REPORT

STRATEGIC INTELLIGENCE AND CLUSTER BUILDING

STRATINC

INFO - Instituto de Fomento de la Región de Murcia

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Index

2. Brief strategic analysis of the Juices Industry

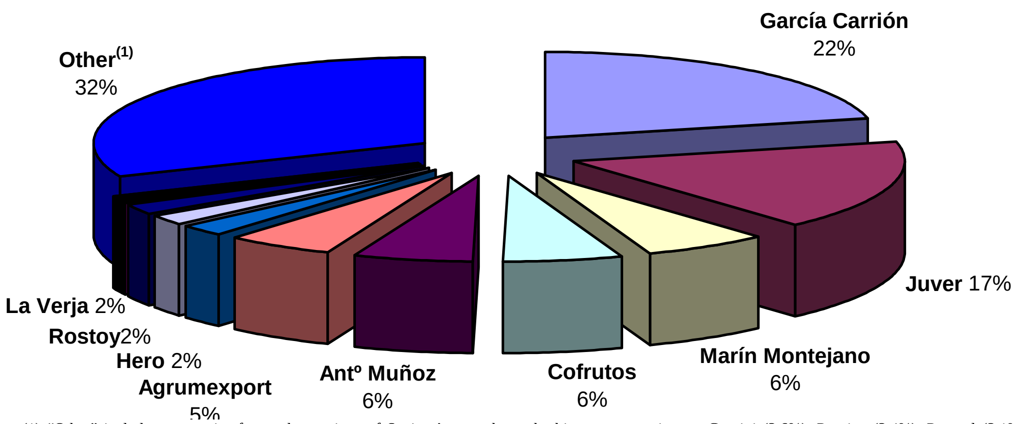
2.0 First consideration: Why it was selected the juice industry?

Juices industry is a very interesting cluster of food companies because they have to compete on the global market with innovative products based on their novelty and tested quality. This fact has forced the juices companies to improve its technology performance with a continuous watch on the raw materials (mainly fruits), the changes on the consumers demands and the new products launched by their competitors. In this sense the juices companies are the most advanced segment of the fruit and vegetable processing industry.

2.1. Introduction

In the region of Murcia it is located the major part of the Spanish production of juices. From the forty main companies of Spain, there are located in Murcia sixteen companies. These companies produced last year 752 millions of litres (68.71% of the Spanish production) with a total value of 458.49 millions of euros[1] (61.7% of the Spanish one).

The Juice Processing companies located in Murcia are the main Spanish Producers
(Company / Percentage of national production)



(1) "Other" includes companies from other regions of Spain. Among them, the biggest companies are Granini (3.6%), Pepsico (3,4%), Pascual (3.1%), Eurojuice (3.1%), Dream fruits (2.9%), Agrozumos (2.8) and López Moreno (2.1%).

Source: Own elaboration with data from Alimarket (2004)

2.1.1. History of the Juices processing industry in the Region of Murcia

The industry of vegetable and fruit processing has a long tradition in Murcia. First companies were established at the beginning of the twentieth century with the purpose of industrialize the agricultural products harvested on the orchards of the river Segura valley. The consolidation of industry occurred on the twenties of the past century, taking profit of the increased demand after the First World War.

All the major canned food companies produce preserved fruit. So it is well-known since decades how to handle and process the fruits that eventually would be the same raw material to produce juices. Even considering that the process is different for each fruit (paste, pure, peeled on syrup, small blocks, etc.). But all those process were well established and known since the beginning of the century. But for the juices processing industry (just to extract the juice and bottle it) we have to wait until the

[1] Statistics elaborated with data obtained from the number 279 of the magazine Alimarket (2004)

sixties. On those years some agricultural cooperatives established juices processing plants to transform their fresh fruits. It was an alternative value added product for their production.

At the same time as the cooperatives started to make juices, the private capital established the two first companies (La Verja, Cofrutos) with technology from the Italian company Bertuzzi[2]. And just a few years later (also in the sixties and beginning of seventies) other companies were established as Rostoy, Juver, Garcia Carrion, etc., nowadays they are market and technology leaders.

2.2. Situation of the Juice Industry

2.2.1 Main companies: The juice industry leaders

Accordingly with declarations on a national newspaper by Mr. José García Carrion, the owner of the company which producer more than 20% of the national production of juices, in Europe we are going to face a company concentration and the "unique solution to compete in a market with just a few food distribution companies is to also acquire volume[3]". Accordingly with this point of view, in Spain the juice industry is facing a concentration. Today there are just 70 companies, but just six companies rule the trends on the industry and it has been opened a close competition among this six companies to become the leader on the market.

The multinational leading companies today are Coca Cola (Minute Maid), Pepsico (Kas fruit, Tropicana, Alvalle), which have been recently complemented by investments done by Eckes-Granini (the European leader). Granini is currently present in ten European markets but in Spain still today has a weak presence selling just 35 millions of litres in a market of roughly 1,100 millions of litres (3.1%of market quota). Furthermore this company does not have a production plant and it sells the product imported or produced by the Spanish company Agrozumos. But it is expected by the industry that Granini would like to become the leader of the market as today is in Germany or in France. The last relevant multinational company is Conserve Italia, which has recently bought Juver to the Hero group. Juver is the second Spanish producer of juices being able to manufacture close to a fifth of the market last year (186 millions of litres[4]). It is expected to reactivate more the current production of Juver and fight for the leadership of the industry. With less importance is the presence of Procter & Gamble present in the market with the brand Sunny Delight, but it is said on the industry that Procter & Gamble probably will disinvest on this trademark.

The Spanish national leaders are today Garcia Carrion (Don Simón) and Zumos Pascual (Zumosol). The first one is also the main producer in the Spanish market. Both companies have invested strongly in the past year in new production plants in different locations (trying to get advantages of local provision of fruit). Also it is remarkable the investment done by these two companies (Garcia Carrion and Pascual) in advertising. It is also remarkable the effort on the internationalisation done by the company Garcia Carrion in the past year, it has become a provider of the American supermarket chain Wall Mart, becoming a juices supplier of the British supermarkets of this chain, and is planning to build-up a factory in America to save the transport costs. Finally considering the other companies not mentioned above, the experts of the industry believe that despite their strong regional presence, those companies are still small and the multinational companies could easily absorb some of them.

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[2] To see more details Cascales, Segura and Navarro (2001), page 32

[3] Newspaper: Diario El País – Suplemento Negocios, page 11. 21 of September 2003

[4] Information provided by the Newspaper "La Verdad", Wednesday 3rd of March 2004. The sales were 108 millions of euros and the investments done 7.2 millions of euros.

2.2.2. Main trends of the industry

CONTINUOUS GROWTH CAUSED BY NEW PRODUCTS

During the year 2003 the industry produced over 1.100 millions of litres. This figure means the consolidation of the continuous growth which has been every year more than 4% since 1999. The main reason of the growth is caused by the increases of demand, which comes from the following two sources:

- Increases of consumers' purchasing power and changes on lifestyle. That has made to appreciate more ready to drink juices instead of preparing them. Furthermore the general public likes to consume more natural products.
- The second reason is based on the new products launched on last years of the nineties with vitamins, calcium and other natural ingredients. The public welcomed them as even more healthy products than the simple fruit juices. Those innovative products have increased the consumption of juices dramatically. In the year 2001 the CEO of Juver (leader on the Spanish Market on that time) pointed out: "40% of the sales done in the year 2000 was done in products which did not exist four years before[5]".

These trends of increasing demand do not occur exclusively in Spain. For example in France, accordingly with data from UNIJUS[6], the average consumption per capita was 22,5 litres in the year 2002, while it was just 10,1 litres of juices and nectars on the year 1991. In ten years the global consumption has doubled. Considering that the food products are continuously losing weight on the consumer purchasing capacity, juices and their healthy derivatives had became a special commodity. This extraordinary growth in just ten years does not happen in almost none of the products done by the food industry.

From the point of view of the Stratinc project, the second reason exposed (the healthy image of the new products) is the most interesting one for the designing of the juices PSIP. It should be considered that all the companies are watching really carefully what new products are the competitors launching, monitoring their success in the market and evaluating the possibility of making similar products. On the other side those leading companies also had to review the recent discoveries in nutrition, searching the possibilities of using natural ingredients to launch its own innovative products. In these days the market trends seems to welcome any new functional food that might supply valuable nutritional supplements. This tendency is even stronger with mils, juices, beverages and other drinks; because that "healthy" functional food would be easily consumed. Considering the juices industry position this new healthy products (the functional food) are very interesting because all of them have a final price much higher than the conventional products.

The growth trend that has occurred at national level has also the same tendency on the companies from the Region of Murcia that have been interviewed for the Stratinc project in order to design a PSIP. As it can be seen in the table above, Garcia Carrion grown was almost on the average of the industry. The other companies did not made big changes with the exception of Cofrutos (fourth biggest company in Spain) and Rostoy (sixteenth Spanish biggest company). These big increases on the volume of juices processed by Rostoy and Cofrutos are probably caused by their huge investments on new machinery during 2003.

[5] Mr. Ángel Sánchez Sánchez-Vizcaíno, CEO of Juver, declarations done in the newspaper "La Verdad", published on 11th of October 2001

[6] UNIJUS – Union interprofessionnelle des jus de fruits (http://www.unijus.org)

Increase of production in the PSIP-Stratinc Interviewed companies			
Name of the Company[7]	Volume 2002 (Millions of Litres)	Volume 2003 (Millions of Litres)	% Increase
J. Garcia Carrión	223,9	235	4,96%
Juver	182	186	2,20%
Marin Montejano	65	65	0,00%
Cofrutos	57	65	14,04%
Antonio Muñoz	64	64	0,00%
Agrumexport	56,6	57,3	1,24%
Hero	24	24	0,00%
La Verja	22,9	22,1	-3,49%
Rostoy	15,5	20	29,03%
Halcon Foods	3,6	3,3	-8,33%
Conservas Mira	3	3	0,00%
Mensajero Alimentación	0,6	0,4	-33,33%
Bradock Food Coorp. [8]	0	0	
Total	**718,1**	**745,1**	**3,76%**

Source: Own elaboration with data from Alimarket (2004)

From the other side the external market has not been a leading demand. It has stabilized the demand on the 30% of the total Spanish production during the period considered and there are not any expectations that this demand would change on the future.

DISTRIBUTION CHANNELS

The big supermarket chains have increasingly started to commercialise juices with their own trademark. These juices are manufactured by the main juices companies and not by the supermarket. From the point of view of the juices industry this "white trademarks[9]"has two immediate consequences: firstly a loss of image to the final customer; and secondly a loss of money because the product is sold cheaper.

Today more than 50% of the total consumption of juices in Spain are done in this supermarket trademarks while ten years ago it was less than 10%. This situation still does not affect to those products with higher value added (nutraceuticals, functional foods, etc.). Probably it is because those products are still perceived as innovative ones. The tendency consists that the supermarket trademark is used only for the commercialisation of the product standardized (commodity) with less value added. However the innovative products today will be standard ones in the next years. A typical example are the juices done with a mixture of fruits, or those vegetable preparations as soups (e.g. gazpacho[10])

[7] From the fifteen main producers of juices it has not been contacted for the PSIP design under Stratinc project the companies "Tropicana – Alvalle" (Pepsico Group) and "Panarro Foods". So their data are not considered here, but we can say that both companies respond the tendenecy of growth in the juice industry.

[8] Bradock Food Corporation does not produce juices but it commercialises the production of Panarro Foods mainly using the trademark "3 soles" in the North of Africa (Magreb countries).

[9] "White trademark" or "white brand" is the name done to tose products commercialized with the name of the supermarket.

[10] "Gazpacho" is a kin of a tomato soup with bread, olive oil and some other vegetables that had been traditional home prepared. It is a good example on how innovative products are later commercialized by the supermarkets with its own trademark. Ten years ago a SME (Alvalle today bought by the Pepsico Group) from Murcia launched it as a brick that should be preserved refrigerated. It was a new product that took time for the general public to buy it, because it was strange for them to acquire it as an industrialized product. Following this innovation, all the major companies made the same product and today is commercialized as a "white brand" by the major supermarket chains.

that were innovative some years ago and is today a commodity commercialized by the supermarkets chains under its own trademark.

In this sense the companies are compelled to innovate on new products with higher added value. The situation is difficult because they have also to keep the level of prices of the traditional ones in order to not be expelled out of the market by the big supermarket chains. That was expressed in the personal interviews; it is coherent with the answers provided to the questionnaire that could be seen in the next pages of this report, and finally its importance could also be measured in the next table:

Percentage of commercialisation with its own trademark in the PSIP-Stratinc Interviewed companies

Company	Volume 2003 (Millions of Litres)	% Own trade (with trademark of the company)	2003 Volume Commercialised with its own trademark
J. Garcia Carrión	235	50%	117,5
Juver	186	70%	130,2
Marin Montejano	65	80%	52
Cofrutos	65	50%	32,5
Antonio Muñoz	64	0%	0
Agrumexport	57,3	10%	5,73
Hero	24	100%	24
La Verja	22,1	100%	22,1
Rostoy	20	100%	20
Halcon Foods	3,3	100%	3,3
Conservas Mira	3	100%	3
Mensajero Alimentación	0,4	10%	0,04
Bradock Coorp. Alimentaria	0	100%	3
TOTAL PSIP-Companies	**745,1**	**55,48%**	**413,37**

Source: Own elaboration with data from Alimarket (2004)

3. Results of the survey of the needs for strategic intelligence on the companies of the Juice Processing Industry in the Region of Murcia

3.1. Introduction

3.1.1. Sample of the companies interviewed

There are twenty-seven juice-processing companies in the region, which performs the objective universe of the juice PSIP. That number includes two main groups of companies:

- Thirteen companies which extract juice from citrus products (mainly lemon, oranges, and grapefruit).
- And fourteen companies that produce juices of different fruits and/or package them with their own trademark.

The first group of companies are highly specialized on citrus juice extraction, almost all of them have the same machinery[11], and thus the manufacturing process is the same. Furthermore these citrus extraction companies do not package the juices, they sold it as a bulk to other companies. The average size of the companies that extract juices is 25 employees, with 20 workers in plant and five people in the office with managing tasks.

With just a couple of exceptions, we can say that the level of technology development is higher in the second group of companies than in the first. Those companies are diversified on a wide portfolio of products, providers and clients.

Our decision was to make a personal interview to all the companies of the second group, because it is not so homogeneous and would provide a wider approach. For the rest of companies we just took a sample of the most representative companies of the first group. Finally for both groups we complemented the interview performed with meetings held with their representatives of their industry organisations:

- National Technology Center on Canned Food[12] (CTNC)
- Interprofessional Association of Lemon and Grapefruit[13] (AILIMPO), which represents the companies of the first group (citrus fruits extraction)
- Canned Food Companies Association[14]

3.1.2 Methodology

We decided to make personal interview instead of sending an inquiry by mail accordingly with the following two reasons:

- We noticed that the main technicians of the companies have to solve many inquiries, so they would not provide to it the necessary attention.
- Technology Watch and Strategic Intelligence are still new concepts for almost all of the companies in the sample and it was expected that many of them would not answer the inquiry

The interviews guide, selection of the juice industry and company was planned and designed by two expert from INFO together with the responsible of the information and documentation department of the National Technology Centre on Canned Food[15] (CTNC) and with the assistance of a consultancy

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[11] Provided by the American company "FMC FoodTechnologies" (http://www.fmcfoodtech.com)
[12] "CTNC – Centro Tecnológico Nacional de la Conserva y la Alimentación" (http://www.ctnc.es)
[13] "AILIMPO – Asociación Interprofesional del Limón y el Pomelo" (http://www.ailimpo.org)
[14] "Agrupación de Conserveros" (www.cannedfoodspain.com)
[15] Mrs. Marian Pedrero

company in Strategic Intelligence[16] (Idetra). The final version of the questionnaire adopted was the one provided by the coordinators of the project, considering being able to provide comparable results with other regions participating in Stratinc.

The first contact with the company interviewed was done by a phone conversation with the contact person provided by the department of Information and Documentation of CTNC. This department knows these people in the company because they are the people that commonly ask for information and formulate questions to the Canned Food Technology Centre. In almost all the cases, our contact persons were working in the department of “quality and development”. The companies interviewed are enough big to have a technical staff and just in a few cases we had interview the owner of the juice processing company.

During the phone conversation the experts of INFO introduced the project Stratinc and the proposed idea of developing a PSIP specialized on juices. After that short introduction the companies were asked to cooperate by expressing their opinion regarding the design and contents of the PSIP. For that purpose we finally ask them to receive us in their company factory and hold a meeting to discuss the subject. Before going to the company it was also sent (by Fax or e- mail) to them a two-pages description of the Stratinc project and the idea of what is a PSIP.

Finally the experts of INFO interviewed the responsible of the company. Just in a couple of causes the face-to-face interview was impossible due to last-minute obligations of the persons of the companies. In the rest of the companies the idea of the PSIP was welcomed. The meeting normally lasted about ninety minutes and all the interviewed persons of the companies took big efforts on answering the questions properly.

3.1.3 Significance of the companies interviewed

As it has been pointed out above (3.1.1) the most interesting group of companies are those which do not extract citrus product but those companies which a wider range of products which commercialise to distribution chains and/or final consumers. Another requirement for the selection of the most interesting companies was to be focused on those who are associated companies to the CTNC because the following two reasons:

- It demonstrate an interest on receiving valuable information for the industry, considering that almost the unique service provided by CTNC for free is the Information and Documentation.
- Secondly it guarantees the survival of any action on the PSIP taken far longer that the life of the Stratinc project because CTNC would continuously keep providing intelligence knowledge and information to the juices processing companies.

Taking this consideration into account, two lists of companies were developed. The first list of companies, which can be seen on the table below, was those companies that fulfil with the two exposed criteria. In those thirteen companies the experts of the Stratinc project have been able to meet them and finish the questionnaire in ten cases.

[16] Mr. Arturo Menéndez

List of companies which are the primarily objective of the PSIP	
Company	Inquiry
Agrumexport	Meeting with the responsible of the development department explaining the project, but the questionnaire was not done
Amgat Citrus Products	Contacted by phone only, but it was impossible to arrange the meeting yet
Antonio Muñoz	Questionnaire done
Bradock Food Products	Questionnaire done
Cofrutos	Same as Agrumexport, contacted by phone, also visited but the questionnaire was not done
Conservas Mira	Questionnaire done
Halcon Foods	Questionnaire done
Hero	Questionnaire done
J. Garcia Carrion	Questionnaire done
Juver	Questionnaire done
La Verja	Questionnaire done
Marin Montejano	Questionnaire done
Rostoy	Questionnaire done

The other companies, which can be seen on the next table, are also interesting to consider for the project, because these companies could also play a important role as final users of the PSIP. In this group it has also been considered industrial associations and organisations that might support the initiative and are currently providing information to the same universe of companies:

Other juices processing companies and associations interviewed	
Company (C) / Association (A)	Inquiry
Agrupación de Conserveros (A)	Questionnaire done
Ailimpo (A)	Questionnaire done
Cítricos de Murcia (C)	Questionnaire done
Conservas de Murcia (C)	Contacted by phone only
CTNC (A)	Questionnaire done
Derivados Citricos (C)	Questionnaire done

The total number of questionnaires done is fifteen; this figure represents to almost all the leading actors of the juices industry in the region of Murcia. However all the juices processing companies are going to be contacted and will be sent to them a shorter version of this report. Those companies, which conform the rest of the juices industry, and which are not contacted or interviewed yet are the following ones:

Other juices processing companies that might be part of the PSIP	
Company / Association	Activity
Citromil	Extraction of citrus
Eurogranizados	
Herbspain	Extraction of citrus
Hortimur	
Mensajero Alimentación	All kind of juices
Miguel Parra e Hijos	Extraction of citrus
Panarro Foods	Production of juices commercialised by Bradock
Rivervend España	Citrus juices
Tropicana – Al Valle	All kind of juices, a really innovative company
Tana	Citrus juices

3.2. Company Information

3.2.1. Typology of the persons interview in the companies

The person contacted for answering the questionnaire was in almost all of the cases the responsible of the quality and new products department. That person is a high-qualified employee but without any kind of ownership on the company. The common age of the person was between 35 to 45 years old. They have a university degree on sciences (mainly chemistry). In three cases (20% of the sample) the interviewed person has a PhD

3.2.2. Internationalization

Two of the companies are part of a multinational group (13,3%) but in both cases they have the R&D department on the same factory and the products are commercialised with the trademark of the Spanish branch. The mother companies are Conserve Italia from Italy (in the case of Juver) and Hero from Switzerland in the case of Hero España. Some of the companies are considering the foreign implantation, in less developed countries, as a mean to access to cheaper raw materials, low-cost labour force and new markets. But from now only Garcia Carrion seems to have an international strategy[17] that might lead to establish new branches in the USA.

3.2.3. Products Portfolio

Regarding the specialization of the companies, we can say that it is high. Close to 80% of the companies interviewed produce juices as a main product. But those companies produce also soups and other liquid preparations done in a mixture of fruits and vegetables. The rest of the companies are also diversified on the wine industry (Garcia Carrion, Rostoy) and other type of preparations done with fruits and vegetables as marmalades or Baby food (Hero).

3.2.4. Size

Four companies interviewed are not SMEs (Halcon, Hero, J. Garcia Carrion and Juver). The other companies re SMEs; but the average data of company interviewed company clearly is not an SME as it can be seen in the following table:

Average data of the juices processing companies

Turnover	69.957.733,45
Employees	356,64
Year of creation	1.972

3.2.5. Subcontracting

Finally subcontracting is not a common business relationship in this industry. The common approach is to have providers (or customers for the other side) in those products the company does not have the equipment or access to raw materials. During the twentieth century a worrying objective for the managers of the company was to profit the full production capacity of the company overcoming the seasonal provision of the raw materials. It was considered that the main raw material was the fruit that was able to produce only in certain periods of time. Today the diversification of the products, the wide range of juices (and the utilisation of imported juices concentrates), have made possible to have a fixed production with the advantages on specialized labour, planning, etc., that it represents. That company culture has determined that companies never subcontract.

3.3. Company Management

3.3.1. Intellectual property rights: Trademarks

Intellectual property rights are not considered as the major competitive source of the company. Only trademark had proven in the past to be valuable and protect effectively the innovations done by the

[17] Garcia Carrion supplies through Wall-Mart the German and British markets

companies. In that sense the juices processing companies have a professional management of those rights, subcontracted to patent attorneys, and protected in all their relevant markets (worldwide).

The list of the main trademarks protected by the interviewed companies can be seen in the next table. However it may consider that is not an exhaustive list, every new product innovative (nutraceuticals, functional foods in the last times) has its own name, which is promoted extensively. On the other side it has not been quoted the trademark (the name of the company which is also protected) of the companies interviewed that do not commercialise directly its production to final customers.

List of main trademarks of the companies interviewed in the Stratinc project

Company	Trademarks
Agrotransformados	Mocitos / Alisol
Antonio Muñoz	Ready
Bradock Food Products	3 Soles / Ilustre / Bradock
Conservas Mira	Mira
Halcon Foods	Halcón / Sonatina
Hero	Hero
J. Garcia Carrion	Don Simon
Juver	Juver / Disfruta
La Verja	La Verja
Rostoy	Rostoy / Jugoso

3.3.2. Intellectual property rights: Patents

The new challenge of the industry is to protect their innovations by using patents. Patents of new juices compositions are normally weak because of their lacks of novelty and inventive step. However the current products that are being currently developed has many new ingredients with unknown interactions between them. That provides essential inventive step and it would lead to stronger patents. In other European countries major juices and food companies protect extensively their innovations by patents.

3.3.3. Intellectual property rights: Designs

Finally the designs on the packaging are also important in the industry because identify quickly the product on the shelves of the supermarket. However a few companies in the world dominated the packaging industry[18]. Accordingly with that, the final producers of juices have not invested a significant amount of effort on packaging that would differentiate the products from others close substitutive. Coherently with that, the juices companies do not apply for design protection.

3.3.4. Organisation

Regarding the organisation, the biggest department of the companies is the Marketing Department. There are not structured departments to performing the other functions. However persons included in other departments carry out some of the responsibilities of those departments. R&D department is in many of the companies (only exist with this name in one) the department of "quality and new products". Finally only the three big companies considered have a department for information management.

3.3.5. Education

Most of the employees of the juice processing companies are working in the factory and do not have relevant education. Employees with PhD education are only present in four of the companies, and they are working on R&D, Quality Management, New products development or as Technical Director on the Production Plant. Master degree is widely extended and present in a third of the graduate employees in the mentioned departments

[18] The main provider is Tetra Pak. http://www.tetrapak.com

3.4. Company Strategy

3.4.1. Orientation

73,3% of the companies expressed that their primary strategy is the development of new products. Many of the major companies, 53% of the total interviewed, expressed the importance of the detection and conquest of new markets. Diversification was chosen by 30% of the companies and just two of them (13%) indicated that export was its strategy orientation. Accordingly with that all the companies interviewed qualified their activities considering Spain, not the regional level nor Europe.

3.4.2. Competitors

Regarding its competitors, the companies know them quite well because they are mainly the other juices processing companies established in the same region of Murcia. The knowledge of the industry is quite good considering that there are just 70 companies in Spain and there are not many juice importations. The competitors mentioned, outside of the sample of companies interviewed, were the following ones:

- Pascual (Zumosol)
- Granini
- Alvalle (Tropicana)

3.4.3. Constraints

The major constrain mentioned by the companies (nine answers 80%) comes from the concentration of the commercialisation chain, which imposes tied conditions and lower the prices. In the other direction the same companies argue that the agriculture cooperatives had been able to organise themselves making higher the raw materials prices (7 answers, 46,6%). Six companies (40%) expressed their concern regarding the frauds on the composition done by the competitors, who add sugars and water in order to accomplish with the brix degree that the product[19] must to have. Three of the companies (20%) pointed out the need of improving the sectorial organisations. Another 20% expressed the fact that the providers of machinery for the citrus extraction processes had provided many facilities to pay back to companies and they are lowering the market prices. Finally three companies (20%) expressed their concern for the quick copy by the industry leaders of the new innovations that are launched in the market.

3.5. Information System

3.5.1. Electronic Networks

All the companies are connected to internet in good conditions. Some of the interviewed persons were not able to answer the type of connections but they are satisfied with the speed, so we can say that they have ADSL internet connection in almost all the cases because is the type of connection that telecommunications companies are installing in the companies.

Just one company did not have a conventional server with a local area network. The five big companies used other applications (as erp, groupware), but all the companies with server (93,3%) had intranet and mail server. Any technician has access to a computer and an e-mail account. In fact, also inside of the company, e-mail is the common communication method of news and information that might be the contents of the PSIP.

3.5.2. Press Subscriptions

All the companies expressed that they receive many magazines, national and international. That is because there are some publications self-financed with the advertising. Those magazines are sent to

[19] In fact many of the juices processing companies has establish a private association to fight the fraud. The name of the association is AEZN (Asociación Española de Autocontrol de Zumos y Néctares) and it makes reports publishing which product from each company does not comply with the standard quality criteria.

the leading companies all over the world. But that does not mean that the magazines have lower quality. By the contrary, some of the technicians expressed that for them the publicity is also a valuable source of information and they also read that part carefully on the magazines.

Some of the magazines more mentioned were the following ones:

Nutranews	Food Engineering & Ingredients	Tecnobebidas
New Foods	International Foods & Ingredients	Alimarket[20]
Murcia Concilia	Functional Foods & Nutraceuticals	AECOC + Código 84
Beverage world	Ingredients Health & Nutrition	Food & Beverage
Alimentación equipos y tecnología	Brewing & Beverage Industry	Aenor

3.6. Innovation and watch

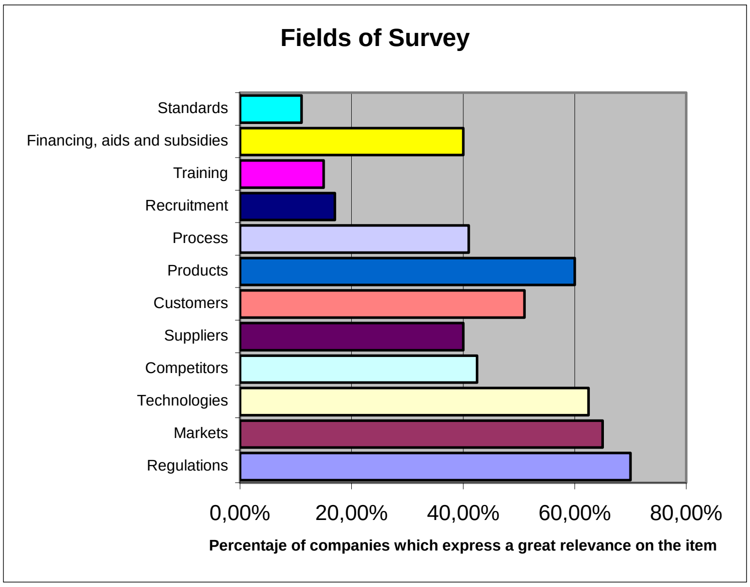
Almost all of the companies say that the information relevant for obtaining the innovations comes from the following two sources:

- *The market*: the commercial and marketing department detects new products, new consumer or clients requests which are valuable new ideas.
- *Providers*: more than 50% of the companies not only expressed this source but also stressed on its importance as a valuable source of new ideas. The companies consider the providers not only of equipment but also of any other input for the production of juices.

Just only one company expressed the University and public research institution as a common and established source of information that leads on innovations. But five of them (33’3%) pointed out that might be a valuable source of innovations that had never been used by them. Almost all the innovations have been in new products.

3.6.1 Fields of survey

Almost all of the companies expressed their interest on regulations, followed by market, technologies and products. It is interesting to consider that almost none of the interviewed persons knew clearly the meaning of standards and its application to the juices processing industry.



[20] "Alimarket" (www.alimarket.es) is the most mentioned magazine by far. The second one is the bulletin published by the National technology Center on Canned Food which is not properly a magazine

	Not relevant	Some relevance	Average	Great	No Answer
Regulations	30%			70%	
Markets			10%	60%	30%
Technologies		10%		60%	30%
Competitors		10%	20%	30%	40%
Suppliers				40%	60%
Customers	10%			50%	40%
Products				70%	30%
Process	10%			40%	50%
Recruitment	10%		10%	10%	60%
Training			10%	10%	80%
Financing, aids and subsidies			20%	30%	50%
Standards	10%			10%	80%

The consideration of the importance of the subject might not lead directly with the fields that should be the contents of the PSIP. In this sense, one of the leading companies in the industry pointed out that it would be nearly impossible for the PSIP to acquire so detailed information as they are obtaining regarding markets, competitors, providers and clients. That is interesting because it permits to concentrate on just a few hints that would be more valuable and not duplicate efforts.

On the other side it was also pointed out that the concentration on providing information regarding new technologies and innovations is quite easy and should be complemented with more data than a conventional description of the benefits of the technology. That person stressed on the need of having details of any validation of the technology in a trustfully way that would confirm that the technology would be useful. The validation process should concentrate on those aspects where the technology does not have an optimal performance. In the case that this technical work would not be possible at least it would be really valuable to have the penetration rate (thus an implementation indicator) that could confirm the benefits always expressed by the technology developer.

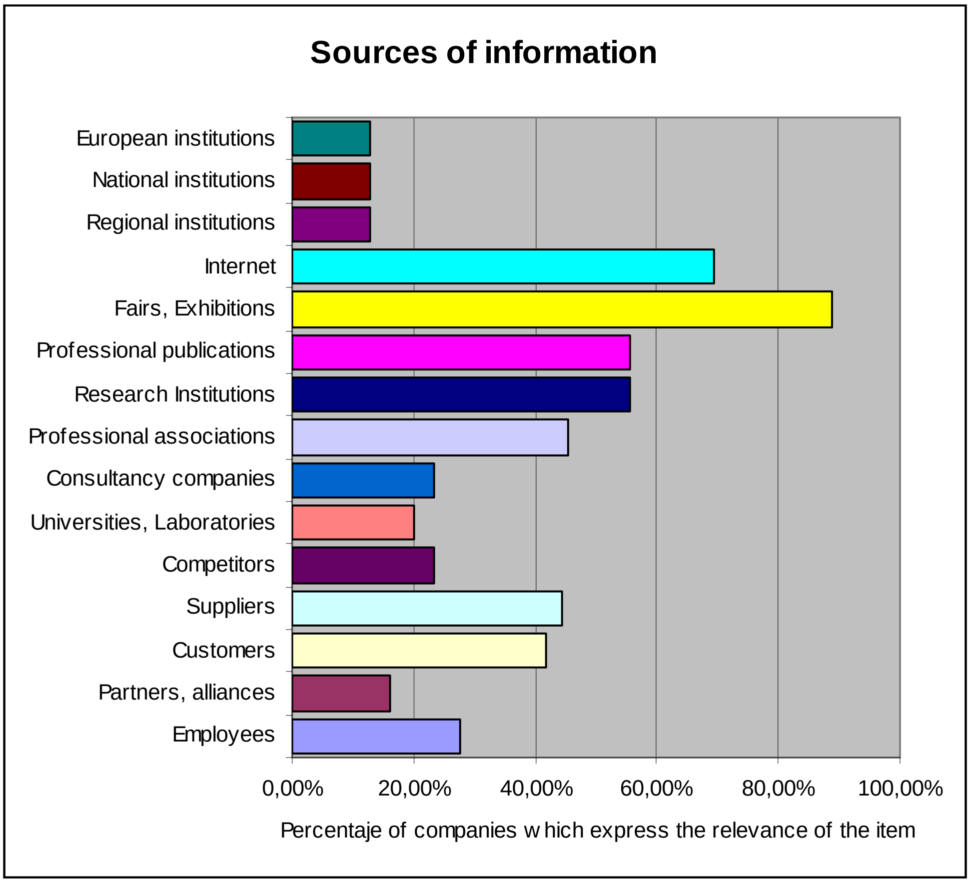
It is also interesting to consider the opinion expressed by another juice industry leader. It was pointed out strongly during the interview the need of knowing the norms and regulations much before they are approved. Knowing them really in advance would be easier for that company to adapt themselves on changing conditions. That company also stresses that technologies have a low speed and the juice processing companies do not have any mean to change this pace or to influence in new developments which are performed by just a few big providers of equipment in the world. However he also pointed out that there have been major changes on the consumer market in the recent years. The most innovative trends on food products come mainly from the British and the Japanese markets.

3.6.2 Sources of information

Except one of the companies, all the rest of juice producers agree on the fact that the less relevant information is the one provided by the institutions. One of the biggest producers expressed that this information is mainly related to regulations and always arrive late because it is disseminated once is compulsory.

On the other side the most valued source of information is by far the “Fairs” (normally these companies attend international trade fairs as Anuga, FoodTech, Alimentaria, etc.). The second one is “Internet”. That is an excellent result for any future supplier of information based on web technologies. And among other things, supposes a promising future for the Stratinc project if it is able to provide to the juice processing companies a good PSIP based on Internet technologies.

Many of the companies quoted also “research institutions” but they were mostly thinking on the National Technology Centre on Canned Food (CTNC) that has several bulletins, alerts and a web site (only available for its partners) with detailed information about the industry.



Another important item selected is the “Professional associations”, where the answers also include CTNC (a professional association for technology development). So we can conclude that the evaluation of the information services provided by CTNC is quite high accordingly with its relevance on the main sources of information expressed by its associated companies. There are also other associations mentioned as the “Agrupation of canned food producers”, CROEM (which the association of regional companies), Asozumos (the association of the juice producers), AIJN (which is the European associations of juice producers), Coagro (the purchasing association of juice producers), etc.

3.6.3 Practical of watch

It is necessary to advice that this part of the questionnaire should be considered carefully. The results are much higher than expected originally and probably there might be some misunderstandings on the interpretation of the questions.

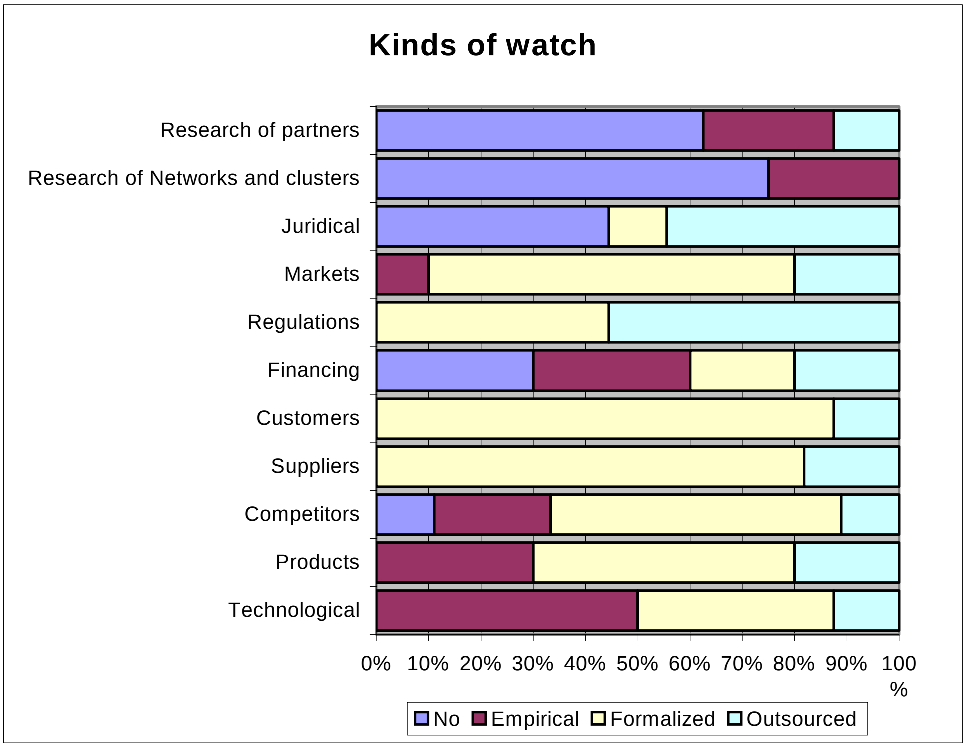
Regarding the question if the company do have a watch methodology almost two third (62,5%) of the companies answered positively: And regarding if they got a methodology of strategic information the answers have been even higher with more than 80% of the companies answering positive to this question. Some of the companies pointed out that they use the strategic information for questions related with clients (customers), trade and marketing.

But when the answer arrives on the point of expressing the tools, just one of the fruit processing companies shows that the company has implemented a formalised management system supported within the own company's intranet (it was done four years ago in that company). Just a few others mentioned the intranet and the normal answer are e-mails and meetings to share and distribute information.

Finally outsourcing is extremely low, just 38%. As outsourcing it was mainly expressed the services provided by the CTNC on technologies and regulations. The companies that mentioned private consultancy companies use them in the field of markets and sales. Just one company mention another consultancy company specialized on public policies for supporting companies from different institutions.

3.6.4 Kinds of watch

The companies concentrate their formalised watch on customers, suppliers and markets. On the other side, they do not watch partners nor networks or clusters.



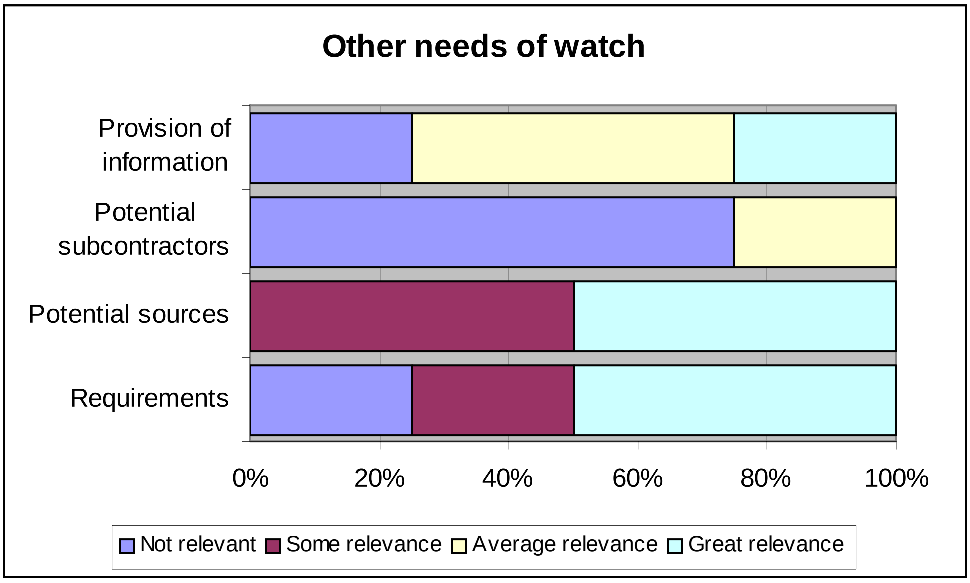
Kinds of watch

	No	Empirical	Formalized	Outsourced
Technological	0%	50%	38%	13%
Products	0%	30%	50%	20%
Competitors	11%	22%	56%	11%
Suppliers	0%	0%	82%	18%
Customers	0%	0%	88%	13%
Financing	30%	30%	20%	20%
Regulations	0%	0%	44%	56%
Markets	0%	10%	70%	20%
Juridical	44%	0%	11%	44%
Research of Networks and clusters	75%	25%	0%	0%
Research of partners	63%	25%	0%	13%

3.6.5 Other needs of watch

This part of the questionnaire should also be considered carefully because it was only answered by half of the companies interviewed. However it is amazing to consider the fact that being answered by the industry leaders (mostly the biggest companies with many resources) and also the companies with higher technology which are those with scientist continuously searching for innovations), in both cases the companies consider that it has great relevance for almost all of them to help them to define their "requirements of information" and also "potential sources of information".

Despite that fact, almost none of them need assistance to identify entities or companies that might provide them these services of watch. Probably it is because they know already them; or maybe because there are not many efficient providers of such service. Finally regarding the provision of information mostly all of the companies see it positively. So there is a clear possibility that a PSIP could be established and the companies might consider it interesting.



3.7. Networks

3.7.1 Participation of the company and the management in organisations

During the previous pages several organisations have been mentioned. Those organisations work on a daily basis on the information and strategy of the juice processing companies. Not all the companies belong to all the organisations of the following list, but at least the major part of them belong to all of them at the same time.

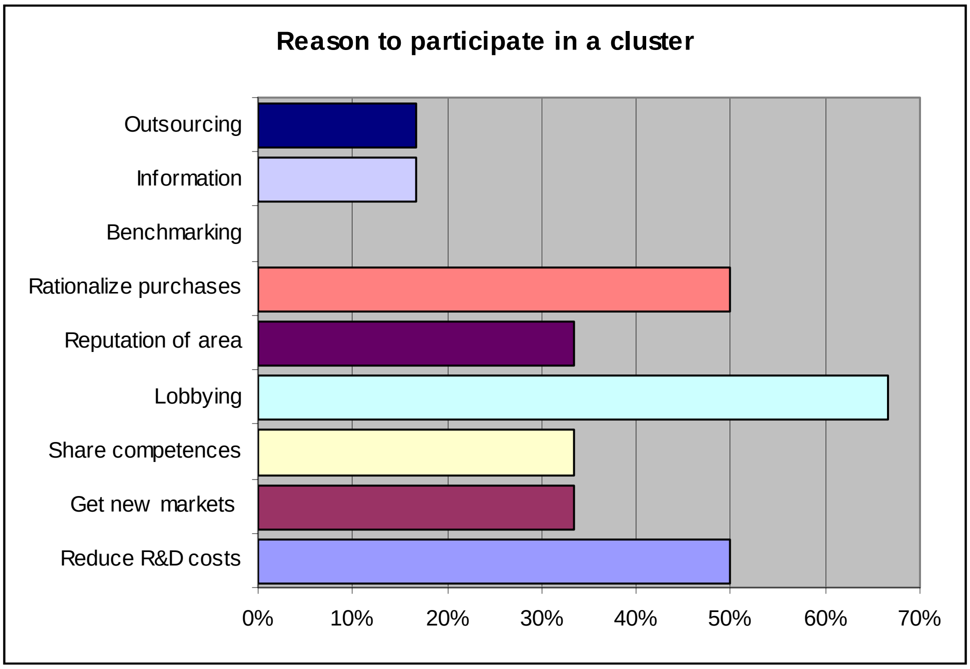
The organisations are organised accordingly with the number of companies interviewed which belong to it:

- Agrupación de Conserveros: it is the association of companies: it is important not only for the information and lobby, but in many cases its close links to the regional administration provides advantageous credits to its associates; it also negotiates every year the reference prices for acquiring the fruits and vegetables.
- CTNC: National Technology Center on Canned Food: private ruled by the companies themselves, today its president is the same as the one of the Agrupación. It provides good information on norms and law to its associated companies. But its main activity is to supply them advanced technology services and innovation through R&D projects.
- AILIMPO: Spanish interprofessional association of lemon and grapefruit. It has associated not only agricultural producers but also thirteen citrus fruits extraction companies.

- Asozumos: The Spanish association of juice producers
- AIJN: the same organisation as Asozumos in the European level

3.7.2. Motivations

First of all it is really interesting to mention that just two persons interviewed knew what a cluster is. However all the companies interviewed had answered it, showing hypothetically where would be their juices companies benefited in case that a cluster would be created. Creation of a platform for lobbying activities was the preferred answer. It is curious that the second preferred answer is to rationalize the purchases, while there is already one established[21]. Also half of the juices processing companies interviewed mentioned the reduction of R&D costs as another complementary advantage.



[21] The person which selected this option, knew already that this common purchasing entity exists for all the canned food companies associated to it through the Agrupation of Canned Food producers.

4. Cluster section

4.1. The framework: The cluster of the canned food in Murcia

Just two persons of the juice processing companies interviewed knew what a cluster is. A fast conclusion (but wrong) would be that there is not a specific cluster on juices. It is a mistake to say that there is not a cluster in the industry. By the contrary, the cluster do exists on a higher level of aggregation. It has the nucleus of activity in the approximately eighty canned food companies which transform the fruit and vegetables from the agriculture to industrialized product able to be stored and transported during long time to far distances.

Agricultural providers are a very important actor on this cluster. The agriculture does not only produce vegetable and fruit to be commercialised fresh. There is also the commercial chain to produce products able to be industrialized. And in many cases the eighty canned food companies purchase agriculture products (the basic raw material for their production) in distant regions. This is complemented by the biggest Spanish transport fleet of refrigerated trucks able to supply this fruits and vegetables in optimal conditions.

The provider of industrial inputs (packaging, sugar, glass bottles, cardboard boxes, etc.) had been founded and established close to the canned food companies answering their needs. Furthermore many of the technology providers (incorporated in the machinery) are also present in the Region of Murcia. In fact the most widely recently incorporated innovation (the aseptic treatment and filling) is provided by local engineering firms with its own equipment.

Finally almost all the canned food companies have a lobby organisation in the "Grouping of canned companies[22]". This association has a long history because it was established the 14th of December of 1924. Its main role on the last years has been to establish a common purchasing organisation, and specially to implement together with the Regional Ministry of Food and Agriculture public policies to provide financial support to the companies to recover themselves from the crisis of early nineties[23].

The cluster of canned food companies is complemented from the point of view of technology by a specialized Technology Centre on Canned Food[24] (CTNC). This technology Center is administrated and ruled by the associated companies electing a president among them. CTNC was created from the previous Association for the Research on the Canned Food[25] (AICV) on 1997. But AICV promoted by the main basic research organism of Spain (the National Council of Research – CSIC[26]), was created on 1962. So the canned industry has had for more than four decades a specialized institution, located in the same area, able to solve the main technological challenges. Both institutions, before the AICV and today CTNC, have been able to provide some technology innovations valuable for improving process or making new products. The CTNC also provides specialized training and certified analysis of food necessary by law to guarantee its safety.

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[22] "Agrupación de conserveros": http://www.cannedfoodspain.com

[23] The canned food companies association and the Regional Administration launched for the years 1997 to 1999 the RECOR plan. This Plan for the re-structuring of the canned food companies had the main goal of dynamization and modernization the commercial and industrial activity making possible to improve the competitiveness position of the companies and stabilizing the labour and employees used on the canned food industry. The main activities of the RECOR plan were to make public marketing campaigns of the products, financing of the passive assets, renewing the equipment, a quality plan of the industry to get the accreditation of the companies and the compromise of all the companies that were participating on the RECOR plan to maintain their labour.

[24] Centro Tecnológico Nacional de la Conserva y la Alimentación. http://www.ctnc.es

[25] Asociación para la Investigación de la Conserva Vegetal (AICV)

[26] Consejo Superior de Investigaciones Científicas http://www.csic.es

4.2. Cluster characterisation

4.2.1. Typology of cluster

Accordingly with the references provide by the coordinators of Stratinc[27] the existing cluster is a *Grassroots RIS*. As it has been exposed above, the regional innovation system is characterized by local initiatives. The research performed is mainly applied and leads to bring new products or better processes into the market as faster as possible. The financing of these innovative initiatives comes from private sources or regional support.

However the model proposed does not fit perfectly with the situation. The juice processing companies compete on the global market. The norms and regulation come from the European Union; on the other side the market trends and clients are not local; and finally the most breaking through innovations (GMOs, nutraceuticals, functional foods, biotechnology, etc.) come from different sources worldwide and are implemented quickly on the industry. With this changing framework we cannot say that the current situation of a Grassroot RIS will last many years. The government is answering now this framework encouraging the establishment of networks, to include many different actors in all the levels and bring new providers of knowledge, not matter their origins, to the industry. In fact there are quite important movements from the most active companies (both big and small juice companies) who are forcing the system to become a *Network RIS* in the following years.

4.2.2.- Typology of companies

Taking into account the business innovation dimension we find that the current situation fits with the model expressed as *Globalised RIS*. But we should take into account two facts:

- There is still an important number of SMEs that play an important role in the industry with recognized trademarks, new products and developing of innovations, which are later, adopted by the larger firms.
- The level of association exists, and despite its difficulties, it is a common point of collusion for solving the following situations:
    - Advanced analysis by an accredited authority (CTNC) needed for guarantee the safety of the products
    - Lobbying & representing by Asozumos and the Agrupation of canned companies.
    - Common purchasing central
    - Training of skilled workers by the faculties of chemistry (of the University of Murcia with a long tradition) and new careers as food technology, industrial engineering or agricultural engineering in two other Universities located in the same area.

4.3. Cluster questionnaire: information aspects of the cluster

The meaning of a cluster was not clear for almost none of the persons interviewed (just two answers were positive). Many of the juices companies see that type of organisations as a mean to obtain information, common promotion and specially the possibility of lobbying[28]. All the companies aren't conscious on belonging to a juice cluster. It should be considered that the companies are not placed on the same village, despite they are concentrated in the Region of Murcia, the big juices companies are each of them in clearly different locations.

Regarding the questions if the needs of the isolated company are different from the clustered business, 57% the companies answered that are the same needs. While the other companies (43%) pointed out that the needs are different. Even if the companies were integrated in a active cluster, those companies

[27] European Commission Report on Competitiveness, December 2003, which follows Braczyck et al. (1998)
[28] As it had been expressed on the section 3.7.2

which have answered negatively think that their business and products are too different from the average of the industry and they will require a different kind of information. These statements makes more complex the development of a common satisfactory PSIP because it would have to cover a wide range of utilities in order to satisfy this heterogeneous needs.

Regarding the information sharing, the one hundred per cent of the companies expressed their willingness to share information. But in all the cases they made some considerations. One of the most common consideration was the idea that of the public origin of information. Many others expressed that norms and regulations are commonly applicable and could also be shared. In this sense some of the interviewed persons expressed that the companies demand a good source to cover this field of watch. Another suggestion was that the processes are mostly the same, there are not strong innovations, and the companies got information from the providers. Those industrial machinery suppliers commonly visited competitors companies day by day, so the information could be shared.

5.- Conclusions

1. The juice industry is concentrated in the Region of Murcia with more than 60% of the production and the most relevant industry leaders of the industry.

2. Considering all the juice production, there is two groups of companies clearly differentiated. The fist one and less interesting for the Stratinc project are citrus juices extractors which made the same product without commercializing it directly and with highly standardized production process. The second group makes all kind of juices, with some differences on the process and especially on the products.

3. The strategy of growth in the juice companies comes from product innovation. There had been an big increase of demand during the last ten years (the production has doubled) that had been caused by these news products. From the other side big supermarket chains are playing an important role in the commercialization of the most standardized products. That supermarkets use their own trademarks, lowering the prices and forcing the juice companies to diversified to new products with higher prices.

4. The companies receive information from many different sources (international fairs, magazines, associations). However the most important innovation for them is the one done in products that is basically done accordingly with clients' demands (identified by the company marketing department) or by providers (technical department of the company).

5. Almost none of the companies have a satisfactory provider of information. All of them have expressed that it is needed information in norms, regulations, markets, clients and technology. This last aspect (technological innovations) is not covered by any of their current providers.

6. Only one of the companies has a true knowledge management system where all the information is stored and retrieved accordingly with complex searches.

7. All of the companies are familiar with information technologies and a web based PSIP would be a satisfactory solution for all of them.

8. Despite there is a national industrial association, none of the juice producers companies consider themselves as a cluster. There are strong differences on sides, product (citrus from the others) and there had been strong controversies on frauds and copies. The companies refer to the fruit and vegetable processing industry that is the actual cluster of the food industry in the Region of Murcia.

9. Following the typology of cluster the juice industry is today a Grassroot RIS changing rapidly to a Network RIS. Considering the business innovation dimension it is a Globalised RIS

10. More than 50% of the companies expressed that their needs of information are the same considering them alone or in a cluster. The other companies see themselves too different to be satisfied by the information provide to the rest of the companies. Despite the individualism of the companies they are willing to share own information in a common platform with their competitors. But in that case the operation of the common platform for sharing information has to be clearly specified.

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Asozumos (1997-1998) "Vigilancia Tecnológica en el sector de zumos". Informe del Proyecto Atyca.

IFRM (1991)"Conservas vegetales y zumos: Informe anual de alimentación"

Maté V.; ((2003) "Los zumos atraen a las multinacionales"Diario El País, domingo 21 de Septiembre de 2003.

Links

http://www.ailimpo.org Interprofessional association of producers of lemon and grapefruit

http://www.asozumos.com Spanish association of juices producers

http://www.aijn.org European association of juices producers

http://www.azti.es Technology Center of Food Industry

http://www.cannedfoodspain.com Association of companies, which process vegetables and fruits. Many of the juices processing companies belong to this association.

http://www.csic.es/cebas Branch of the Spanish National Research Institution that provide basic and applied research to the vegetable and fruit processing industry. It is located in the Region of Murcia and was the origin of the National Technology Center on Canned Food

http://www.ctnc.es National Technology Center on Canned Food

http://www.ocu.org Spanish consumers association

http://www.opti.org Spanish Observatory of Industrial Technology Foresight

http://www.unijus.org UNIJUS - French Interprofessional associations of fruit juices - "Union nationale interprofessionnelle des jus de fruits"

[29] Available in internet in: http://www.fao.org/DOCREP/005/Y2515E/y2515e00.htm#toc

Companies web site

http://www.amunoz.com	Antonio Muñoz y Cia
http://bradock.net	Bradock
http://www.serconet.com/cofrutos	Cofrutos
http://www.juver.es	Juver
http://www.hero.es	Hero
http://www.laverja.com	La Verja
http://www.mensajeroalimentacion.com	Mensajero Alimentación
http://www.lemonking.com	Miguel Parra e Hijos
http://riverbend.es	Riverbend
http://www.rostoy.es	Rostoy