STUDY THE HEALTHCARE TECHNOLOGY AND HOSPITAL EQUIPMENT SECTOR IN SPAIN

Club de Exportadores e Inversores Españoles

fenin spanish federation of HEALTHCARE TECHNOLOGY companies

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Introduction

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This study, carried out by Agerón Internacional, is the result of an initiative by the *Federación Española de Empresas de Tecnología Sanitaria* (Fenin) [Spanish Federation of Health Technology Companies] and the *Club de Exportadores e Inversores* [Exporters and Investors Club], with the support of the *Instituto Español de Comercio Exterior* (ICEX) [Spanish Institute of Foreign Trade].

The main objective was to provide an up-to-date and reliable snapshot of the healthcare technology and hospital equipment sector in Spain. This general objective was subsequently broken down into various specific objectives, to which this study aims to provide a response:

- **To evaluate the importance of the sector,** in terms of its contribution to the wealth of the country, as a reflection of total sales within the sector, with regard to the generation of employment and its contribution to Spanish exports.
- **To present the activity within the sector in an organised manner,** in order to demonstrate the international presence of Spain, as well as its weight in R&D+i (Research, development and innovation) - the aspect with most added value.
- **To perform an analysis, based on the image of the sector itself,** highlighting its strengths and weaknesses so as to be able to suggest corrective measures.
- In addition, **to contrast the image of the Spanish health system by the industry itself,** its characteristics and requirements, in an attempt to discover whether it is a model of reference for the world in terms of national health system management.

In order to achieve these objectives, it was first necessary to obtain some general data from the sector. This first step was a challenge in itself due to the fact that there is no complete, up-to-date and detailed information available, despite different valuable estimates. Therefore, the first task was to undertake some in-depth research in order to obtain this information for the sector as a whole. This document aims to contribute to knowledge of the sector by means of the information presented, the result of research performed over a six-month period, including an analysis of the more than 1,200 companies that make up the sector. This data was the starting point for the subsequent study of the profile and information regarding the 718 companies which we believe comprises the main nucleus of the sector.

Besides the statistical data, interviews were held with 183 first and second level executives from 175 typical companies representing 44% of the sector's turnover. We would like to thank all these people for the information provided for in this study because, without their invaluable assistance, it would not have been possible to create a reliable image of the sector. Any errors or omissions are entirely our own responsibility.

Executive summary

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The Healthcare Technology and Hospital Equipment sector is **highly diverse.** Activities, procedures, manufacture, marketing, exports, etc. vary greatly, from cotton dressing to a system for obtaining medical images, together with the different types of company. However, the objective of this study is not to perform a detailed analysis of each of the many sub-sectors, but rather to try and provide an overall image of the sector.

The Hospital Technology and Equipment sector is made up of over 1,200 companies. 718 companies were analysed for the completion of this study, all of which met certain criteria:

- Company data is published and accessible through standard market research channels.
- The company is currently fully operational.
- The company has deposited its accounts with the Corporate Register for the last few financial years.
- The company is commercially active in one of the Health Technology sub-sectors.

72% of these 718 companies in the sector have deposited their accounts for the 2005 financial year with the Corporate Register, rising to 96% for the 2004 financial year. This provides us with a good indicator of the solvency of the selected companies and the validity of the data obtained.

97% of the companies in the sector database were contacted for the purpose of this study. Technically speaking, it could be said that all the companies in the sector have had the opportunity to take part.

The companies operating in the sector have a turnover of over 14,100 million euros. However, as these companies are also present in other sectors, some of this must be excluded. Of this amount, **the turnover exclusively attributable to Hospital Technology and Equipment firms is 7,400 million euros** (52% of the total) in 2005. The remaining turnover corresponds to other sectors. The companies associated with Fenin and the Club de Exportadores e Inversores represent 75% of total turnover, or 5,400 million euros.

These 718 companies **directly employ** 50,700 people, of whom **32,000 are involved with the sector** under study **(63%).** This translates to an average of 45 employees per company. According to various health technology company experts, indirect employment could be as much as 2.5 to 5 people for each directly employed person, meaning that **indirect employment in the sector would represent between 80,000 and 160,000 additional people.**

The **manufacturing companies (77%) absorb 75% of all the direct jobs** in the sector. On the other hand, **SME's (small and me-**

dium-sized companies) are responsible for 50% of all direct employment. If the same analysis is performed on small and medium-sized manufacturing companies, this percentage rises to 52% of all employment.

Almost **88% of the sector's turnover is concentrated** in companies **headquartered in the Autonomous Region of Catalonia (50%), basically the province of Barcelona, and the Autonomous Region of Madrid (38%).**

When the indicator refers to the **employment** generated by the companies in these two regions, the percentage falls to **82%.** Analysing this in detail, we see that employment in Catalonia generates a percentage similar to the weight of the region's sales (50%). However, the weight of employment in the Madrid region falls to 31% (7 points less).

In terms of **number of firms,** the **Autonomous Regions of Catalonia and Madrid are home to 71%,** which also shows that both their turnover and employment levels are far higher than the companies in the rest of the country. Besides sales, 68% of the manufacturing companies have their headquarters in these two Autonomous Regions, indirectly showing a preference by multinational corporations for these two locations.

In order to classify the companies by size, we have followed the European Union classification which has been in force since January of 2005. This distinguishes companies according to two criteria: the number of employees and turnover. If they do not meet both, the two criteria are included in the next category.

According to this filter, **92% of the firms are SME's** (micro, small and medium-sized companies), **but** they are responsible **for only 43% of total turnover.** Large firms, therefore, represent only **8% of the total but their turnover represents 57% of the sector's total.**

Average turnover in the sector totals **10.3 million euros.** However, due to disparity in turnover, this number is of no great significance. Therefore, we found that more detail was required, detailing each different segment, to analyse figures more adjusted to turnover by size:

Table 1.

CLASSIFICATION	RANGE	AVERAGE TURNOVER
Micro-company	Less than 2 million €.	0,7 mill. €
Small company	From 2.000.000 to 9.999.999 €.	3,0 mill. €
Medium company	From 10,000,000 to 49.999.999 €	16,0 mill. €
Large company	50 mill. € or more	73,0 mill. €

A conservative estimate of **total investment in R&D and innovation in Spain is 225 million euros.** This is based on absolute investment in R&D and innovation as recorded during the thorough fieldwork phase and extrapolated for all companies. This would represent **3% of the total sales figure in the sector.** 41% of firms claim that they invest and participate in R&D and innovation programmes. There is also a similar number of companies claiming that they do not invest in R&D and innovation. Broken down by segment, the most significant results are as follows:

1. Companies which do not invest resources: approximately **50%** of the companies which responded **claim that they make no investment.**
2. Companies which invest significant resources in innovation but which are difficult to quantify: some companies, mainly medium and

small-sized firms, claim that they invest a large percentage, but in improvements to products and procedures. They also recognise that it is **difficult to quantify** this investment, but that it is high and continuous. When asked, they replied that about **1% of their turnover** would be a realistic figure.

3. Companies with a high investment in R&D and innovation, representing less than 10% of their sales: a little over half of the companies claiming to invest in R&D and innovation provide a figure under 10%. The average figure is **3.6%.**
4. Technology companies, for which one of their basic activities is research (investment equal to or greater than 10%) provide larger than expected figures. However, they can not be ignored.
5. Multinational corporations: most of them claim that their research is carried out in their home countries or at other locations. However, they do claim to have small adjustment, innovation or development projects (for example, software, diagnostics and electromedicine).

48% of company executives said that they have an R&D and innovation department with an average of 12 employees. Again, this is **distorted** by companies belonging to segments 4 and 5 above, for which a part of their activity consists of research. Companies with small departments are **the most common (73%).** They have an **average of 3 employees** and employ 16% of the total number of employees in these departments.

Companies with large research and development departments represent one quarter (27%) of the companies with such a department. However, they employ **84% of all investigators** and have **an average of 38 employees** per department.

34% of the companies confirm that they receive **R&D grants.** 36% say that they do not receive such assistance and the rest (30%) do not know / did not answer. The total sum of the grants received by the companies able to specify a figure totals **7,135,000 euros,** with the sources being the CDTI [*Centro de Desarrollo Tecnológico Industrial* – Centre for Industrial Technological Development], PROFIT [*Programa para el Fomento de la Innovación Tecnológica* – Technological Innovation Promotion Programme], CIDEM [*Centre d'Innovacio i Desenvolupament Empresarial* – Centre for Business Innovation and Development] and others.

With regards to exports, the main conclusions indicate that **62% of the companies in the sector are exporters.** The export volume, including aggregator export companies, is **approximately 1,130 million euros, 15.5% of total sales** for the sector or **29.2% of all Spanish manufactures.** This figure is highly significant in relation to the level of Spanish competitiveness abroad.

Most of the firms collaborate with **local distributors and agents** in the country of destination, with visits made by their own staff. Only **7% claim that they export through aggregator companies.** Something that has decreased in volume and interest for the majority of manufacturers are sales via FAD (Foreign Aid Fund) credits, which are used regularly by only 18% and a further 2% on a sporadic basis.

Although the **Technical Assistance Service** (T.A.S.) is thought of as a distinguishing and essential factor for the majority of companies, this is not a problem abroad because companies with no physical presence establish **agreements with distributors or with aggregator companies.**

The export destinations most often mentioned by the interviewees include **Europe EU15 with 66%, Latin America with 35% and the Middle East with 32%. Europe EU15 is**

the area with the most potential (27%), followed by the Middle East (19%) and Eastern Europe (13%). Although the EU is a single market, sales are classified as exports for the purpose of this study.

The **major barriers and obstacles** for exports by Spanish firms are **official approval** (registries, certificates and official approvals themselves) with **36%** of the total, and **price** with **35%,** followed by **duties (14%), financial difficulties (9%)** and **company size and country image** (both with 8.52%).

The internationalisation process in the sector has gone far beyond merely exporting. Firstly, we have inverse internationalisation, purchases being made abroad, with **imports of some 3,550 million** at sales prices. These are being undertaken by both multinational groups and by Spanish capital companies, highlighting an **important balance of trade deficit.**

These figures coincide with studies conducted by Fenin based on the analysis of duty certificates establishing imports of 2,969 million euros for 2005. We would have reached a similar figure from our own research, although these imports would be at cost prices as opposed to our calculation performed at sales prices.

As mentioned earlier, the balance of trade, or the difference between exports and imports, is negative for this sector. According to data from this study, the deficit not covered by exports amounts to 2,420 million euros. In other words, exports cover one third (32%) of the imports, while the general coverage rate in Spain is two thirds (66%), more than double that of the Healthcare Technology Sector.

Table 2.

YEAR	BALANCE OF TRADE		COVERAGE RATE	
	Sector	SPAIN	Sector	SPAIN
2005	-2.420	-77.950	32%	66%

Figures: millions of euros (Source: Aduanas y Estudio Agerón)

As it is unlikely that imports will decline, we have to continue to **promote exports,** as up to **38% of the companies** in the sector **have not even considered the idea of exporting.**

The origin of these purchases is, for the most part, **Europe (9%)** and, to a much lesser extent, Asia, for both high added value products, such as Japan (1%) and countries with competitive pricing such as China (4%) and India.

A large number of companies have taken the next step in the internationalisation process with the opening of branch offices, subsidiary companies and other formulae. **28%** of the firms said that they have opened **some sort of commercial representation, mainly subsidiary companies.**

This strategy guarantees a **more stable presence in the future** and, once again, shows the **level of competitiveness of Spanish technology.** However, it is noteworthy that most SME's continue to operate an export system via distribution companies in the country of destination, which calls for additional help and support in order to enable direct exports to end customers.

Description of the healthcare technology and hospital equipment sector

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The Healthcare Technology and Hospital Equipment sector is the sector that covers health products and other equipment, excluding medication. This study has focused on the hospital-related area, excluding the pharmaceutical industry and health and beauty product areas. All the figures included refer to the 2005 financial year, except where another financial year is specified.

TYPE AND NUMBER OF COMPANIES

This sector is concentrated into a **small number of companies,** but of **capital importance** considering that it involves products which are essential for the health and welfare of the population. Approximately **1,200 companies,** all fully active, make up this sector. Certain companies, which were initially included, were subsequently disregarded for various reasons that will be explained in the Methodology. This figure would be even higher if we were to take into account those establishments devoted to the retail of products and services within the sector, such as orthopaedic and technical aids. However, this project focused on the study of a selection of 718 companies.

AGE OF THE COMPANIES

This sector is characterised by the **stability of the agents** involved. For example, 80% of the firms were established **over 10 years ago** and their **average age is close to 20** (19.6 years). Almost 40% of the companies are over 20 years old.

Furthermore, **the newest members,** companies established **less that 5 years ago, represent 5%** of the total.

Table 3. AGE OF THE COMPANIES

RANGE	No.	Total %
Less than 5 years	37	5%
Over 5 and under 10	105	15%
Over 10 and under 20	290	41%
Over 20 and under 50	260	36%
Over 50 years	24	3%
TOTAL	**716**	**100%**
No age data available	2	-
TOTAL COMPANIES	718	-

Table 4.

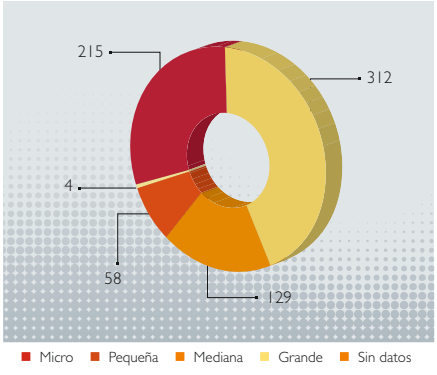
STOCK CAPITAL	Companies	Average Stock Capital €	Av. Cap. / Av. Sales
Micro	215	76.037 €	10%
Small	312	281.432 €	9%
Medium	129	1.855.047 €	12%
Large	58	12.966.003 €	18%
TOTAL	**714**	**1.534.405,33 €**	**15%**
No data	4	-	-
TOTAL COMPANIES	718	-	-

STOCK CAPITAL OF THE COMPANIES

The sector is highly diverse in terms of company size and profile. One important factor is the presence of multinational corporations and firms with only Spanish capital. Below is a classification of the 714 companies in the sector for which this information was available, in terms of stock capital and irrespective of ownership. (Table no. 4)

The average stock capital/sales ratio is 15%, ranging from 9-10% in small-sized companies and micro-firms and 12-18% in medium-sized and large firms.

Chart 1. No. OF FIRMS BY SIZE



SECTOR RETURN ON INVESTMENT

Another important parameter when performing a detailed analysis of the sector is return on investment. The Corporate Register accounting enables an analysis of the results declared for the last financial year, so the figures are very reliable (Table no. 5).

Table 5.

RETURNS IN THE LAST FINANCIAL YEAR	Companies	%
Negative	110	17%
Less than 2%	196	30%
Between 2-4,9%	137	21%
Between 5-9,9%	107	16%
More than 10%	110	17%
TOTAL	**660**	**100%**
No. returns data	58	-
TOTAL COMPANIES	718	-

This analysis shows that 17% of the companies in the sector have negative results. Curiously, this percentage (17%) is the same for companies which have over 10% earnings. Almost one third of the companies (30%) have returns of less than 2%. Almost a half (47%) earn less than 2% or lose money. One fifth of the companies (21%) earn from 2% to 5%. 16% of the total number

Chart 2. EMPLOYEES VS. TURNOVER

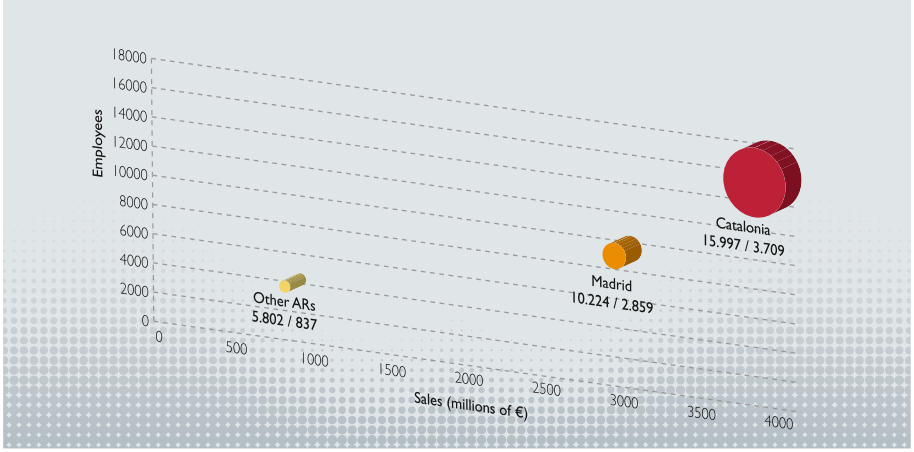


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Table 6. SALES, COMPANIES AND MANUFACTURERS BY AUTONOMOUS REGION

AR	Sales €	%*	Firms	%*	Manufacturers	%	%*	Non Manufacturers	%	%**
Catalonia	3.708.774.188	50	270	38	213	41	79	57	29	21
Madrid	2.859.300.013	39	235	33	143	27	61	92	47	39
Valencia	314.648.309	4	66	9	51	10	77	15	8	23
Basque Country	110.925.704	1	26	4	22	4	85	4	2	15
Castilla y Leon	102.057.269	1	9	1	7	1	78	2	1	22
Castilla La Mancha	67.460.345	1	14	2	12	2	86	2	1	14
Aragon	55.518.643	1	19	3	15	3	79	5	2	21
Andalusia	48.015.789	1	28	4	19	4	68	9	5	32
Galicia	37.878.113	1	13	2	9	2	69	4	2	31
Asturias	29.396.323	0	11	2	10	2	91	1	1	9
Extremadura	20.470.061	0	5	1	3	1	60	2	1	40
Murcia	19.022.851	0	7	1	4	1	57	3	2	43
Navarre	15.266.359	0	8	1	7	1	88	1	1	13
Canary Islands	12.922.210	0	3	0	2	0	67	1	1	33
Cantabria	1.485.844	0	1	0	1	0	100	0	0	0
La Rioja	945.028	0	1	0	1	0	100	0	0	0
Balearic Islands	651.893	0	2	0	2	0	100	0	0	0
Ceuta	0	0	0	0	0	0	0	0	0	0
Melilla	0	0	0	0	0	0	0	0	0	0
TOTAL	**7.404.738.942**	**100**	**718**	**100**	**521**	**100**	**73**	**197**	**100**	**27**

* *% Manufacturers / Firms.* ** *% Non Manufacturers / Firms..*

of companies in the sector earn from 5% to10%. One third of the companies earn more than 5%.

CONCENTRATION OF THE SECTOR IN CATALONIA AND MADRID

The aspect highlighted at the start of the study is the strong concentration of the sector in Catalonia and Madrid.

A good image of the sector is provided by a chart on which one axis represents the total number of employees in each Autonomous Region and the other represents total turnover in the sector. At the same time, the size of each Autonomous Region is shown according to turnover (Chart no. 2) (Table no. 6).

Catalonia has led the sector for years in terms of sales (50%), the number of firms headquartered in the Autonomous Region (38%) and the number of manufacturing companies (41%).

The Autonomous Region of Madrid leads the sector in terms of Non-Manufacturing firms, with almost half of the companies with this profile (47%) throughout the country.

Measuring the Autonomous Regions of Catalonia and Madrid together as a whole, we see that there is significant concentration, as they represent 88% of total turnover, 71% of the companies are headquartered in one of the two regions and 68% of the manufacturers found either in Catalonia or in Madrid, as can be seen from the following table. As we will see in detail later, these two regions also represent 82% of the sector's employment.

The following Table no. 7, shows a comparison between industry in general and this particular sector, by Autonomous Region.

Contrary to what might be expected, the study of the hospital technology and equipment sector

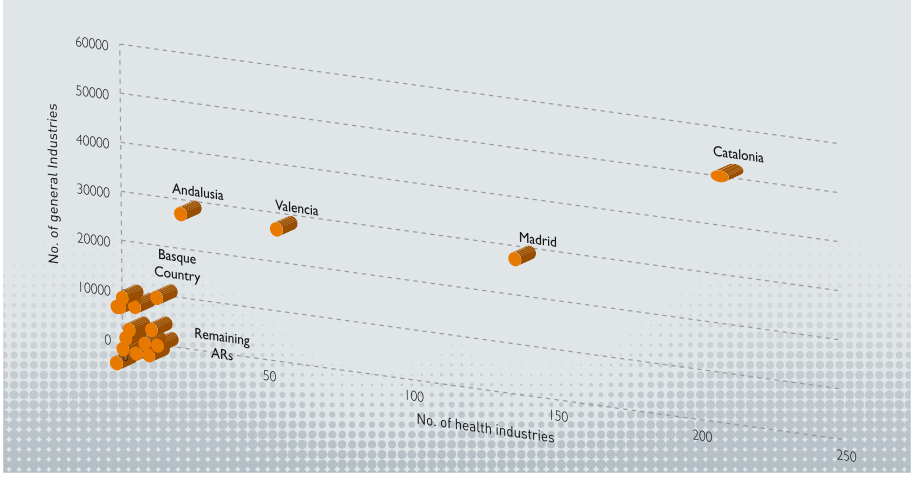
Table 7. INDUSTRIAL CONCENTRATION COMPARISON: HTE VS GENERAL INDUSTRY BY AUTONOMOUS REGION

CC.AA.	HTE Industries	%	General Industries	%	Concentration
Catalonia	213	41%	49.176	20%	101%
Madrid	143	27%	27.498	11%	141%
Comunidad Valenciana	51	10%	30.380	13%	-22%
Basque Country	22	4%	14.412	6%	-29%
Andalusia	19	4%	33.190	14%	-73%
Aragon	15	3%	7.729	3%	-10%
Castilla La Mancha	12	2%	13.218	5%	-58%
Galicia	10	2%	15.014	6%	-69%
Asturias	9	2%	4.373	2%	-4%
Castilla Leon	7	1%	12.973	5%	-75%
Navarre	7	1%	3.906	2%	-17%
Murcia	4	1%	7.738	3%	-76%
Extremadura	3	1%	5.150	2%	-73%
Canary Islands	2	0%	6.316	3%	-85%
Balearic Islands	2	0%	5.425	2%	-83%
Rioja	1	0%	2.848	1%	-84%
Cantabria	1	0%	2.414	1%	-81%
Ceuta and Melilla	0	0%	174	0%	-100%
Catalonia + Madrid	356	68%	76.674	32%	116%
SPAIN	**521**	**100%**	**241.934**	**100%**	**0%**

Fuente: Estudio AGERÓN y Cámaras de Comercio a partir de datos del DIRCE

clearly shows that the geographical location map for the sector's manufacturing companies is not consistent with the overall location of national industry in general (Table nº 7).

Chart 3. GENERAL INDUSTRY VS. HTE INDUSTRY



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68% of the manufacturing companies in the sector are located in the Autonomous Regions of Catalonia and Madrid. However, these two regions only represent 32% of Spanish industry in general. These regions are disproportionately over-represented: more than double its weight in national industry in the case of Catalonia and two and half times its weight in the case of Madrid. Andalusia, which holds second place with 14% of General Industry, is home to a mere 4% of manufacturing companies within the Health Technology sector. The Basque Country, Galicia, Castilla-León and Castilla-La Mancha are also declining in terms of this industry, which could suggest specific regional policies.

A chart displaying the number of general industries and the number of industries from the hospital technology and equipment sector shows industrial activity in the Autonomous Regions of Spain (Chart no. 3).

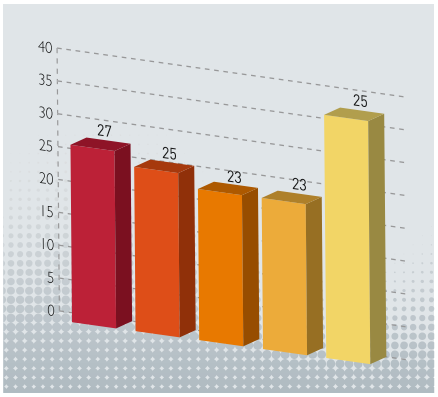
In the quadrant of high general industry and high health industry, the only two Autonomous Regions to be found are Catalonia and Madrid. Andalusia and Valencia can be found in the quadrant of high general industry and low healthcare industry.

The quadrant with the most entries is that of low general industry and low health industry, which is where the remaining Autonomous Regions can be found. There is not a single AR in the quadrant of low general industry and high health industry.

Tabla 8. ACTIVITY SECTOR COMPARISON

FENIN INTERNATIONAL AREA		STUDY SECTORS	GENERAL FENIN
Electromedicine, Medical Technology and accessories	1	Electromedicine, Medical Technology and accessories	Electromedicine
Laboratory, Diagnostics	2	Laboratory equipment and products	
	3	In Vitro diagnostics	In Vitro diagnostics
Medical furniture and equipment	4	Medical furniture and equipment	Manufacturers and exporters
Disposable products	5	Disposable products (+ textile and footwear)	Disposable medical devices
Orthopaedics, rehabilitation and expert assistance	6	Orthopaedics, rehabilitation and expert assistance	Expert orthopaedics
Prosthetics, Implants, other	7	Prosthetics, implants, other	Implants
Dental	8	Dental (equipment, disposable products, implants)	Dental
Ambulances, emergency and first aid equipment	9	Ambulances, emergency and first aid equipment	
	10	Oxygen therapy	Oxygen and other respiratory therapies
Information technology	11	Information technology	
Disinfection, hygiene, cleaning, waste treatment	12	Disinfection, hygiene, cleaning, waste treatment	
	13	Optics and ophthalmology	Ophthalmology
	14	Other services	
Comprehensive health projects	15	Comprehensive health projects	
	16	Other non-hospital sectors	
		Multisector	
			Effects and accessories
			Cardiovascular, neurosurgery and pain treatment
			Nefrología

Chart 4. PRINCIPAL SUBSECTORS (%)



Finally, this study has detected a trend towards delocalisation in terms of production. This trend is most apparent in labour-intensive sectors, low technology sectors and sectors related to disposable medical devices. The manufacturers themselves in these areas are accelerating the process by creating external manufacturers for their production and guiding them in their introduction to the Spanish market.

The difficulty also lies in the definition of manufacturer, which is understood to mean the undertaking of any part of the manufacturing process. Many industries were discovered as being registered under the economic activity of manufacturer and/or with manufacturing included in their corporate purpose, and even located in industrial warehouses, but they do not appear as such or no longer manufacture, or undertake some kind of packaging process or suchlike that may be considered as a national manufacturing activity.

For the purposes of this study, "manufacturers" is understood to mean companies which declare themselves as such in their Corporate Purpose, are registered as manufacturers in the CNAE *(Clasificación Nacional de Actividades Económicas de España)* [Spanish National Classification of Economic Activities] and have not been excluded following subsequent research. The rest of the firms are classified as "non-manufacturers".

SECTORS OF ACTIVITY

The first aspect to be highlighted is the diversity and dispersion of activity within the healthcare technology and hospital equipment sector. Therefore, various sectors of activity have been defined when classifying the industry's activity. These subsectors have been defined specifically for this study and are based on the sub-sectors with which Fenin works and the International Department of Fenin (Fenin EXPORT). (Table no. 8).

The sub-sector of each company was determined by the CNAE in which the company is registered, by the activity declared in its corporate purpose, by the activities advertised on the firm's website and by the response to the relevant question in the questionnaires. This shows that almost half of the companies are present in more than one activity, so our percentages total more than 100%.

In Spain, the sub-sectors with the largest number of companies are as follows (Chart no. 4):

- 27% Disposable products and textiles
- 25% Medical furniture and equipment
- 23% Electromedicine and medical technology
- 23% Orthopaedics, rehabilitation and expert assistance
- 16% Laboratory equipment and products
- 11% In vitro diagnostics
- 10% Dental (equipment, disposable products, implants)

It is interesting to note that a significant percentage of companies (47%) are "multisector", in other words, they operate in more than 1 sub-sector. The average number of sub-sectors in which these firms operate is 2.8. This explains the need for many of them to offer supplementary products and accessories, as well as the subsequent evolution that has

Table 9.

SUB-SECTORS BY NO. OF COMPANIES	Companies	%
Disposable products (+textile and footwear)	193	27%
Medical furniture and equipment	180	25%
Electromedicine, medical technology and accessories	168	23%
Orthopaedics, rehabilitation and expert assistance	163	23%
Laboratory equipment and products	113	16%
In vitro diagnostics	81	11%
Dental (equipment, disposable products, implants)	70	10%
Disinfection, hygiene, cleaning, waste treatment	57	8%
Other non-hospital sectors	55	8%
Prosthetics, implants, other	52	7%
Information Technology	36	5%
Optics and ophthalmology	34	5%
Ambulances, emergency and first aid equipment	33	5%
Other services	32	4%
Comprehensive health projects	29	4%
Oxygen therapy	23	3%
MULTISECTOR	337	47%
Sector average for the multisector companies	2,8	
COMPANIES WITH SELECTED ACTIVITY	**718**	**100%**

taken place from an initial range of products in their commitment to provide services and solutions tailored to the needs and requirements of their customers. It is likely that this multisector activity is also related to the high average number of years that the companies have been in the sector – 20 years.

Below, in a Table n. 9, showing participation by sub-sector.

ACTIVITY IN OTHER SECTORS

The research completed provides evidence to show that the companies have 52% activity in the sector under study and the other half of their activity in other sectors. Some are very close to the Healthcare Technology and Hospital Equipment Sector and this is not the case in others. The extremely close sectors include: Pharmaceuticals, Aesthetics, Veterinary, Health and Beauty Products, Chemistry. Other close sectors include: Food, Cosmetics, Photography, Leather Goods, Homeopathy, Dietetics, Tools, Mechanics, Furniture. Other activities develop products and services which are not so close, such as Home Cleaning and Hygiene, Real Estate, Consumer Information Technology, Telephony and Telecommunications, Energy, etc. They are possibly more significant for the stability required in the sector's business fabric due to its greater indirect impact on the economy.

Importance of the healthcare Technology and Hospital Equipment sector

4

EMPLOYMENT

Direct employment in companies in the Healthcare Technology and Hospital Equipment sector, bearing in mind the so-called aggregator companies, stands at **32,000 people.**

According to various executives and experts from the industry, the multiplier for indirect dependent jobs in the technology industry is between 2.5 and 5. Therefore, **indirect employment stands at somewhere between 80,000 and 160,000 additional jobs,** which would need to be added to the number of direct jobs generated in the sector.

The average number of employees per company is 46 in manufacturing companies and 40 in the non-manufacturing companies. **In other words, manufacturers employ, in general terms, an average of 17% more employees than firms not involved in production.**

SME's are responsible for 50% of all employment, despite only managing 43% of total turnover. If this analysis is applied to small manufacturing companies, the percentage increases to 52%. Large firms, despite managing 67% of the sector's turnover, employ only 50% of the total number of employees.

Manufacturing companies are responsible for **69% of total sales.** However, they represent **75% of employment.** Non-manufacturing companies (almost 200 companies) are responsible for 31% of the whole sales in the sector and employ 25% of the total number of employees (Table no. 10).

In order to discover the employment figures exclusively attributable to the sector, the same co-

Table 10. EMPLOYEES IN MANUFACTURING AND NON-MANUFACTURING COMPANIES

EMPLOYEES	Total	%	Manufacturing companies	%	% Manufacturers/ Total	Non-manufacturing companies	%	% Non-Manufacturers/ Total
Micro	867	3%	592	2%	68%	275	3%	32%
Small	5.595	17%	4.430	18%	79%	1.165	15%	21%
Medium	9.550	30%	7.505	31%	79%	2.045	26%	21%
Large	16.012	50%	11.533	48%	72%	4.479	56%	28%
TOTAL	**32.023**	**100%**	**24.059**	**100%**	**75%**	**7.964**	**100%**	**25%**
Companies	718	100%	518		72%	200		28%
Employee average per company	45		46		117%	40		100%

rrection factor that was applied to sales figures has been applied to the jobs declared in the Corporate Register. In other words, the number of employees in the sector is based on the percentage of each company's activity in the health field.

The distribution of employment over the various Autonomous Regions follows the same general trends as we have seen so far in this study: a strong concentration in the companies based **in Catalonia, which, with 50% of sales in the sector, also provides 50% of employment.** In Madrid, due to the strong presence of non-manufacturing firms, the employment percentage decreases relative to percentage of sales. The companies headquartered in **Madrid generate 39% of the sector's sales with only 32% of total employment.**

Below is a table summarising the number of employees per Autonomous Region:

Table 11. EMPLOYEES PER AUTONOMOUS REGION

AUTONOMOUS REGION	Totales employees	% of Total
Catalonia	15.997	50%
Madrid	10.224	32%
Comunidad Valenciana	1.711	5%
Galicia	1.030	3%
Basque Country	943	3%
Andalusia	458	1%
Aragon	426	1%
Castilla La Mancha	425	1%
Castilla y Leon	220	1%
Asturias	215	1%
Murcia	117	0%
Navarre	110	0%
Extremadura	91	0%
Canary Islands	35	0%
Balearic Islands	10	0%
Cantabria	9	0%
La Rioja	2	0%
Ceuta	0	0%
Melilla	0	0%
TOTAL	**32.023**	**100%**

Source: Drafted by the study

CLASSIFICATION OF COMPANIES BY NUMBER OF EMPLOYEES

According to data from the Corporate Register, **94% of the active companies are SME's and microcompanies,** when simply taking number of employees into account.

However, all the data in this study refers to European classification criteria, which takes into account both number of employees and turnover. By following this double criteria classification system, 92% of the companies fall under the categories of micro-companies and SME's, but half of all employment is generated by large firms (50%), with an average of 276 employees.

Table 12. COMPANIES ACCORDING TO NUMBER OF EMPLOYEES

COMPANY CLASSIFICATION ACCORDING TO NUMBER OF EMPLOYEES	No. of firms	%
Micro-company (<10)	217	31%
Small company (10-49)	311	45%
Medium company (50-249)	121	18%
Large company (250 Y MÁS)	40	6%
TOTAL	**689**	**100%**
No employee data available	29	-
TOTAL COMPANIES	718	-

Source: Central Corporate Register

Companies in the Healthcare Technology and Hospital Equipment Sector tend to be rather small. **Three out of every four companies are micro-companies or small firms** (Table no. 13) (Chart no. 5).

According to European Union criteria, one third of the firms are micro-companies, as they have less than 10 employees (30%). In all, these companies employ 3% of the sector total and have an average of 4 employees on their payrolls.

Table 13. EMPLOYEES BY COMPANY SIZE

CATEGORY	Companies according to EU classification	%	Sector Employees	%	Average Sector Employees
Micro	215	30%	867	3%	4
Small	312	44%	5.595	17%	18
Medium	129	18%	9.550	30%	74
Large	58	8%	16.012	50%	276
TOTAL	**714**	**100%**	**32.023**	**100%**	**45**
No data	4	-	-	-	-
Total companies	718	-	-	-	-

Fuente: Elaboración propia

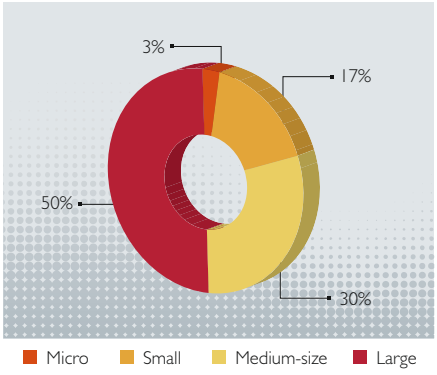
Small firms represent the largest segment in terms of number of companies (44%), which have between 10 and 49 employees. They employ 17% of the sector's workers and have an average of 18 employees each.

Micro-companies and small firms represent 74% of all active firms and 20% of the sector.

Medium-sized firms represent 18% of the total, with over 50 and less than 250 employees, and employ 30% of the sector. They have an average of 79 employees.

As we mentioned earlier, large companies provide employment to 50% of the sector, over 16,000 employees, but they represent a mere 8% of the number of active firms.

Chart 5. % JOBS IN THE SECTOR ACCORDING TO COMPANY SIZE



TRAINING REQUIREMENTS

Fenin and the *Club de Exportadores e Inversores* have already discovered that their associated companies have training requirements, valuing the aid and support that can be received in this field. Although it is true that many companies have already contracted external courses or provide internal training, **the demand continues to be high** because firms value training as a strategic tool for improving their competitiveness.

Surprisingly, despite the export figures, there is still a **lack of knowledge of languages** and, therefore, there is a need for training in this field among employees. **52% of companies require training in this field,** the field with the highest level of demand.

Following languages, the second most sought after field in terms of training is **foreign trade, demanded by half of all companies (49%).** There is a lack of experts in foreign trade and there are many professionals with knowledge gaps in this specific area, basically due to the growth in exports.

With considerably lower numbers than the two largest requirements in terms of training, we find training in **sales,** which is demanded by almost one third of all companies **(29%).** This involves **courses in sales, marketing skills, customer management,** etc.

Table 14. TRAINING REQUIREMENTS

	FIELD	%
1	Language	52%
2	Foreign trade	49%
3	Sales	29%
4	Technology	19%
5	Product	19%
6	Marketing	6%
7	Not interested	2%

Although many companies estimate that these skills, both languages and foreign trade training, must be provided by the people they hire for their export departments, this is not always the case. This study also detected professionals who, already working for a company, have completed some kind of course in foreign trade at Chambers of Commerce, business schools, etc. This shows a **need to offer specific and highly practical training in terms of foreign trade** adapted to firms which are just starting to export their products.

DISTRIBUTION BY AREAS OF ACTIVITY

A summary has been drafted containing the statistically average distribution of the departments in a fictitious company. It is therefore a **theoretical distribution per department,** based on the averages from firms with staff in those areas, performed for a manufacturing firm (Table no. 15).

This table is based on the actual percentages of companies with these active departments. The other actual piece of data obtained is the average number of employees in manufacturing companies: 46.

As can be seen, **over one quarter** of all employees is concentrated in the **Production Department (27%).** The rest are divided into just three areas almost equally: Sales (13%), TAS (12%) and Logistics (11%). The apparently high number of people employed (5) in the Logistics department is also worthy of note.

Table 15. AVERAGE EMPLOYEE DISTRIBUTION PER DEPARTMENT

	DEPARTMENT	Average employees	%
1	Production	13	27%
2	Sales	6	13%
3	T.A.S. (Technical Assistance Service)	5	12%
4	Logistics	5	11%
5	Administration	4	9%
6	Research & Development	4	9%
7	Storage	2	5%
8	Marketing	2	4%
9	Other	2	4%
10	Information Technology	1	2%
11	Exports	1	2%
12	Design	0	1%
13	Quality	0	1%
	TOTAL	46	100%

Subsequently, administration and R&D would have an average of 4 employees each. The next step would comprise Storage, Marketing and Others with 2 employees each. Information Technology and Exports are two specialist departments with only 1 employee in each. Design and Quality do not have the sufficient mass yet to become independent departments and, in many cases, are integral parts of Production or R&D.

TURNOVER IN THE SECTOR

One of the most interesting challenges faced by this study was to paint an up-to-date picture of the sector. In order to do so, it is essential to create an updated database, as shall be explained in detail below. Once this database was completed, it resulted in a sector with just over 1,200 active firms with turnover in Spain of almost 14,100 million euros in 2005, based on turnover figures from annual accounts and the rates of growth during three financial years. All this data was taken from the accounts deposited with the Central Corporate Register.

It is important to realise that, to all effects and purposes, the companies within the sector under study had a turnover in 2005 of 14,100 million euros. This is sure to be close to 15,500 million euros in 2006. This is the most important economic indicator that we have, besides the 50,700 employees.

Thus, we also have to bear in mind that these figures include the turnover of the large multinational corporations in the sector, but to which only a small part of their turnover can be attributed. Furthermore, the "mix" of activities is rather different in each of the companies.

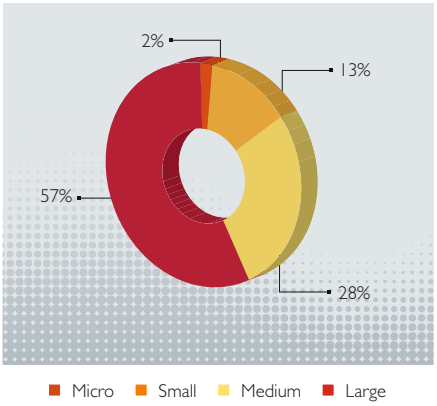
The next challenge is to deduce how much of this enormous **turnover corresponds to the healthcare technology and hospital equipment sector.** Finally, the analysis conducted in this study has shown that its total turnover is around **7,400 million euros,** representing **52%** of the total turnover of the firms in this study which also operate in other sectors.

CLASSIFICATION BY TURNOVER

The next European criterion relates to turnover. According to this criterion, the business volume of large companies is 50 million euros or more. Medium-sized firms are within the 10 million to 50 million euros range. Small companies occupy the 2 million to 10 million euros segment and, finally, micro-companies are defined by a turnover of less than 2 million euros.

With this indicator in mind and using the 2005 turnover figures as a basis (the financial year of reference for this study), the number of micro-companies and s would be exactly the same as according to the employee criteria, in other words, 92% of all companies in the sector (Table no. 16) (Chart no. 6).

Chart 6. TURNOVER BY COMPANY SIZE (%)



According to the turnover criterion, **over half of the sector's turnover** comes from 60 large companies invoicing over **4,200 million euros.** The remaining sales are in the hands of SME's and micro-companies. Medium-sized companies are worthy of note, with 18% of the companies producing 28% of total turnover, over 2,000 million euros. The remaining 15% of turnover is distributed between small firms (13%) and micro-companies (2%).

In other words, small and micro-companies, 74% of the enterprises with a turnover of less

Table 16. TURNOVER BY COMPANY SIZE

SIZE	Companies by EU Classification	%	Turnover 2005 €	%
Micro-company (<2 M €)	215	30%	157.283.466	2%
Small (Between 2-9,9 M €)	312	44%	939.796.681	13%
Medium (Between 10- 49,9 M €)	129	18%	2.050.941.856	28%
Large (>50 M €)	58	8%	4.237.216.667	57%
TOTAL	**714**	**100%**	**7.385.238.670**	**100%**
No turnover data available	4	-	-	-
Total number of companies	718	-	-	-

than 10 million euros, represent 15% of the sector's total turnover (1,100 million euros).

The classification system used is the **company classification according to the new European Union directive,** valid from 2005, which defines companies according to a double criteria system: number of employees and turnover.

- **Large companies** are defined as exceeding either 250 employees or 50 million euros of turnover, or both.
- **Medium-sized companies** are defined as employing from 50 to 249 people or with an annual turnover from 10 to 49.9 million euros, or with an annual balance sheet not exceeding 43 million euros.
- **Small firms** are companies employing 10 to 49 people with an annual turnover of 2 to 9.9 million euros.
- **Micro-companies** are firms employing less than 10 people with annual turnover of 2 million euros or less.

Table 17. COMPANY CLASSIFICATION ACCORDING TO EU DOUBLE CRITERIA

SIZE	Companies	%
Micro	215	30%
Small	312	44%
Medium	129	18%
Large	58	8%
TOTAL	**714**	**100%**
No data available	4	-
Total number of companies	718	-

When both these criteria are taken into account, it can be seen that the companies are not so small because many of them do not comply with one of the two criteria, turnover or number of employees, and pass over to the next category.

30% of the firms in this sector are micro-companies. Almost half of them (44%) are small companies. 18% could be classified as medium-sized companies and only 8% as large firms. In other words, 92% of the companies in the sector would be described as SME´s and micro-companies.

TURNOVER DEVELOPMENT

The development of turnover figures demonstrates a growing sector with significant ratios: 10.3% growth during the 2004 financial year over 2003 and 8.5% during 2005 over 2004.

However, as in previous sections, these growth figures were broken down and classified by company size, according to European criteria.

Growth during 2004 was based on an incredibly strong increase in turnover by large firms, nearly 13%. During the same period, neither micro nor medium-sized companies grew at all, in other words 0%. Small firms, however, registered an 8% growth rate.

Growth was more balanced during 2005, between 9% and 11%, except for medium-sized companies, which continued to be left behind with a growth rate of only 3.8%.

Table 18.

Growth	Firms	%	2005	2004	Crec. 05/04	2003	Crec. 04/03
Micro	163	29%	131.441.709€	119.445.820€	10,0%	120.325.885€	-0,7%
Small	253	45%	868.073.324€	783.396.866€	10,8%	726.674.288€	7,8%
Medium	97	17%	1.721.126.175€	1.658.505.749€	3,8%	1.657.428.283€	0,1%
Large	46	8%	9.580.289.010€	8.779.456.795€	9,1%	7.780.460.093€	12,8%
Total	**559**	**100%**	**12.300.932.218€**	**11.340.805.229€**	**8,5%**	**10.284.888.549€**	**10,3%**
Total sales	718	-	14.139.209.511€	13.035.601.237€	8,5%	11.821.885.940€	10,3%
Total Sector	718	-	7.385.238.670€	6.808.798.347€	8,5%	6.174.846.559€	10,3%

MANUFACTURING COMPANIES

According to this study, 68% of total turnover corresponds to manufacturing companies. These production companies have sales totalling 5,000 million euros, 23% (1,129,839,440 €) of which are from exports and 77% (3,859,426,811 €) comes from the domestic market.

Distribution companies, which include manufacturing companies in other countries but not in Spain, and even manufacturing companies in Spain but of products in other sectors, represent 30% of turnover, up to 2,200 million euros.

Table 19. TURNOVER OF COMPANIES IN THE SECTOR ACCORDING TO PROFILES

PROFILE	Turnover	%	Companies	%
Manufacturing	4.989.266.252	68%	522	73%
Distribution	2.205.203.987	30%	173	24%
Aggregators	105.416.019	1,4%	11	1,5%
Services	85.352.412	1,2%	12	1,7%
TOTAL	**7.385.238.670**	**100%**	**718**	**100%**

The so-called *export aggregators* with 105 million euros (1.4%) and service companies with 85 million euros (1.2%), complete the business panorama for the sector.

Almost three quarters of the companies in the sector (73%) declare themselves to be manufacturing companies, according to their corporate purpose, in the CNAE classification codes for which they are registered for tax purposes, or on their websites.

The companies identifying themselves as manufacturers, both with Spanish capital and multinationals, are responsible for 68% of the sales in the sector, 5,000 million euros. Of these sales, 75% **are manufactured locally,** in other words, **3,750 million euros are manufactured in Spain.** This will be detailed further in the following chapter.

78% of the manufacturing companies have their headquarters in only three Autonomous Regions, Catalonia (41%), Madrid (27%) and Valencia (10%).

VOLUME OF DOMESTIC MANUFACTURE

As shown above, a little over two thirds (68%) of total sales in the Hospital Technology and Equipment sector are produced by manufacturing companies; in other words, practically 5,000 million euros. These companies comprise 73% of the sector and provide 75% of the total number of direct jobs (Tabla no. 20).

However, it is essential to define how much of this manufacturing volume is produced at a local level and how much originates from imports.

In any production sector, it is extremely important to know the importance, the weight, of domestic industry compared to the sector as a whole. Manufacturing companies employ a larger number of people directly and generate many more jobs in an indirect manner. They are closely linked to other sectors and generate more wealth for the country in general. One of the objectives of this study was therefore to describe the actual status of domestic manufacture in the Hospital Technology and Equipment Sector.

Table 20. SALES BY MANUFACTURING PROFILE (2005)

PROFILE	Sales €	%	Companies	%	Jobs	%
Manufacturers	4.989.266.252 €	68%	521	73%	24.059	75%
Non-manufacturers	2.395.972.418 €	32%	197	27%	7.964	25%
TOTAL	**7.385.238.670 €**	**100%**	**718**	**100%**	**32.023**	**100%**

DEFINITION OF MANUFACTURER FOR THE PURPOSES OF THIS STUDY

This is not a simple task because the economical and legal information available does not always accurately represent reality. It is easy to find companies whose **corporate purpose includes a leading activity of "Manufacturing",** companies that are **registered in the CNAE** *(Clasificación Nacional de Actividades Económicas)* [National Classification of Economic Activities] corresponding to the manufacture of the products they sell, and companies that are even located on an industrial estate in a manufacturing warehouse, but which practically no longer manufacture anything in Spain or manufacture very little or include domestic manufacture of the product with some other minor process carried out locally. To discover the true reality, although it may seem an exaggeration, requires arduous investigative research work.

Far from this approximation, it was preferred to base this study on the **information provided by company managers themselves.** Subsequently, the results we obtained were passed on to the other manufacturing companies.

Therefore, for the purposes of this study, we have considered a **Manufacturing Company** to be one that meets the following criteria:

- The **Corporate Purpose** includes the activity of **manufacturing or production.**
- The corporate website on the Internet states that the company performs manufacturing activities.
- The company is registered as such in the CNAE.
- The company owns an active manufacturing plant in Spain.
- The managers of the company have confirmed that the activity of the company, in whole or in part, is devoted to manufacture.

Manufacturing within Spain represents approximately 53% of turnover, nearly **3,750 million euros.** This is an even more significant figure if one takes into account that **delocalisation of production** is a growing, rapid and ongoing phenomenon.

The manufacturers themselves outsource their production, in whole or in part, by "exporting" know-how, technology or machinery to emerging and developing countries. The main reasons for this are a lack of competitiveness, the high cost of our production factors and a public purchasing system which, for most products, the exception being high-end technology, only values the price factor. This means that, in certain subsectors, more economic alternatives are sought from producers abroad. This enables competitiveness to be maintained but at the cost of certain features.

According to experts in the sector, this process has been ongoing for a decade now and the consequences are clear: manufacturers are becoming marketing companies, distributors are becoming import companies and large multinationals are acquiring manufacturing companies in order to acquire market share and introduce themselves into the public health system, boosting their sales networks and incorporating their own brands.

As we mentioned earlier, there is indeed a unanimous perception in the sector that the fabric of domestic production is undergoing a permanent and constant erosion process. Domestic production has lost competitiveness, especially through prices. Just as, a few decades ago, production in the large industries relocated and came to Spain, attracted by lower costs, today we can see that our very own companies are abandoning us in search of the same advantages that we once offered here outside Spain.

It is difficult to maintain production in Spain. Even large multinationals are finding that their local plants must defend themselves constantly against the goals of their corporate leaders to relocate production

to more competitive geographical areas. The new management system in these large companies means that each production centre has to compete on a global scale with all the others in order to be awarded the manufacture of any particular product, exclusively for the entire world.

In products where technology is intensive and decisive, the most important for turnover volume, the **main purchasing criterion** is not price but rather other factors that include the ability to provide servicing and maintenance, added benefits, the option of communication and image to the press and therefore "selling" to users, positioning in the "regional race" in terms of medical and health progress, etc.

The characteristics defined in the sector make it rather unattractive for newcomers, few of which were detected during this study. This also shows the "asymmetry" which is characteristic of the sector. In terms of **extremely high-end products and systems, entry from outside is attractive, fast and immediate,** provided that developments are truly innovative and their applications broadly benefit the system. However, **almost all of the large players** in these developments are already installed here; **they are multinationals.** Indeed, they are very few, the same companies at a global level; the only firms with a capacity for development, providing a service and distributing throughout the world.

The **new entries** into the sector that have been detected mainly **come from other sectors.** They come from **large, technologically leading industrial groups,** in sectors that are much more open, competitive and mature. They are companies dedicating part of their resource surplus to developments in health technology, with the expectation of large profits. They tend to be micro-companies, with very few but highly qualified staff and a significant investment in technology and strong orientation towards the international markets.

For example, a consolidated group in the precision nuts and bolts sector, with a good presence abroad, has established "start-up" in the implant sector. Another type of newcomer is the regional authority, university department or research institute with results in applied biotechnological research. Several newcomers were also detected in the metal-mechanical sector, which have used their experience and industrial capacity for the construction of hospital furniture. Logically, there are various newcomers associated with the pharmaceutical sector, but these were not taken into account when analysing newcomers from more distant sectors due to the proximity of their business with the sector in question.

R&D EXPENDITURE AND EMPLOYMENT

Within the scope of this study, one of the areas to be investigated refers to the investment and staff devoted to Research, Development and Innovation.

Measuring investment in R&D is rather difficult. There is a lack of standardised criteria for measuring investment used by all companies. In fact, each company seems to have certain particular criteria when it comes to measuring their investment in R&D. Some include the cost of staff devoted to this task, or the portion of time spent by employees from other departments, or simply the direct investment recorded in this area.

Another important difficulty lies in the fact that, contrary to what occurs in manufacturing or export companies, there is no complete register of research companies. There is no available register of firms from which projections can be made. Therefore, it has not been possible to provide global figures in terms of investment in R&D.

Faced with this challenge, the study has approached this from a different angle. Various company profiles have been defined based on their relationship with R&D.

1. Companies which invest no resources.
2. Companies which invest significant resources in innovation, but which are highly difficult to quantify in economic terms.
3. Companies with a high investment in R&D, less than 10% of their sales.
4. Technology companies, which could be described as having research as one of their basic activities (investment equal to or greater than 10%).
5. Multinational firms which carry out research activities in Spain, whether in centres of global reference or projects with universities or medical professionals.

According to the conclusions of this study, most companies are involved in some way with the small "i", in other words, innovation. They improve the materials with which they work their procedures and their products and services.

A conservative deduction can be made that there is total investment in R&D&i of 225 million euros in Spain, based on the absolute volume of investment in R&D obtained during our fieldwork and extrapolated to all the companies as a whole. This figure represents 3% of total sales in the sector.

41% of companies claim they invest and participate in R&D programmes. There is also a larger number of companies that claim they do not invest in R&D. Broken down into segments, the main results are as follows:

1. Companies which do not invest any resources: approximately **50%** of companies **claim that they make no investment.**
2. Companies which invest significant resources in innovation but which are difficult to quantify: some companies, mainly medium-sized and small firms, claim that they invest a large amount, but in improvements to products and procedures. They also recognise that it is **difficult to quantify** this investment, but admit that it is high and continuous. When asked, they replied that about **1% of their turnover** would be a reasonable figure.
3. Companies with a **high investment** in R&D, but less than 10% of their sales: a little over half of those companies claiming to invest in R&D provided a figure under 10%. The average figure is **3.6%.**
4. **Technology** companies, for which one of their basic activities is research (investment equal to or greater than 10%).
5. Multinational firms: most of them claim that their research is carried out in their home countries or at other locations. However, they do claim to have small adjustment, innovation or development projects (for example, software, diagnostics and electromedicine).

48% of company managers claimed they have an R&D department and the average number of employees in them is 12 people. Again, this data is **distorted** by the companies belonging to segments 4 & 5 and by companies for which part of their activity is research. The companies which claim to have an R&D department are broken down further into those with up to 9 employees and those with 10 or more employees (Table no. 21).

Companies with small departments are the most numerous (73%). They have an average of 3 employees and provide employment to 16% of the total number of investigators.

Table 21. JOBS IN R&D AND INNOVATION DEPARTMENTS

R&D DEPARTMENT	% of R&D Dept.	% of Jobs in R&D	Average No. of Employees in R&D Dept.
R&D DEPT. (less than 10 employees)	73%	16%	3
R&D DEPT. (more de 10 employees)	27%	84%	38
TOTAL	**100%**	**100%**	**12**

Companies with large research and development departments represent one quarter (27%) of those companies that claim to have such a department. However, they employ 84% of all investigators and have an average of 38 employees per department.

R&D AND INNOVATION GRANTS AND PROGRAMMES

Only **34%** of the companies confirm they receive some sort of **R&D&i grant.** 36% claim they do not receive any and the rest (30%) do not know/ do not answer. The programmes from which most aid is received are CDTI (10%) and Profit (7%).

The total amount of aid received by the companies able to specify an amount, **is 7,135,000 euros.**

Table 22. DO YOU RECEIVE R&D AID? FROM WHICH PROGRAMMES?

Answer	%	Programmes	%
YES	34%	CDTI	10%
NO	36%	PROFIT	7%
UNK/NA	30%	CIDEM	4%
TOTAL	100%	INESCOP	1%
		OTHER	14%

THE T.A.S. (TECHNICAL ASSISTANCE SERVICE)

The first thing that needs to be said is that the Technical Assistance Service (TAS) is a highly important department in companies within the Healthcare Technology and Hospital Equipment Sector. It should also be clarified that many companies do not have such departments because they are not required by their products. Again, an "asymmetry" is present (companies with and without TAS), which tells us that TAS departments are critically important for those companies that have them.

Of the **companies that stated they have a technical assistance department (TAS),** the situation in terms of employment and average size of the department is as follows (Table no. 23).

So, there seems to be two types of company. Firstly, there are those in which the activity of the Technical Assistance Service is a very important part of the business, with large departments. There are a rather low number of these companies (17%), but they employ 35% of all technicians with an average of 33 employees.

Secondly, the remaining 83% of companies, which claim to have a T.A.S. department and specify the number of employees. They employ 65% of all technicians and have an average of 13 employees per department.

Finally, it can be concluded that not having a TAS does not represent a problem for exporting and setting up business abroad. In many cases exports are made **through a local distribution company** and this is the company which often provides this type of service to the end users.

SECTOR EXPORTS

The sources available providing information regarding export activity and used for the research carried out during this study show that **62% of the companies in the sector are involved in exports.**

Table 23. EMPLOYEES IN T.A.S. DEPARTMENTS

COMPANIES WITH TAS EMPLOYEES	% Companies	% Total TAS employees	Average No. of TAS employees
Less than 10 employees	83%	65%	13
More than 10 employees	7%	35%	33
TOTAL	100%	100%	17

The volume of sales abroad for these export companies in the sector, including the aggregator companies, **totals 1,130 million euros,** or **15.5% of total sales** in the sector, or **29.2% of all manufacture** in Spain.

According to a study based on customs records carried out by Fenin entitled *"Comercio Exterior del Sector Hospitalario"* ["Foreign Trade in the Hospital Sector"] the export figure in the sector for 2005 would be 1,292 million euros. The difference between the two figures obtained by the two studies can be explained because the FENIN study includes certain "exports" that are made between subsidiaries of the same company, transfers and product returns which, although they appear in customs reports, should not be included in this study as they are not considered to be "real exports".

EXPORT VOLUME FOR THE SECTOR

Exports, together with manufacture, are one of the main objectives of this research. The goal is to discover export volume, as well as other factors: obstacles, method of export, evaluation of aid and promotional bodies abroad, etc.

In any case, as was done for manufacturing, the company export activity is analysed in detail in terms of company size. Export volumes are very different depending on the size of the company.

Table 24. RATE OF EXPORT FOR EACH SEGMENT (Export Sales/Total Sales)

SIZE OF THE EXPORT COMPANY	% Export
Micro	49%
Small	48%
Medium	38%
Large	9%

The average volume exported by micro-companies is very high (49%), as is the percentage exported by small export companies (48%). The percentage decreases when we look at medium-sized exporters (38%) and falls to 9% in large exporters.

When looking at this data, two things stand out: the high export percentage of micro-companies and the low percentage of large firms. It should be pointed out that micro-companies do not export 49% of their sales. This means that exporting micro-companies do so on average to this percentage. The explanation for large companies is rather different. A significant number of the large firms in the sector, based in Spain, are linked to or are subsidiaries of large multinationals; they are not manufacturers and operate in Spain as distributors. Their parent companies do not permit them to export beyond established limits, except in certain cases.

Having applied the export per company size factor, an export volume of 1,130 million euros is obtained for 2005, representing **15.5% of total sales for the sector.** However, **a more detailed analysis** should be made of exports, both in terms of volume and number of companies, comparing this to the sector totals (Table no. 25).

The first thing to be highlighted is that exports represent only 7% of their own sales for companies in the large firm segment. However, they represent almost one third of sales for micro-companies (29%), a similar portion of sales for small companies (30%) and one quarter of the total volume of sales for medium-sized firms (25%).

If the analysis is performed in terms of absolute export volumes, it is the medium-sized company which has the most weight in the sector with almost half of total exports (46%). A further half of all exports are shared between small companies (25%) and large firms (25%). Micro-companies have only a minor economic value in exports (4%).

Table 25. EXPORT OVER TOTAL TURNOVERS

SIZE	Total Sales	%	Export Sales	%	% % Exports / Total Sales
Micro	157.283.466	2%	45.062.530	4%	29%
Small	939.796.681	13%	284.307.036	25%	30%
Medium	2.050.941.856	28%	521.606.877	46%	25%
Large	4.237.216.667	57%	278.862.997	25%	7%
TOTAL	**7.385.238.670**	**100%**	**1.129.839.440**	**100%**	**15%**

Given that large companies do not lead the way in terms of exports, it is logical that medium-sized companies take their place, as they have larger human, technical, product and technological resources, as well as superior financial resources, to take on commercial activities abroad.

Another important conclusion of the study is that there is room for work and improvements in terms of aid regarding company exports. **38% of companies do not export** and most of them confess that **they had not thought of doing so.** This promotion seems appropriate in light of this data, especially in medium-sized and small companies.

It would seem logical, but there is a relationship between the technological level of products and export obstacles. It is an inverse relationship: **the higher the technology, the fewer obstacles exist for its exportation.** The product itself opens or closes the foreign market. The **greatest obstacles** encountered when exporting are those related to **official approvals and registration of the products (37%) and those related to price (35%).** The section referring to Other Obstacles is also significant, with obstacles imposed by the parent companies themselves that do not permit exports and those related to increasing logistics costs for products with high volumes and low prices.

EXPORT STRUCTURE

57% of export companies focus their export activity through **distributors,** and **39% carry this out with their own staff** from the parent company.

Companies **basically seek and request assistance in finding these distributors;** the idea is to find "partners abroad", solvent companies and specialists in their products, or at least in the Healthcare Technologies Sector. This is the most common and sought after export model for Spanish companies in the sector.

Table 26.

	EXPORT OBSTACLES	%
1	Official approval – registration	37%
2	Price	35%
3	Other obstacles	32%
4	Customs duties	15%
5	Financial	9%
6	Company size	9%
7	Country image	9%
8	Lack of qualified staff	7%
9	Euro/dollar exchange rate	5%
10	Ability to provide T.A.S.	2%
11	Quality	1%
12	Technological	1%

The large multinationals complain about the lack of Spanish executives in their corporate organisations. They say that our country is underrepresented in their structures because of the **reluctance of Spanish executives to relocate to other countries.**

This sociographic characteristic may also partly explain why the export model that Spanish companies look for is one of "a partner abroad" – the difficulty they come across when it comes to trying to send trusted executives from their own

company abroad. This reality, uncovered by our professional activity and other studies, has also been detected in other sectors of activity in Spanish industry.

Table 27.

EXPORT METHOD	% companies
Via distributors or external marketing agents	57%
Depends on the country in question	19%
Not exclusive	13%
Exclusive	12%
From own staff from the parent company	39%
Through an aggregator company	7%
Creation of own distribution channels	7%
Agreements with companies for reciprocal distribution	3%
Joint-ventures with local manufacturers	1%
Purchase of local factories	0%
Transfer of production abroad	0%

52% of all companies do not have subsidiaries abroad, while 28% do. The most common destinations are the following: Portugal (10%), France (6%) and the USA (6%). It is worthy of note that 5% of companies claim to have subsidiaries in China.

Table 28. DO YOU HAVE SUBSIDIARIES ABROAD?

1	NO	52%
2	YES	28%
	Unknown / No answer	20%
	TOTAL	100%

63% of the companies claim to know their final customer. They belong to the private sector in 55% of all cases, but are from the public sector in 43% of cases. In many cases, companies have clients in both sectors, which is why the percentage is over 100%. Only 5% of companies claim not to know their customers abroad.

Table 29. DO YOU KNOW YOUR END CUSTOMER?

YES	63 %
NO	5%
PUBLIC SECTOR	43%
PRIVATE SECTOR	55%
Unknown / No answer	33%

EXPORT DESTINATIONS

The priority export area for the firms interviewed is the EU15, which appears twice as many times as the first answer than the next most common destination, South America.

Adding all the positions together, the three destinations most often mentioned by interviewees are EU15 (66%), South America (35%) and the Middle East (32%).

Table 30.

PRIORITY EXPORT AREAS (each company could mention several)	% Total
European Union 15	66%
South America	35%
The Middle East	32%
North Africa	23%
The Rest Of Eastern Europe	22%
North America	20%
South-East Asia	18%
Central America	13%
Far East	12%
Sub-Saharan Africa	11%
Other	3%
Australia/New Zealand	2%

Note: as companies could mention several priority export areas and not just a single destination, the percentages add up to more than 100%.

Regarding the areas with the most potential for the export companies interviewed, the most important is the EU (27%). The next important

area of opportunity is the Middle East (19%), followed by Eastern Europe (13%).

Therefore, Europe (EU15 + Eastern Europe) would be the area of opportunity with a 40% preference. In addition to the Middle East, there are three markets of similar preference: South America (11%), South-East Asia (11%) and North America (10%).

Table 31. AREAS OF OPPORTUNITY FOR EXPORTS

1	European Union 15	27%
2	The Middle East	19%
3	The Rest Of Eastern Europe	13%
4	South America	11%
5	South-East Asia	11%
6	North America	10%
7	Far East	9%
8	North Africa	5%
9	Sub-Saharan Africa	3%
10	Central America	2%
11	Others	1%
12	Australia/New Zealand	0%

The areas with the highest levels of growth in exports are the EU 15 (24%) and the Middle East (21%).

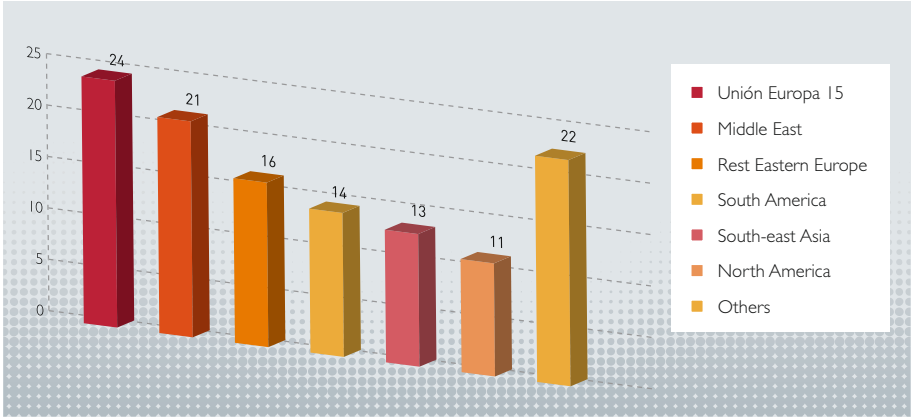
Table 32. AREAS OF HIGHEST GROWTH IN EXPORTS

1	European Union 15	24%
2	The Middle East	21%
3	The Rest Of Eastern Europe	16%
4	South America	14%
5	South-East Asia	13%
6	North America	11%
7	North Africa	7%
8	Far East	7%
9	Sub-Saharan Africa	4%
10	Central America	3%
11	Australia/New Zealand	1%
12	Others	0%

FOREIGN PROMOTION POLICY

Certain reputable executives pointed out that there is a discrepancy between the interests of the various authorities and the interests of the companies; in terms of target countries, when making decisions, on matters of strategic importance, during administrative procedures, on imports, on language, everything. They are fully aware that the responsibility does not lie with just one of the parties. They suggest that there should be **increased coordination,** or even one single body, **for Foreign Promotion** purposes.

Chart 7. EXPORTS: MAIN GROWING AREAS (%)



EXPORT AIDS

It has been drawn from this study that two levels of export assistance should be established. In the opinion of the companies, the aid and instruments for **helping current foreign promotion are well focused on those companies that do not yet export** and that are currently making a decision on the matter or are in a very early stage of exporting.

Nonetheless, they claim that they are of less use to the companies which already have some experience in exporting or are highly experienced in foreign trade. Many of them are even unable to access conventional aid because they do not meet the requirements.

This type of company requests a **2nd tipy of aid,** more evolutional focused on what they need during a more advanced stage of export or implementation. We believe this to be a valid statement but also that there is a lack of awareness regarding the wide range of aid currently available to these companies.

MARKETING OFFICES ABROAD

A percentage of the surveyed companies with export experience claim a degree of discontent with the activities of Spanish Marketing Offices abroad, which obtained low evaluation scores. They insist, for instance, on the need for the help provided by these offices to be based on a pre-established, objective model, reducing subjective criteria.

Another demand by executives is greater depth and specialisation in export-assistance instruments and tools, fundamentally with regard to information about markets and distributors, trade fairs or missions.

From our point of view, the work of the Spanish Marketing Offices abroad is fundamental for the foreign promotion of our companies and has significantly helped the exponential development of Spanish exports in the last 25 years. However, it is certainly true that in the last few years there has been an explosion of commercial, economic and country-specific information on the Internet. It is easily accessed, so it would be a good idea to evaluate a possible change in the way these offices help firms. It would be advisable to give them sufficient resources to provide more specialised and personalised attention, providing firms with information which would not otherwise be available, even if it represented a cost for these companies.

In this respect, a pilot programme of tailored assistance and services is now underway. It provides specialised attention in a series of selected offices which, although it has not been operating for long, is bound to be effective and useful for businesses.

DEVELOPMENT AID PROGRAMMES AND AGGREGATORS

The atomisation of the healthcare technology and hospital equipment sector, and the complexity of hospital needs mean that clients (ministries of health and foreign Social Security agencies, etc.) prefer to cover their requirements with integral turnkey projects involving multiple manufacturers.

This has led to the appearance on the market of groups of firms, which are often the leading exporters. They have used the Development Aid Fund (FAD) and export credits in general, although they are no longer much used. The reason why the FAD was often used by such groups is that the fund only finances social equipment projects which are not commercially viable (health, education, infrastructures, etc.).

For many years, this type of project undertaken by consortiums has been an important source of income for the sector and an opportunity to "export" via an expert company in foreign trade and with practically no risk whatsoever.

Up to **7% of the companies claimed that they carry out export activity via an aggregator.** However, many more claimed to have done so in the past but not now because this type of project has declined in recent years.

Development cooperation is critical to such a basic sector as Health. It is a key and strategic development for these countries. Many other sectors and projects depend on the operation of the Health sector.

These projects should therefore continue to be encouraged. Furthermore, they represent the first, easily accessible export experience for many Spanish manufacturers.

According to the data in this study, 11 companies are devoted to export aggregation activities and they have a turnover volume, in the health sector, of 105 million euros per year.

The so-called "export aggregators" are companies specialising in providing added value to turnkey projects through their functions of coordinator and supplier aggregator. Emerging countries do not have specialised personnel to define their needs and get these projects underway, enabling them to know which suppliers on the market can satisfy these needs and at what prices.

Generally speaking, it is this type of company that works for these developing countries, providing the added value of coordination and aggregation to their health and education projects. Aggregator companies usually make use of export credits for the execution of these projects and they are increasingly participating in projects financed by multilateral organisations, where price plays a key role.

Aggregators show a preference for working with domestic manufacturers, as they are easier to understand so the work is simpler, faster and more effective. However, on occasions and for some products, they have to seek suppliers among foreign manufacturers, as domestic firms are either not competitive in their prices or they do not provide the entire range of the necessary products.

According to the available data and referring to the turnover of nine of the eleven aggregators for which accounting data is available between 2003 and 2005, the turnover of these companies fell by 12% in 2004 with respect to 2003 and by 14% in 2005 with respect to 2004. Therefore, the accumulated decline between 2003 and 2005 is 24%. This data confirms the perception transmitted by the executives who gave their opinion on this matter.

In any case, the turnover of this type of company varies considerably from one financial year to another because they work on large projects that last for several financial years with long maturity and execution periods.

PARTICIPATION IN INTERNATIONAL TRADE FAIRS

In the opinion of the companies, the **Medica Düsseldorf** trade fair is, without a doubt, the most important in the sector. At the edition of this fair held in November, 2007, Spain was the 7th most-represented country in terms of number of stands. Seventy-seven companies were

Table 34. GROWTH OF AGGREGATOR COMPANIES

PROFILE	No. of Companies	% of Total Companies	Sale Growth 04/03	Sale Growth 05/04	Accumulated Growth 05/03
AGRUPADORAS	11	1,5%	-12%	-14%	-24%

present in the Spanish pavilion and many more took part as visitors. Most of the companies exporting from the sector take advantage of this fair to arrange meetings with international clients. It also serves as a showcase of reference for the health technology industry.

Another fair which is growing significantly is **Arab Health,** which was held in Dubai (United Arab Emirates) at the end of January, 2008. Forty-four companies were present in the ICEX Spanish pavilion, organised by Fenin.

Some companies believe that the country-based pavilion system is not the best method because their possible clients do not look for Spanish health technology but rather implant companies or manufacturers of a specific technology or sub-sector and not so much per country. In any case, they said that this is the case because we do not have an image abroad as a supplier of health technology. A response to this statement could be that the country-based pavilion system is aimed at creating an image for Spain as a health technology provider.

In any case, the research carried out by this study indicates that the companies are divided equally – 50% prefer trade fairs with **joint pavilions** and the rest prefer **company specific** trade fairs. It is therefore a question of focus, probably related to the need to display a product or the need to find a distributor. What seems clear is that the two instruments are necessary and highly valued by firms.

Good evidence in favour is the fact that the number of participants, in the Fenin sector plan activities, has multiplied almost by five, increasing from 62 participants in 1997 to the 300 participants in 2006. Fenin has undertaken 104 projects during this time. It has participated in 21 fairs, as a joint pavilion, official pavilion or informative stand. It has also undertaken direct marketing missions in 58 countries.

National Health System (viewed by the industry)

5

This sector is strongly influenced by the special characteristics of the purchases made in the Spanish National Health System, which is far larger than the still rather scarce private healthcare supply. In some respects, the market is almost a **monopoly in terms of demand, with very few buyers.** At the same time, there is also an **oligopoly in terms of supply** for certain high-end technology products, with very few sellers of such products, systems or services.

This special characteristic produces a type of **"asymmetry" in the view,** regarding information and strategies, due to the diversity and difference of sectors and products covered by this study. In other words, **there are global manufacturers who benefit from the system** as they are on the oligopoly side of the offer. There are many others, among them **small local manufacturers,** who are **enormously prejudiced** by the monopoly in demand by pricing pressure, above all on high consumption or fast rotation products, or those with little differentiation, or those for which the business supply is very extensive.

The Spanish National Health System consists of 18 agents: the 17 Autonomous Regions with competences in health matters and the Spanish Ministry of Health and Consumer Affairs which, besides being the regulator, is the notified body and therefore evaluates the conformity of health products according to specific legislation applicable to this business sector. It is also responsible for the Spanish National Health System in the autonomous cities of Ceuta and Melilla.

MARKET FRAGMENTATION

The fragmentation of the market, with 18 agents, with more or less legal, regulatory and purchasing power, **is the topic that probably most concerns businessmen and executives.** It is argued to be a very small market but one which contains 18 different sets of regulations to be complied with, 18 different catalogues and references for the same products, 18 purchasing systems, public tenders and different award criteria, etc. For all these reasons, the sector is demanding more coordination and cohesion.

It is increasingly complicated to attend **this fragmented market, which can only be overcome by** well-established **large companies, and small to medium-sized firms** with good sales networks and branches in the various Autonomous Regions. Within this "asymmetry" of vision, for the companies, this market fragmentation is very good because it creates a magnificent barrier to entry by newcomers. This dispersion requires many manufacturing SME's to hand over their marketing to large distributors, who subsequently cream off a portion of the profits.

One of the largest criticisms of the Spanish National Health System refers to **delayed payment. The Payment Delinquency Act (Law 3/2004) and public contract legislation that set measures against delinquent in the commercial activities** enable firms to claim the payment of deferred interest, at 7 points higher than the ECB interest rate, from public agencies that pay their suppliers after 60 days. This means that some regional health services have improved their payment terms and are now within or close to the legal terms.

PUBLIC PURCHASE SYSTEM

Another set of recurring criticisms relate to the public purchasing system used by the autonomous health service systems. Their transparency and accessibility are valued as very positive: anyone can participate and present a bid. On the other hand, criticism is made of the fact that the purchase system is not used as a strategic tool for making industrial and business policy.

One of the most common criticisms is that, year after year, **tender prices are reduced but the quality and performance requirements of the products are maintained.** Businesses complain that, despite messages from the authorities always favouring innovation, investment and development, when it comes to purchasing the product, these criteria are not taken into consideration and these tenders are awarded on criteria exclusively related to, or at least with priority, low prices. Besides not taking into consideration price or material increases, they demand large discounts. This is perceived as slowing the innovation process and an incentive to import.

Executives also perceive a growing number of obstacles when it comes to maintaining a fluid relationship between the industries and sanitary professionals. Within the healthcare technology sector, this contact with the professional is considered essential for product innovation, although the Authorities tend to minimises it as they consider that it could lead to abusive practices, which is not only unfair but, above all, very negative in areas such as innovation and development or applied research.

EXCESSIVE BUREAUCRACY

Another recurring criticism of the authorities is the excessive **bureaucracy that needs to be overcome in order to be able to access the aid and grants system,** as well as public tenders. This discourages SME's because they are unable to dedicate resources, above all the time of their employees, to the drafting of the large volume of documentation required.

It is the opinion of the small companies that these aid systems favour **large and medium-sized firms,** which are used to moving in the complicated world of bureaucracy. These companies have **departments with specialists in Administration and with sufficient human and financial resources** for the long application, granting and effective receipt periods for the financial aid.

Qualitative evaluation of the study

6

Attached below are various other qualitative evaluations regarding the following topics:

- Spanish National Health System, advantages and flaws.
- SWOT analysis of the Spanish export company (an analytical matrix of its strengths, weaknesses, opportunities and threats).

SPANISH NATIONAL HEALTH SYSTEM, ADVANTAGES & FLAWS

Advantages of the health system

- Predictable, reliable and consolidated system.
- Universal coverage, universal access to technologies.
- Good education and training of professionals.
- Modern infrastructures and technological equipment.
- Dynamic initiative policy, technological competition between ARs.
- Constantly growing sector.
- Very good quality of care.
- Open and honest public tender system, accessible by all companies.
- System open to new products.
- High growth in the private sector "driven" by technology.

Flaws in the health system

- Overcrowding resulting in deficits and non-sustainability of the System.
- Buyer monopoly with the ability to fix prices.
- Excessive bureaucracy.
- Lack of long-term elimination.
- Fragmented and heterogeneous system in 17 ARs: different sets of regulations, performances, catalogues, prices, etc.
- Lack of coordination in the System.
- Excessive costs and scarce investment.
- Purchases are not used as a strategic tool for industrial policy.
- Slow payments which discourage investment and innovation.
- Slow approval processes for new products.
- Bad connection and dialogue with the industry.
- Lack of recognition of the R&D and innovation of companies.
- Obstacles to industry / health professional collaboration.
- Continuous pressure on prices as the sole purchase criterion.
- Easy entry of new products without guarantees.
- System that discourages local manufacture and leans towards concentration in large distributors and multinational companies.

SWOT ANALYSIS OF THE SECTOR'S EXPORT COMPANIES

Table 35. SWOT ANALYSIS OF THE SECTOR'S EXPORT COMPANIES

INTERNAL WEAKNESSES	EXTERNAL THREATS
Need for foreign intermediaries.	Market concentration.
Low competitiveness in price according to market and product.	Competition from large multinational corporations.
Lack of foreign distributors and, especially, T.A.S.	Asian low-cost products
Lack of image as a technological country.	More R&D+i investment by foreign companies.
It is a sector requiring a lot of investment.	
Lack of a product catalogue and range.	
Excessive dependence on the domestic market.	
INTERNAL STRENGTHS	**EXTERNAL OPPORTUNITIES**
High response capacity (SMEs).	Increasing demand for medical devices.
Perception of high-quality European product (EC certifications)	New illnesses = new technologies.
Flexibility and client-orientation.	Ageing population.
Innovation and ongoing product improvement (in disposables)	New markets: Middle East, Eastern Europe, Asia, etc.
	New products/services in healthcare, home care, aesthetics and cosmetics.

Final recommendations 7

Having completed this study of the Spanish healthcare technology and hospital equipment sector, the final recommendation would be to encourage thought and suggest an analysis by the protagonists themselves.

This research has been intended to demonstrate the current situation in the sector, with a special emphasis on the manufacturing and export situation.

It is now the turn of the main actors, the business organisations, the participating companies themselves, as well as the authorities and official bodies involved, who make their own evaluations based on the data provided herein in order to search for the keys that will enable the strengthening and survival of the sector in the medium term.

The Spanish healthcare technology and hospital equipment sector is both strategic for the Spanish economy and essential for the sustainability of the health system and the quality of life of Spanish citizens. An in-depth analysis will enable master lines to be defined regarding what the sector itself wants for the near future.

Methodology

8

METHODOLOGY

The first objective of the project was to create an up-to-date image, an "updated snapshot", of the Hospital Technology and Equipment sector. This resulted in a database of the sector, containing current information on the active companies that make up the sector.

Firstly, a list of 1,216 companies included in the health sector was drawn up. This list was drafted by selecting company data from various reliable sources:

- From our own sources and research
- From national and regional authorities
- From the Central Companies Registry
- From the FENIN Federation
- From the Exporters and Investors Club
- From the Internet and other public sources
- From specialist publications
- From business databases

Once these sources had been collected, the companies on the list were filtered down according to the following criteria:

- That they were operational and active
- That they were no duplications due to various denominations, company names, brands, groups, etc.
- That they belonged to the Hospital Technology and Equipment sector
- That they had at least one of the following profiles: manufacturer, distributor, aggregator and/or exporter
- That they had their annual accounts deposited in the Central Companies Registry. In other words, only those companies that have officially presented and deposited their accounts were selected, at least up to 2003. This was a relevant criterion given that this is a sector whose primary buyer is the public sector.
- That there was information available on the company in order to obtain additional data.

The filtration of this list resulted in a database of the sector (DBS) comprising a selection from the main nucleus: 718 "active" companies.

Table 36.

FINANCIAL YEAR BALANCE SHEET AVAILABLE	No. of Companies	%
2006	2	0%
2005	519	72%
2004	174	24%
2003	12	2%
<2003	7	1%
NO	4	1%
TOTAL	**718**	**100%**

Subsequent research recommended that certain companies that did not comply with the requirement of having deposited their accounts up to 2003 be

maintained, as it was considered necessary to include them. However, their weight is only 1.6% of the total.

DRAFTING OF QUESTIONNAIRES

At the same time as creating the above sector database, work started on drafting a Questionnaire for the fieldwork. An Adapted Version was subsequently drafted to be sent by email to the companies which could not be interviewed in person which had a valid email address on the Internet.

The content of the Questionnaire was divided into 4 main areas:

1. Company Profile
Six questions regarding location, sectors, manufacturing and products.

2. The Company in export terms
Fourteen questions regarding exports: focus, geographical area, countries and areas with potential, technology, obstacles, evaluation of the promotional activities and bodies.

3. Other relevant questions
Six questions regarding HR, Training and R&D and innovation.

4. The Spanish Health System
Six questions regarding the Spanish National Health System and a SWOT analysis of the company regarding competition abroad.

Twenty-six out of the thirty-three questions included in the questionnaire, were of a quantitative nature, with closed answers and suggested alternatives. Many of these questions included sub-questions that delved deeper into the topic. Seven of the questions were open-ended, more assessments and qualitative, regarding the good and bad points of the Spanish National Health System, regarding the SWOT analysis of the company in terms of exports and regarding suggestions to help companies export and internationalise themselves.

FIELDWORK

From the selection of 718 active companies, a representative sample was taken. The objective was to contact as many companies as possible in order for them to have the opportunity to take part in the study, which was easily achieved.

In addition, it was initially scheduled to interview between 130 and 170 companies in order to interview a sample of at least 20% of the selection.

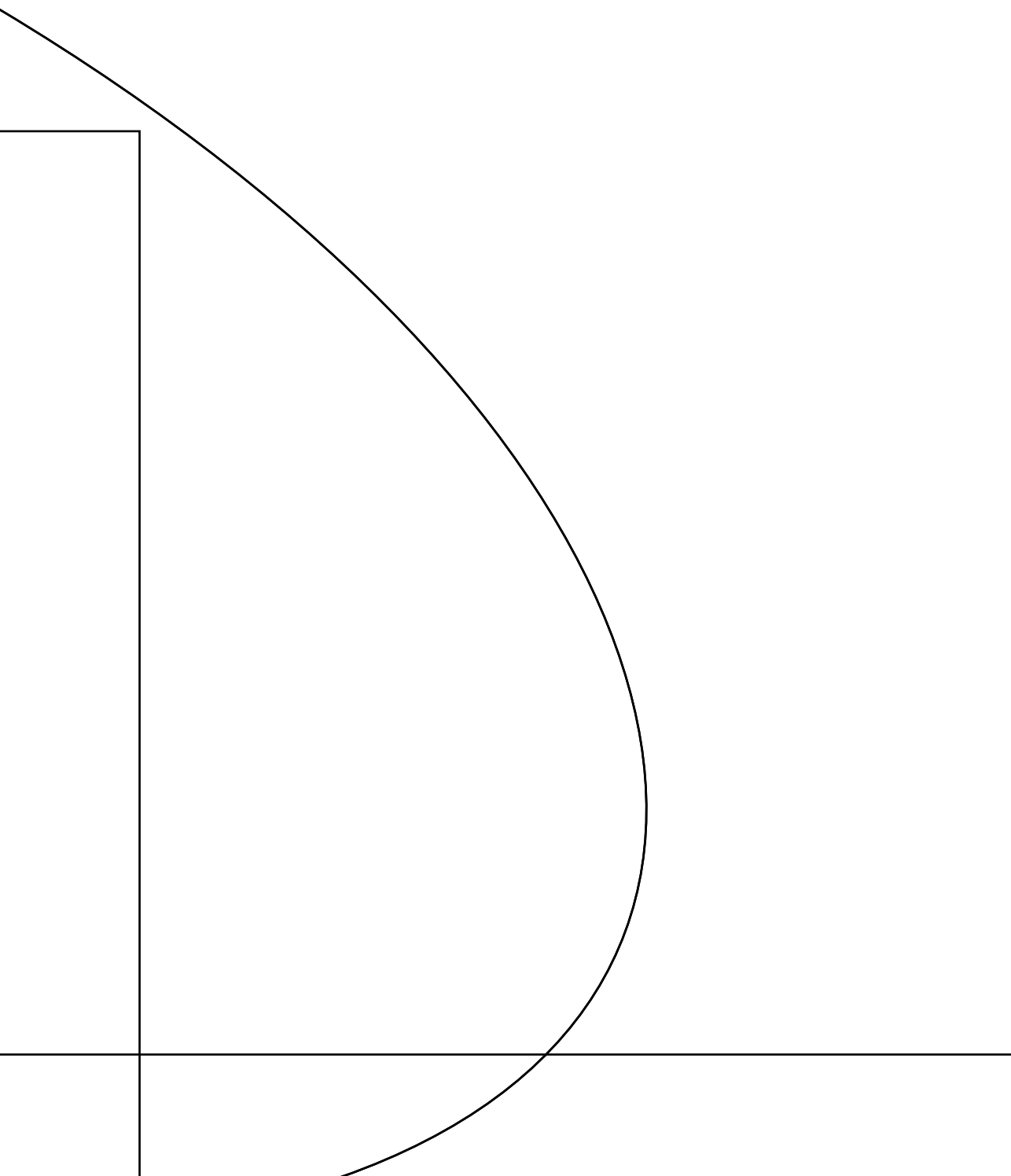
Eventually, 175 companies were interviewed (from which 183 completed questionnaires were produced – two separate executives responded from a few companies through two different channels), which represents 24% of the total number of companies in the sector. However, if we consider the turnover of the surveyed companies, it would represent 44% of the sector's total sales and 48% of aggregate sales, including other businesses in other sectors.

Table 37.

ORIGIN OF THE QUESTIONNAIRES	Sector	%
Personal interview at the Arab Health trade fair	41	22%
Personal interview at company headquarters	96	52%
Personal channel	137	75%
Personal interview by telephone	15	8%
Interview received by email	31	17%
Other channels	46	25%
TOTAL QUESTIONNAIRES FROM THE STUDY	**183**	**100%**

It can therefore be confirmed that the conclusions taken from the study are guaranteed by the opinions of the people in charge of those companies that represent almost half the sector's turnover.

Once this study was completed, it was read and carefully analysed by the Exporters' and Investor's Club and Fenin. In no case were changes made to the data provided by the study, but their opinions did lead us to complete some general aspects.



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