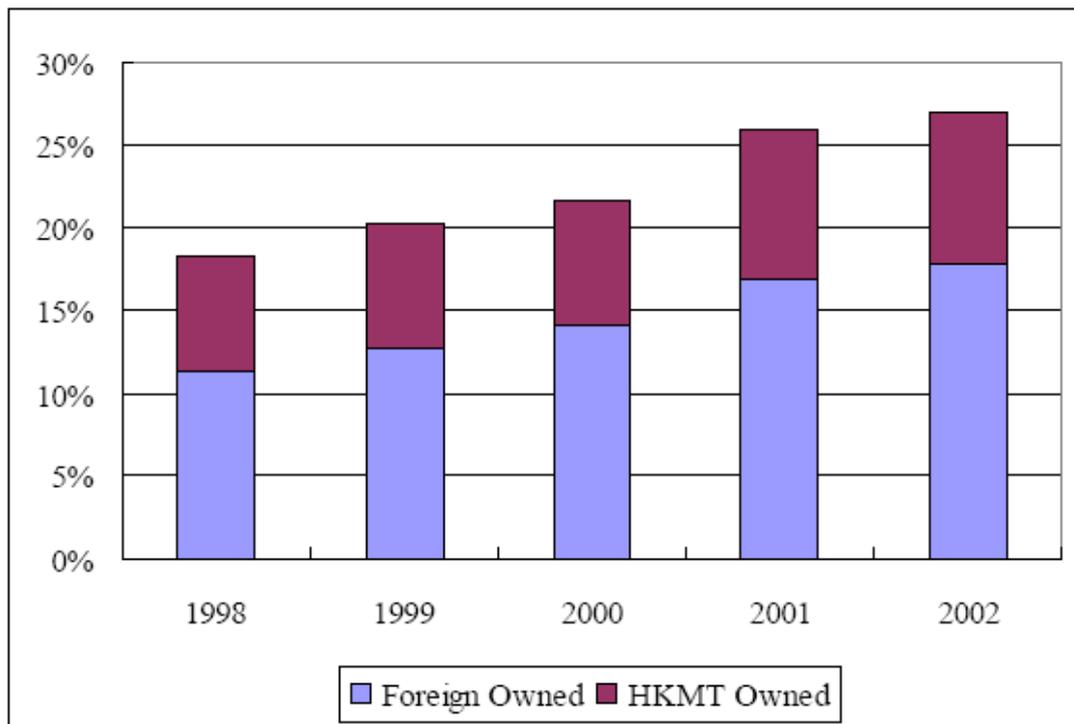


Figure 2: The output share by industry

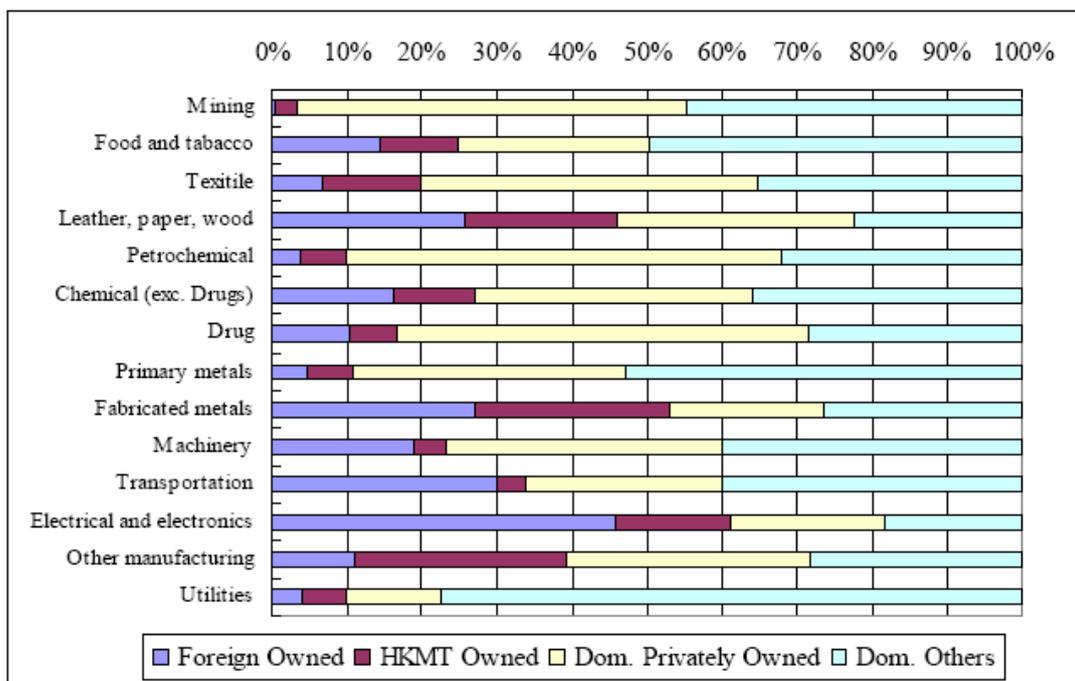
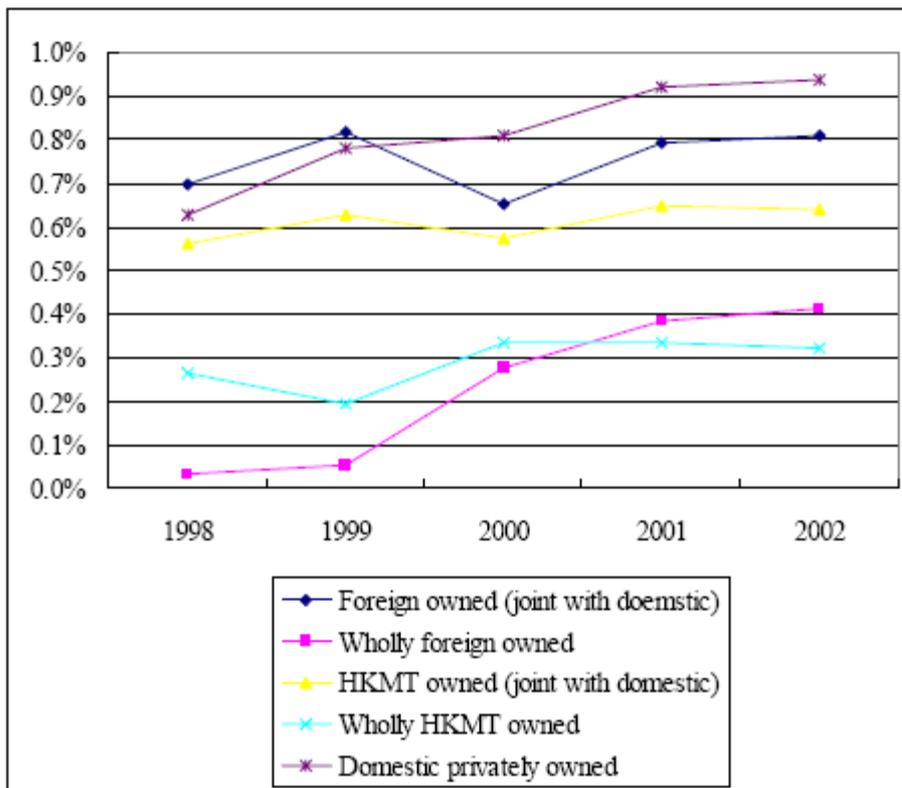


Figure 3 shows the ratio of R&D to total sales by type of firm ownership. Foreign and HKMT owned firms are broken down into wholly owned ones and jointly owned with domestic investors ones. In general, a trend of intensifying R&D activities for both international and domestic firms can be found. It is also found that the ratios of domestic firms are higher than those of the others. This is consistent with the findings in Jefferson et. al (2004). This may be due to the fact that foreign and HKMT owned firms backed by technological capabilities of their parent firms outside of China does not need the same level of R&D activities as Chinese companies. Within the category of foreign and HKMT owned firms, the R&D to sale ratios in wholly owned ones are smaller than those of joint ownership ones. A further look into the data shows that the share of firms with no R&D (focusing on manufacturing and other activities) is substantially larger for wholly owned firms, and the R&D to sales ratio does not differ very much when it is compared only for R&D firms.

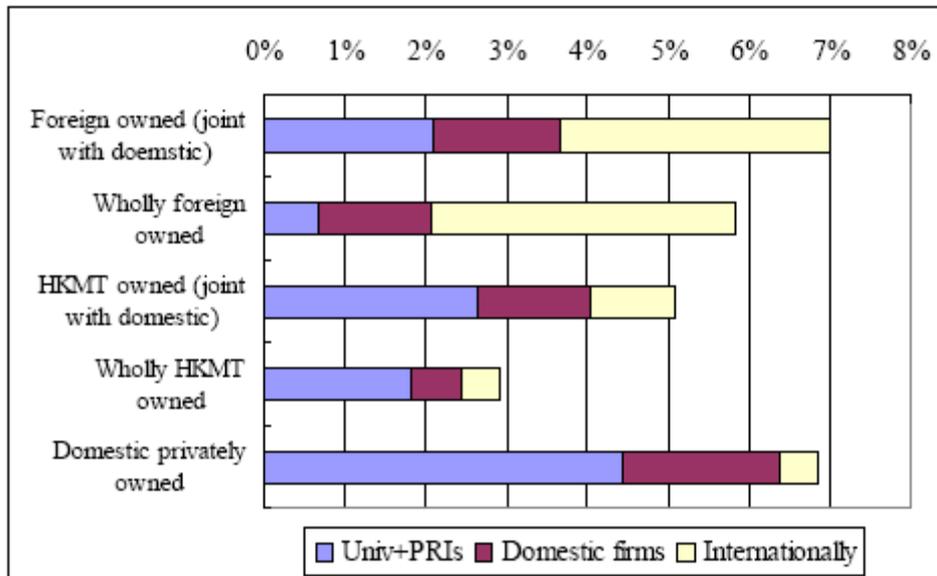
Figure 3: R&D/Sale by type of firm ownership



In Figure 4, the ratio of the amount of S&T outsourcing to total S&T (S&T outsourcing intensity) in 2002 is compared across the type of firm ownership. It also shows the breakdown of total S&T outsourcing intensity into ones by the type of counterpart, i.e., (1) domestic universities and PRIs, (2) domestic firms and (3) international counterparts, including firms, universities and PRIs. While the total S&T outsourcing intensity does not change very much between foreign owned and domestic firms, the composition is quite different. As for foreign owned firms, the share of international S&T outsourcing is very large, and this is supposed to be interactions with their parent company or related firms in home country. This finding can

explain why R&D intensity at host country firms is low. In contrast, domestic firms are working more with domestic universities and firms.

Figure 4: S&T Outsourcing/Total S&T by type of firm ownership in 2002



3. Motivations of International R&D

There are numerous papers analyzing globalization of R&D, while most of studies are addressing developed countries, instead of developing countries. It is found that FDIs in R&D are concentrated in small number of higher industrialized countries (Florida, 1997). However, China is one of exceptions and there is an increasing attention toward this large and fast growing country. Recently, substantial numbers of multinationals have set up R&D centers in China, and their activities are analyzed by interview and mailing surveys (Xue and Wang, 2001; Walsh, 2003). Wu and Callahan (2005) used the data on international R&D alliances in China, and analyzed the relationship between motivations, forms and functions. In addition, there are some studies focusing on Taiwanese firms' activities in mainland China, and linkages between them (Chen, 2004).

All of these existing studies are based on the information only on multinational's activities in China, which is collected by ad-hoc surveys. In contrast, in this paper, the data for both foreign owned and domestic firms from an official statistics in China are used for an analysis. Domestic firms' information can be used as a benchmark to be compared with R&D activities at foreign owned firms. Both types of firms in the same industry and firm size are operating in a similar manner in China, except for the fact that foreign owned firms have its parent at home as a source of technological capabilities. Multinationals set up foreign subsidiaries for various purposes, such as exploiting market and exploiting technology at host country. A whole idea of quantitative analysis in this section is comparing the activities and focuses of R&D of foreign owned companies with the same kind of domestic firms. By conducting this comparison, we

can make some inferences on the motivations of multinational's R&D in China, whether it is market driven or technology driven¹².

"Market driven R&D" and "technology driven R&D" are two major motivations in international R&D. Zedtwitz and Gassman (2002) show that the choice between two strategies by multinationals is determined by relative scarcity of research (R) to development (D) inputs. Similarly, Kuemmerle (1999) presents the dichotomy of FDI in R&D between Home Base Exploitation (HBE) and Home Base Augmentation (HBA). HBE is exploiting home base technological capability, while HBA R&D is augmenting home base technological capability. The former activities at host country R&D site are mainly driven by host market, while the latter activities are for absorption of host country's technology. In addition to these two types of motivations for international R&D, we would propose the third type, 'human resource driven R&D'. This factor is particularly relevant to China, where a large pool of well educated talented people lives (Wu and Callahan, 2005).

A quantitative analysis in this section is provided for identifying the motivations in R&D activities by foreign owned enterprises in China out of three types, (1) market driven R&D, (2) technology driven R&D and (3) human resource driven R&D. In order to conduct such identification, the following four types of indicators based on S&T Survey data are used.

(1) Intensity of R&D activities

STR: Ratio of S&T expenses to sales

RDR: Ratio of R&D expenses to sales

(2) Focus of R&D (R or D)

DEV RD: Share of development R&D in total R&D¹³

(3) Type of S&T outsourcing

U_PRI: Share of S&T outsourcing to universities and public research institutes (PRIs) in China

INTER: Share of S&T outsourcing to international counterparts (4) Human Resource for Science and Technology

STER: Share of S&T employees to total employees

HSTER: Share of high level S&T employees to total employees¹⁴

¹² Another approach is using a dataset for activities of parent company and its foreign subsidiaries. Examples include Iwasa and Odagiri (2004) and Belderbos (2001).

¹³ Total R&D can be divided into (1) Basic R&D, (2) Applied R&D and (3) Development R&D. Therefore greater DEV RD means that more development (D) oriented R&D, instead of more research (R), is conducted.

¹⁴ In S&T Survey, the number of high level S&T employee is separately collected. Examples of high level S&T employees are high level engineers, high level economists, high level statisticians, professors and associate professors.

STW: Average wage of S&T employees (1000 RMB)

Each of these indicators for foreign (as well as HKMT) owned enterprises is compared with that of the same kind of domestic firms. More precisely, each of these indicators is regressed with dummy variables for foreign and HKMT owned enterprises after controlling for industry, firm size and firm age.

Expected signs of foreign (as well as HKMT) owned enterprise dummies are difference, depending on the motivation of international R&D. Table 1 shows the differences.

Table 1: Expected Sign of Foreign Owned Dummies

Table 1: Expected Sign of Foreign Owned Dummies

	Market Driven	Tech Driven	HR Driven
(Intensity of R&D)			
STR, RDR	-	+	+
(Focus of R&D)			
DEV RD	+	-	0,-
(Type of S&T outsourcing)			
U PRI	-	+	?
INTER	+	-	-
(HRST)			
STER, HSTER	-	+	+
STW	-	+	?

As for market driven R&D, major activities at R&D sites at host country is product localization and process engineering, so that the intensity of R&D should be lower and the development portion of R&D should be higher. In terms of S&T outsourcing, the share with universities and PRIs is expected to be lower. But S&T outsourcing with international counterparts (the companies at home) would be higher, reflecting exploitation of home base technological capabilities. Finally, the share of S&T employee should be lower due to lower S&T intensity.

If FDI in R&D is driven by technology, the expected signs are basically opposite to those of market driven R&D. Higher S&T intensity and S&T employee intensity are expected. In addition, R&D is oriented toward research (R), instead of development (D) and more S&T collaborations with university and PRIs are expected (Kuemmerle, 1999). Finally, a HR driven R&D site hires more S&T people in China, which pushes up S&T intensity share, but an average wage does not always higher than that of the same kind of domestic firms. Another difference from technology driven R&D is that R&D orientation may be development (D), instead of research (R), because major incentives for FDI is cost saving of product development, instead of research. Unknown sign of U_PRI comes from the fact that they may want to collaborate with universities in order to attract good students, even though the technology over there is not so attractive.

The results of regression analysis are presented in Table 2. As well as dummy variables for foreign owned enterprises (FOREIGN) and HKMT owned ones (HKMT), the following controlling variables are included in order to make a fair match between foreign owned and domestic samples.

WHOLLY: dummy for wholly owned for foreign and HKMT owned enterprise (base: jointly owned with Chinese investor)

LAGE: log of firm age

LEMP: log of firm employment size

LEMP2: square of LEMP

Industry dummies for 4 digit industrial classification (561 categories)

Survey year dummies

Table 2: Regression results (all samples)

	STR	RDE	DEV RD	U PRI	INTER	STER	HSTER	STW
FOREIGN	-0.013 (5.84)**	-0.006 (3.64)**	0.017 (2.53)*	-0.017 (8.09)**	0.028 (14.50)**	-0.051 (4.12)**	-0.008 (4.80)**	0.576 (28.52)**
NKMT	-0.005 (2.16)*	-0.002 (1.39)	0.027 (3.91)**	-0.010 (4.50)**	0.006 (2.76)**	-0.037 (2.90)**	-0.006 (3.61)**	0.335 (16.10)**
WHOLLY	-0.003 (0.78)	-0.001 (0.40)	0.008 (0.74)	-0.003 (0.89)	0.000 (0.13)	-0.035 (1.59)	-0.013 (4.37)**	0.050 (1.40)
LAGE	-0.002 (2.94)**	-0.001 (0.93)	0.003 (1.27)	0.001 (0.93)	0.000 (0.48)	0.012 (2.74)**	0.000 (0.69)	-0.035 (4.98)**
LEMP	-0.033 (5.44)**	-0.016 (3.74)**	0.043 (2.59)**	0.015 (2.63)**	0.000 (0.05)	-1.023 (30.96)**	-0.168 (36.34)**	-0.301 (5.62)**
LEMP2	0.002 (4.18)**	0.001 (2.95)**	-0.003 (2.65)**	-0.001 (2.07)*	0.000 (0.69)	0.073 (29.38)**	0.012 (33.64)**	0.027 (6.66)**
constant	0.181 (8.98)**	0.081 (5.79)**	0.774 (13.64)**	-0.017 (0.91)	-0.004 (0.23)	3.623 (32.75)**	0.623 (40.38)**	2.517 (14.05)**
Ind Dummy	yes	yes	yes	yes	yes	yes	yes	yes
Year Dummy	yes	yes	yes	yes	yes	yes	yes	yes
Observations	20050	20050	9203	20075	14103	20088	20088	19829
R-squared	0.06	0.05	0.09	0.14	0.08	0.06	0.13	0.3

Absolute value of t statistics in parentheses

* significant at 5%; ** significant at 1%

First, negative and statistically significant signs are found in R&D intensity indicators for both foreign and HKMT owned enterprises. In addition, positive and statistically significant sign to DEV RD means development (D) focus of R&D activities at international R&D sites in China. As for S&T outsourcing variables, negative signs to 9 U_PRI and positive signs to INTER are found. All of these findings suggest that R&D activities by foreign and HKMT enterprises are market driven. There is one indicator, STW, showing an opposite sign to the expected by market driven R&D. Higher average wages for S&T workers at foreign and HKMT may be explained by rent sharing of value added as a result of higher labor productivity at these firms. It is confirmed that the productivity level of foreign and HKMT owned enterprises is higher than those of Chinese firms (OECD, 2005). This may not contradict with market driven hypothesis.

Market driven international R&D is dominant for both foreign owned and HKMT owned enterprises. When comparing the value of coefficients with dummy variables between them, foreign owned enterprises use parent technological capability more extensively (greater coefficient with INTER), while NKMT owned firms tend to focus more on development (greater coefficient with DEVRD) than foreign owned ones.

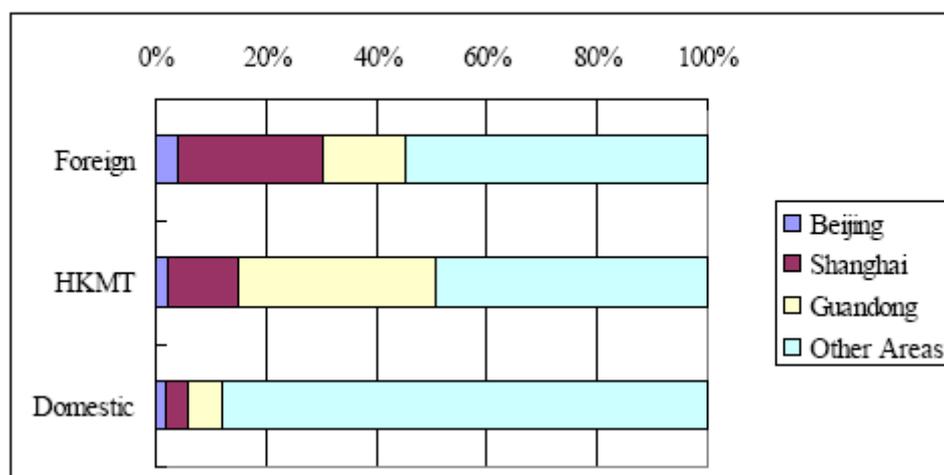
4. Regional Variation: Beijing, Shanghai and Guangdong

Regression analysis of the previous sections shows that international R&D in China is driven more by market, as compared to technology or human resource in general. However, a significant variation of international R&D strategies must exist. Gerybadze and Reger (1999) show that the type of global R&D depends on the relative size of home country as well as whether type of innovation is science based or market driven. Kuemmerle (1997) argues that the type of global R&D is evolving over time so that it depends on the firm's experience on business operations in host country as well. All of these findings suggest firm level heterogeneity of motivations and styles of global R&D.

A great variance in global R&D strategies can be also expected by region. Market driven R&D can be expected in an area with relative large market, while technology driven R&D cannot be happen without substantial concentration of universities and research institutes. Human resource driven R&D needs an ample supply of HRST, which also requires regional proximity with higher educational institutes. In addition, business strategy might be affected by local government policies (Siegal, 2002). In this section, the motivations of international R&D are compared across three regions hosting substantial amount of FDIs in China, Beijing, Shanghai and Guangdong.

In Figure 5, the share of number of firms across regions is compared by type of firm's ownership. About half of foreign and HKMT owned enterprises are located in the three regions, while the share of domestic firms located there is only about 12%. HKMT 10 owned firms favor Guangdong, while the share of foreign owned firms is relatively large in Shanghai, but nobody can deny the importance of these regions in terms of host of FDI.

Figure 5: Share of number of firms across regions by type of ownership



The same type of regression analysis as is in the previous section is conducted for the samples in Beijing, Shanghai and Guangdong, respectively. In order to make easier comparison of the results across regions, only the signs of statistically significant coefficients are displayed for the foreign owned enterprise dummy and for HKMT owned enterprise dummy in Table 3 and Table 4, respectively.¹⁵ The column of 'all regions' shows the results in the previous section.

¹⁵ Full regression results are available from the author by request.

Table 3: Regression results by region (foreign owned enterprise)

	All region	Beijing	Shanghai	Guandong
(Intensity of R&D)				
STR, RDR	-	-	0	-
(Focus of R&D)				
DEV RD	+	0	0	+
(Type of S&T outsourcing)				
U_PRI	-	+	0	-
INTER	+	0	+	+
(HRST)				
STER, HSTER	-	-	-	-
STW	+	+	+	+

(note) +: positive and statistically significant at 5%

0: not statistically significant

-: negative and statistically significant at 5%

Table 4: Regression results by region (HKMT owned enterprise)

	All region	Beijing	Shanghai	Guandong
(Intensity of R&D)				
STR, RDR	-	-	0	-
(Focus of R&D)				
DEV RD	+	0	0	0
(Type of S&T outsourcing)				
U_PRI	-	0	0	-
INTER	+	0	0	0
(HRST)				
STER, HSTER	-	0	0	-
STW	+	0	+	+

(note) +: positive and statistically significant at 5%

0: not statistically significant

-: negative and statistically significant at 5%

As for foreign owned enterprises (Table 3), the results for firms located in Guangdong show the similar pattern as those for all regions. This suggests that R&D activities at foreign owned enterprises located in Guangdong are driven by market, instead of technology or human resources. In contrast, firms in Beijing show substantially different pattern. Positive and statistically significant sign can be found to U_PRIs and the coefficients to DEV RD and INTER are not statistically significant. Positive coefficients with U_PRIs suggest technology driven R&D. Negative R&D intensity and S&T employment intensity contradict with this hypothesis, but it may be the case that tapping on technology at universities and PRIs in Beijing has just started and still in a small scale. Human resource driven hypothesis is not so relevant here, because STER and HSTER, key indicators for this hypothesis are negative and statistically

significant.¹⁶ In Shanghai, patterns of R&D activities by foreign owned enterprises are in-between those in Beijing and Guangdong.

It is natural that Beijing becomes to be a host of technology driven foreign R&D, because most advanced research facilities are concentrated in that place. In contrast, Guangdong is a place for industrial activities, without a strong science sector. Shanghai has also a strong industrial base, but there are also strong universities and public research institutes. The results in Table 3 suggest that multinationals locate their R&D activities across China, by reflecting each of regional characteristics.

Finally, R&D activities of HKTM owned enterprises in the three regions are not very different from privately owned domestic firms in the same area. In Guangdong, a tendency toward market driven R&D can be found, while most of coefficients in Beijing and Shanghai samples are not statistically significant. One problem is that the number of samples in Beijing and Shanghai is very small for statistical analysis. In addition, it is possible to interpret this result that the R&D activities of HKTM owned firms are very similar to those of domestic firms in these areas.¹⁷

¹⁶ It may be the case that foreign owned firms in Beijing hire a small number of good scientists. However, it is very difficult to differentiate such motivation from technology driven hypothesis. Here, HR hypothesis is narrowly defined as an outsourcing of home country R&D to China by large amount.

¹⁷ Lai and Shyu (2005) present supportive evidences that innovative capacities of high-tech parks across Taiwan Strait (Zhangjiang High-Tech Park in Shanghai and Hsinchu Science Based Industrial Park in Taiwan) are in a comparable level.

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