



UNIVERSITY OF ECONOMICS IN BRATISLAVA

FACULTY OF NATIONAL ECONOMY

*"CLUSTERS, COMPETITIVENESS AND REGIONAL
DEVELOPMENT: THE CASE OF TEQUILA CLUSTER"*

DOCTORAL DISSERTATION

Study Program: Public Administration and Regional Development.

Study field: 6218 9 00 Public Administration and Regional Development.

Training center: Department of Public Administration and Regional Development

Doctoral advisor: doc. Ing. Štefan Rehák, PhD.

Mgr. Alejandro García Chaparro

Bratislava, 2015



ZADANIE ZÁVEREČNEJ PRÁCE

Meno a priezvisko študenta: Alejandro Garcia Chaparro
Študijný program: Verejná správa a regionálny rozvoj (Jednoodborové štúdium, doktorandské III. st., denná forma)
Študijný odbor: 3.3.5 Verejná správa a regionálny rozvoj
Typ záverečnej práce: Dizertačná záverečná práca
Jazyk záverečnej práce: anglický
Sekundárny jazyk: slovenský

Názov: Clusters, competitiveness and regional development: the case of Tequila cluster

Cieľ: The aim of this work is to analyze and describe the cluster relations within the tequila cluster in Jalisco, Mexico from a cluster life cycle theory perspective.

Anotácia: Dissertation will draw on the theory of industrial clusters (Porter, 1990), which emphasizes that the competitive advantage of the company is largely determined by the regional environment in which the firm is located. Industrial cluster is a geographic concentration of companies, suppliers, service companies in related sectors and institutions that compete with each other but also cooperate. Industry clusters are considered to be the basic economic unit of the region and the developed economies have often based their economic development strategies on the cluster support. The empirical part of the work will have a form of a case study of the tequila production in Mexico. It will be based on qualitative research approach using desk study research, personal interviews and a questionnaire survey of selected cluster actors in the state of Jalisco, Mexico.

Školiteľ: doc. Ing. Štefan Rehák, PhD.

Katedra: KVSaRR NHF - Kat. verej. spravy a regional. rozvoja NHF

Vedúci katedry: doc. Ing. Štefan Rehák, PhD.

Dátum zadania: 10.03.2011

Dátum schválenia: 28.03.2011

prof. Ing. Milan Buček, DrSc.
predseda odborovej komisie

COPYRIGHT DECLARATION

I, hereby, declare that I wrote this dissertation entirely by myself, and that it exclusively describes my own research. Every contribution from colleagues, professors, researchers, entrepreneurs, specialists, technicians, practitioners and graduate students are properly referenced.

Date: 01.07.2015

Mgr. Alejandro García Chaparro

POĎAKOVANIE

Na tomto mieste svojej dizertačnej práce mi dovoľte poďakovať sa tým, ktorí ma sprevádzali počas celého života a štúdia. Nikdy som si nemyslel, že nasledujúce riadky budem písať v dvoch jazykoch, ale život sa postaral, aby sa tak stalo. Nepíšem ich v anglickom jazyku ako svoju dizertačnú prácu, ale ako prejav úcty a vďaky ich radšej píšem v rodnom jazyku každého z vás.

Pred štyrmi rokmi som ešte netušil, že nastane deň ako je tento, kedy úspešne ukončím doktorandské štúdium na Katedre Verejnej Správy a Regionálneho Rozvoja. Pomohla mi v tom moja rodina, najbližší kamaráti, profesori a známi, ktorým som za to veľmi vďačný.

Rád by som sa poďakoval p. doc. Ing. Štefanovi Rehákov, PhD. za pomoc, rady a trpezlivosť pri písaní dizertačnej práce. Rovnaká vďaka patrí aj prof. Ing. Milanovi Bučekovi, DrSc. za prijatie do svojej výskumnej skupiny, za dôveru, podporu, spoluprácu ako aj za cenné rady.

Ďakujem aj všetkým členom katedry za podporu, rady a pomoc počas celého môjho štúdia na Slovensku.

Ďakujem Bohu za silu, ktorú mi dal v ťažkých chvíľach a za šťastné momenty, ktoré som zažil.

Veľká vďaka patrí aj mojej rodine, ktorá je pre mňa veľkou oporou a dodáva mi silu a radosť pokračovať ďalej a dosahovať svoje ciele. Ďakujem mojim rodičom Césarovi a Lukrécii za ich podporu a starostlivosť. Vďaka vám som dosiahol všetko to, čo som si zaumienil. Ďakujem aj svojim bratom Césarovi a Octaviovi, ktorí ma v živote mnohému naučili a dali mi viac, ako si myslia. Rád by som sa poďakoval aj svojim starým rodičom Beatriz a Margarite za ich lásku, oporu a vieru, že všetko zvládnem. Som si vedomý, že počas tých rokov, čo som na Slovensku vám veľmi chýbam, ale vedzte, že vy mne chýbate ešte viac. Ďakujem, že ste súčasťou môjho života. Ďakujem mojim

krstným rodičom, bratrancom a sesterniciam za to, že tvoríte súčasť môjho života, že ma vždy podržíte v ťažkých chvíľach a že ste ma nikdy nenechali napospas osudu. Vážim si to a obdivujem každého z vás.

Najväčšia vďaka však patrí mojej milovanej Martine, ktorej venujem túto dizertačnú prácu. Pracovali sme spolu dlhé hodiny, spravili sme si výlet do Tequily v meste Jalisco. S láskou si ma sprevádzala, podporovala a verila mi počas rokov môjho štúdia a za to Ti patrí veľká vďaka. Ďakujem, že ma sprevádzaš cestou, ktorá sa volá život. Verím, že spolu prekonáme všetky problémy, ktoré sa naskytnú.

Ďakujem aj svojej slovenskej rodine, MUDr. Mišovi Šimekovi, PhD. a MUDr. Daniele Šimekovej a ich dcére Michaela za prijatie do ich rodiny, motivovanie pri dosiahnutí cieľa a za starostlivosť, ktorou ma zahrnuli. Michaela navyše ďakujem za jej rozveseľovanie v ťažkých chvíľach.

Napokon moja vďaka patrí aj všetkým mojim kamarátom a známym, vďaka ktorým som dosiahol tento veľký cieľ.

Mgr. Alejandro García Chaparro

AGRADECIMIENTOS

En esta sección quiero agradecer a las personas más importantes de mi vida que me han acompañado a lo largo de mis años, nunca pensé escribir estas líneas en dos idiomas diferentes, pero la vida se ha encargado de que así suceda. No lo hago en inglés como el resto de mi disertación, prefiero hacerlo en los idiomas nativos de cada uno de ustedes.

Hace cuatro años no me imaginaba que iba a llegar un día como este, en el que completaría mi Doctorado en Administración Pública y Desarrollo Regional. Este sueño no hubiera sido posible sin muchas personas por lo que quiero agradecer a todos aquellos que han estado ahí y han sido parte de este increíble viaje.

Al doc. Ing. Štefan Rehák, PhD; por haber estado a mi lado en cada paso, por todos los consejos, las lecciones, paciencia y por todos los buenos momentos que pasamos. De igual manera al prof. Ing. Milan Buček, DrSc. por haberme aceptado en su equipo de investigación, por su confianza, por hacerme partícipe, por sus consejos y por su apoyo incondicional.

Dedico esta disertación a todos los miembros de mi Cátedra por brindarme su amistad y darme su apoyo incondicional durante mis estudios en Eslovaquia.

A Dios, por haber llenado mi vida con bendiciones, por darme siempre la fuerza en momentos de debilidad y la necesaria humildad en los momentos de alegría.

Enormemente le agradezco a mi familia todo su apoyo y amor. A mis padres; César y Lucrecia, gracias a ustedes conquistamos una meta más, gracias por haberme formado y por procurar siempre por mí. A mis hermanos César y Octavio; por complementar la mejor familia del mundo, con todas nuestras diferencias y características especiales, ustedes me han enseñado más de lo que se puedan imaginar.

A mis abuelas, Beatriz y Margarita, por su gran amor, se que a ustedes les he hecho mucha falta durante estos años de ausencia del país, pero sin duda que las que me han

hecho falta han sido ustedes, gracias por ser parte de mi vida, pueden estar seguras de que siempre las llevare en mi corazón.

A mis Tíos, Esteban, Eva Martha y Gerardo, por ser parte activa de mi vida, por estar siempre conmigo y no dejarme ni por un segundo pese a la distancia, a cada uno de ustedes les tengo un gran cariño y admiración. A todos mis tíos y tías, primos y primas.

Sin duda que no podía faltar mi querida Martina, a ti en especial te dedico esta disertación, pasamos largas horas trabajando juntos, hicimos el viaje a Tequila en Jalisco, me has acompañado durante estos años, siempre me has dado tu apoyo incondicional, tu cariño y sobre todo tu gran amor. Gracias por caminar conmigo de la mano, por aceptar nuevos retos y cumplir todos nuestros objetivos. Gracias mi amor por ser mi compañera en este viaje que se llama vida.

A mi familia Eslovaca, al MUDr. Mišo Šimek; PhD y MUDr. Daniela Šimeková, por aceptarme en su familia como un miembro más, por motivarme a llegar a la meta, por sus cuidados y por brindarme el calor de un hogar. A Michaela Šimeková, por complementar la familia ideal, por ser tan divertida y ocurrente.

Y a todas aquellas personas especiales que he tenido la dicha de conocer en mi vida y que han contribuido y contribuyen a formar la persona que soy.

Mgr. Alejandro García Chaparro

ABSTRACT

GARCÍA CHAPARRO Alejandro: Clusters, competitiveness and regional development: the case of tequila cluster - University of Economics in Bratislava. Faculty of National Economy; Department of Public Administration and Regional Development. Supervisor doc. Ing. Štefan Rehák, PhD. – Bratislava: FNE UE, 2015. 173 pages.

The tequila industry constitutes a priority for the Municipality of Tequila in the State of Jalisco and for all Mexico, due to it is one of the elements by the most recognized the country. Its dynamism has changed in recent years; tequila has gone from being a drink consumed by the working classes to compete with the best world-class drinks, taking an ever more active presence in the international markets. This research has as main objective to analyze the cluster of the tequila industry based on the terms offered by the Municipality of Tequila in the State of Jalisco, Mexico. With this study case, it seeks to know in which stage the Cluster is, the same way it seeks to understand its operation and its importance for the regional development of the region. In the research a comparison was made between the best practices of a similar industry, is the case of the cluster of the wine in the Napa Valley; California, with the conditions observed in the region of Tequila, Jalisco. The result was that there is still a significant gap, between both regions, however the conditions will never be the same, despite the fact that are similar industries, between Mexico and the United States of America, there are large differences in economic, political and social. Public policy is essential, as well as the economic and financial aspects and industrial competitiveness. Is expected that the results of this research serve as input to be able to define specific strategies of clusterization to create conditions in the region to convert the Tequila industry in a successful Cluster of the region of Jalisco, Mexico.

Keywords: *Cluster, regional development, tequila, public policy, cooperation, Jalisco; Mexico.*

ABSTRAKT

GARCÍA CHAPARRO Alejandro: Klastre, konkurencieschopnosti a regionálny rozvoj: prípad klastra tequily - Ekonomická Univerzita v Bratislave. Národohospodárska Fakulta; Katedra Verejnej správy a regionálneho rozvoja. Školiteľ: doc. Ing. Štefan Rehák, PhD. – Bratislava: NHF EU, 2015, 173 strán

Klastre, konkurencieschopnosti a regionálny rozvoj: prípad klastra tequily

Priemysel tequily je prioritou tak pre oblasť Tequila v štáte Jalisco ako aj pre celé Mexiko, pretože je to jedna z najuznávanejších položiek v krajine. Jeho dynamika sa za posledné roky zmenila, tequila prestala byť nápojom pitým nižšou triedou a súťaží s nápojmi na svetovej úrovni a získava stále aktívnejšiu pozíciu na svetových trhoch. Hlavným cieľom daného výskumu je analýza priemyslu tequily na základe podmienok, ktoré ponúka región Tequila v mexickom štáte Jalisco. V tejto prípadovej štúdii sa snažíme nájsť v akom stave sa nachádza klaster a taktiež aj pochopiť jeho fungovanie a dôležitosť pre rozvoj regiónu. Vo výskume sa uskutočnilo porovnanie medzi najlepšimi postupmi podobného priemyslu, čo je prípad klastra vína v Napa Valley, s podmienkami spozorovanými v regióne Tequila, Jalisco. Výsledkom bol fakt, že stále existuje značný rozdiel, takže je nutné zlepšiť súčasnú situáciu v podmienkach medzi oboma regiónmi, hoci podmienky nebudú nikdy rovnaké, napriek skutočnosti, že ide o podobné priemysle, medzi mexikom a Spojenými štátmi sú veľké politické, ekonomické a sociálne rozdiely. Verejná politika je rozhodujúca, rovnako ako ekonomické a finančné aspekty a priemyselnú konkurencieschopnosť. Očakáva sa, že výsledky tejto štúdie môžu slúžiť ako vstup na to, aby boli schopné definovať konkrétne stratégie klasterizácie pre vytvorenie podmienok v regióne na premenenie priemysla tequily v úspešný klaster v regióne Jalisco v Mexiku.

Kľúčové slová: *Klaster, regionálny rozvoj, tequila, verejná politika, spolupráca, Jalisco; Mexiko.*

RESUMEN

GARCÍA CHAPARRO Alejandro: Clústers, competitividad y desarrollo regional; el caso del clúster del tequila – Universidad de Economía de Bratislava. Facultad de Economía Nacional; Departamento de Administración Pública y Desarrollo Regional. Director de Tesis. doc. Ing. Štefan Rehák, PhD – Bratislava: FEN UE, 2014. 173 páginas.

La industria del tequila constituye una prioridad, para el Municipio de Tequila en el Estado de Jalisco y para todo México, debido a que es uno de los elementos con los que más se reconoce al país. Su dinamismo ha cambiado en los últimos años, el tequila ha pasado de ser una bebida consumida por las clases populares para competir con las mejores bebidas de clase mundial, teniendo una presencia cada vez más activa en los mercados internacionales. La presente investigación tiene como principal objetivo analizar el clúster de la industria del tequila en base a las condiciones que ofrece el Municipio de Tequila en el Estado de Jalisco, México. Con el estudio de este caso, se busca conocer en qué estado se encuentra el Clúster, del mismo modo se busca entender su funcionamiento y su influencia en el desarrollo regional de la región. En la investigación se hizo una comparación entre las mejores prácticas de una industria similar, es el caso del Clúster del Vino en el Valle de Napa; California, con las condiciones observadas en la región de Tequila; Jalisco. El resultado fue que todavía hay una brecha significativa, por lo cual es necesario mejorar la situación actual de las condiciones de la región. Sin embargo, pese a que se trata de industrias similares las condiciones nunca serán las mismas, entre México y los Estados Unidos de América existen grandes diferencias políticas económicas y culturales. La política pública es fundamental, así como el aspecto económico y financiero y la competitividad industrial. Se espera que los resultados de la presente investigación sirvan de insumo para poder definir estrategias concretas de clusterización que permitan crear las condiciones en la región para convertir a la Industria del Tequila en un Clúster exitoso de la región de Jalisco; México.

Palabras Clave: *Clúster, desarrollo regional, tequila, políticas públicas, cooperación, Jalisco; México.*

TABLE OF CONTENTS

<i>INTRODUCTION</i>	16
<i>CHAPTER I</i>	18
<i>THEORETICAL FRAMEWORK</i>	18
1.1 ORIGINS OF THE CONCEPT CLUSTER.....	18
1.2 SIMILARITIES BETWEEN THE DIFFERENT CONCEPTS	20
1.3 WHEN AND WHY IS IT APPROPRIATE PROMOTE CLUSTERS.....	22
1.4 CLUSTER FOUNDATION.....	24
1.5 THE INITIAL MODELS FOR IMPLEMENTATION AND THE BENEFITS OF THE CLUTTER.....	25
1.6 CLUSTER INITIATIVE.....	27
1.7 CLUSTERS LIFE CYCLE	30
1.7.1 Stages of the life cycle	32
<i>CHAPTER II</i>	37
<i>OBJECTIVES OF THE RESEARCH</i>	37
2.1 GENERAL OBJECTIVE OF THE DISSERTATION	37
2.2 SPECIFIC OBJECTIVES	37
2.3 HYPOTHESIS OF THE RESEARCH.....	37
2.4 RESEARCH QUESTIONS.....	38
<i>CHAPTER III</i>	39
<i>METHODOLOGY OF THE RESEARCH</i>	39
3.1 HISTORY OF THE METHODOLOGY.....	39
3.2 DESCRIPTION OF THE METHODOLOGY	39
3.3 DESCRIPTION OF THE METHODOLOGY OF DIAGNOSIS OF THE INDUSTRY .	40
3.3.1. Determination of the Generic features of the Industry	40
3.3.2. Adaptation of indicators and metrics to the specific case	41
3.3.3 Location and identification of best practices.....	42
3.3.4. Description of the local industry and the region	44
3.3.5 Comparison between best practices and conditions in the region that determine to the industry and region under study	51
<i>CHAPTER IV</i>	52
<i>CLUSTERING AND COMPETITIVENESS; ANALYSIS OF THE SELECTED INDUSTRIES</i> ..	52
4.1 GENERIC FEATURES OF THE ALCOHOLIC BEVERAGES INDUSTRY.....	52
4.1.1 Industry of distilled spirits.....	53

4.1.2 Industry of the wine.....	54
4.1.3 Value chain; the case of the tequila industry.....	54
4.2 LOCATION AND IDENTIFICATION OF BEST PRACTICES IN RELATION TO THE TEQUILA INDUSTRY – WINE CLUSTER IN NAPA VALLEY CALIFORNIA	56
4.2.1 Indicators and metrics to the wine industry.....	57
MARKET CONDITIONS.....	57
STRUCTURAL ENABLERS	61
CONDITIONS OF PUBLIC POLICY	62
REGIONAL ATTRACTIVENESS.....	64
ENTREPRENEURIAL CULTURE / BUSINESS CULTURE	67
4.3 DESCRIPTION OF THE TEQUILA INDUSTRY AND THE REGION	67
4.3.1 Structure of the industry of tequila in Jalisco.....	68
4.3.2 Features about the industry.....	72
4.4 CAPACITY OF CLUSTERIZATION OF THE MUNICIPALITY OF TEQUILA, STATE OF JALISCO; MEXICO.....	77
Market Conditions.....	77
Structural enablers.....	80
Economic and Financial factors	81
Conditions of public policy	82
Social and Cultural Drivers	83
Regional attractiveness.....	84
Industrial Competitiveness	85
Entrepreneurial culture / Business Culture.....	86
<i>CHAPTER V.....</i>	<i>87</i>
<i>ANALYSIS OF THE INDUSTRY FROM THE POINT OF VIEW OF THE EXPERTS.....</i>	<i>87</i>
5.1 DETERMINATION OF THE IMPORTANCE OF EACH FACTOR AND ANALYSIS OF THE CURRENT SITUATION OF THE INDUSTRY OF TEQUILA IN TEQUILA; JALISCO.....	87
<i>CHAPTER VI</i>	<i>96</i>
<i>DISCUSSION OF THE RESULTS</i>	<i>96</i>
6.1 CLUSTERS AS STRATEGIC COMPETITIVE ADVANTAGE	96
6.2 BENEFITS OF CLUSTERIZATION FOR A REGION	97
6.2.1 Introduction to the benefits	97
6.2.2 Detail of the benefits and best practice examples	99
6.3 OBSTACLES IN THE CREATION OF A CLUSTER	104

6.4 OBSTACLES IN THE COOPERATION.....	104
6.5 CLUSTERS IN LATIN AMERICA	105
6.6 ANALYSIS OF THE FACTORS; IMPORTANT REMARKS.....	106
6.6.1 The scarce presence of the university.....	106
6.6.2 The lack of a shaft or guiding principle for growth.....	108
6.6.3 Little development of social capital and innovation.....	109
6.6.4 Few networking activities and state innovation	109
6.6.5 Shortage of venture capital and inadequacy of the conditions	110
6.6.6 Attraction of talent	111
6.6.7 Excessive administrative bureaucracy.....	111
6.6.8 Institutional Gear.....	111
6.7 RECOMMENDATIONS TO MEET BY THE TRIPLE HELIX	118
6.8 FUTURE CHALLENGES OF THE CLUSTER.....	121
<i>CONCLUSIONS</i>	123
<i>BIBLIOGRAPHY</i>	126
MICHAEL STORPER AND RICHARD WALKER: The Capitalist Imperative (1989)	129
<i>WEBSITES CONSULTED</i>	132
<i>ANNEX I</i>	134
QUESTIONNAIRE FORMAT	134
<i>ANNEX II</i>	144
PROFILE OF THE COMPANIES WHO PARTICIPATED IN THIS RESEARCH	144
SUPPLEMENTAL VERSION OF THE DISSERTATION IN SLOVAK LANGUAGE.....	151

LIST OF FIGURES

Figure 1.1 Different actors involved in the cluster

Figure 1.2 Porter Diamond Framework, 2003

Figure 1.3 Cluster initiative objectives

Figure 1.4 Cluster Initiative Target Board

Figure 1.5 Emerging Cluster

Figure 1.6 Growing Cluster

Figure 1.7 Sustaining Cluster

Figure 1.8 Declining Cluster

Figure 3.1 Anatomy of the California Napa Valley cluster of wine.

Figure 4.1. Tequila productive chain

Figure 4.2 Map of the Napa Valley; California

Figure 4.3 Structure of the Tequila Cluster

Figure 6.1 - Areas of Opportunity

Figure 6.2 - Recommendations to meet by the triple helix

LIST OF TABLES

Table 3.1 Respondents from the private initiative

Table 3.2 Respondents from the government

Table 3.3 Respondents from the academic sector

Table 3.4. Types of experts respondents to the questionnaire

Table 5.1. Results of Public Policy Conditions

Table 5.2. Economic and Financial Factors Results

Table 5.3. Industrial Competitiveness

Table 5.4 Entrepreneurial Culture

Table 5.5 Social and Cultural drivers

Table 5.6. Results market conditions

Table 5.7. Results Structural Enablers

Table 5.8. Regional attractiveness

Table 6.1 Comparison between both industries

LIST OF GRAPHS

Graph 1.1 life cycle of the cluster.

Graph 4.1 Participation by Country in the Wine Industry

Graph 4.2 Countries with an increasing trend in production

Graph 4.3 Consumption of Agave for Tequila and Tequila 100% Agave.

Graph 4.4 Total production: Tequila and Tequila 100%

Graph 4.5 Exports by Category Tequila and Tequila 100% Agave

Graph 4.6 Exports by form

Graph 4.7. Production of Tequila in Jalisco

Graph 4.8. Tequila exports per country

Graph 4.7 Tequila consumption per country

INTRODUCTION

The generation of clusters has formed part of the development strategy of first world countries from long time ago (Scheel & Gomez, 2007), in which amply has been demonstrated its multiplier effect for the economic and social development of the regions. According to Porter *"The development of a cluster represents a new and complementary way to understand an economy, organize the economic development and define the public policy"* (Porter. 1998). The technological activities, economic and entrepreneurial tend to be in a specific geographic area which generates patterns of specialization at the national and regional level. On the other hand, the performance of organizations is affected continuously by the conditions that prevail in the environment (Porter & Sölvell, 1999). One of the characteristics of wealth and prosperity of the industrialized countries is the existence of a well-structured industrial system, capable of converting the value of technological innovation in high competitiveness, industrial productivity, attractivity and regional wealth (Scheel. 2003). After observe many attempts of clusterization in different countries, it has been able to determine that the presence of regional industrial conditions, necessary and sufficient for clusterization is vital to the successful generation of clusters. If there are no such conditions, it is necessary to work in the areas of opportunity that offers the region and which are relevant to the development of a cluster in a specific industry. Throughout these last decades, several researchers and critics have been contemplating why some companies, especially those established in nations, regions, or circles of private businesses, have been able to achieve leadership positions at the global level, while at other independent companies developed strategies less innovative. The trigger for these studies was that, some companies located in regions with similar levels of development obtained considerable differences with respect to successful business. Among other things, the companies were differentiated by their ability to improve productive and innovative capacity, but especially in terms of competitiveness. Therefore, the economic development based on clustering has become an increasingly popular for researchers and professionals in this field.

It is important to respond to the following question before analyzing in which stage the cluster is: *How is the current situation of the region in which the cluster is located? And what is necessary to arrange in order to have a successful cluster?*

In Mexico, the Municipality of Tequila in the State of Jalisco and its surroundings denominated *designation region of origin*, offers a great opportunity for have a global class industry related to the production of alcoholic beverages, especially for the production of tequila, symbol of the Mexican identity. One alternative for the successful develop of the industry (one of the best), is the improvement of the cluster, and its analysis in order to determine how the cluster works and its interrelation with all the actors in the industry. Cluster, as Michael Porter defined it, is a “*several formally independent firms and organizations located together that do similar things or contribute to the production of similar products*”. A cluster is a trigger for the economy development and the industry growth. A reason for make an analysis of cluster in the city and reach a gain-gain relationship for both parts (Industry and Region) and lead us to best results.

OBJECTIVE

Analyze in which stage is the Tequila Cluster, based on the cluster life cycle theory, and contribute to the understanding of the functioning of the tequila cluster in the Municipality of Tequila, Jalisco; Mexico and its influence on the competitiveness of the regional development in the denomination region of origin, based on the particular conditions of the Mexican idiosyncrasy.

CONTENT OF THE DISSERTATION

The structure of this project begins with an introduction of the dissertation presented in this section and the objective to being addressed. A review of the literature is presented in Chapter I. It will discuss the concept of cluster as well their origins and the similarities of the same between different papers that have been made by researchers and professionals in the area, explaining when and why it is appropriate promotes clusters. In addition, we will present the life cycle theory of clusters. In Chapter II is presented the objectives of the research. Chapter III describes the methodology that was used for the research. In Chapter IV, the method is applied to the industry of alcoholic beverages, and is presented a comparative research between the wine cluster in Napa Valley California and the tequila industry in Tequila Jalisco. Chapter V; presents the impressions of the surveyed people about the stage of the tequila cluster. In Chapter VI; is presented the discussions about the research and recommendations emitted by the actors of the triple helix, academia, business sector and government. Finally in the last section are presented the conclusions of the research.

CHAPTER I

THEORETICAL FRAMEWORK

1.1 ORIGINS OF THE CONCEPT CLUSTER

The concept of a cluster began with Alfred Marshall; British economist who had begun to introduce this concept through the observation of the creation of industrial districts. Marshall emphasized the apparent importance of industrial location, noting in the British Industrial regions of the nineteenth century and the dimensions of the localization, as evidenced by his famous writing about the secrets of the industry. Although Marshall referred to technological dynamism of the British Industrial districts, not clearly distinguished between the location as a means of reducing the costs of production under conditions of uncertainty of the market, and the location as a pillar of the technological trajectory of an industry. In the above definitions, in fact, the geographical concentration was not seen as an important feature of a cluster. Czamanski (1979); refer to the groups as *"a group of industries connected by large inflows of goods and services"*. Even Porter (1990), in his first contribution to this topic, defines an industrial group as *"a set of related industries through relations buyer-supplier, or by common technologies, buyers or common distribution channels, and the common places of work"*. Porter provides a simple definition of two types of clusters: vertical cluster and horizontal cluster. The vertical groupings are made by the industries that are linked through relations between buyers and sellers, while the horizontal groupings include the industries in which the other types of common elements (market, technology, labor, etc.) prevail. The geographical proximity emphasizes the advantages of industrial clusters, but is not a prerequisite to its identification. The geographic concentration as a key element in the definition of cluster, appears later in the work of Redman (1994), in which he describes a cluster as *a "geographical concentration marked by their production chains for either a product or a range of similar products"*. Also emphasizes the influence of the institutions for the competitiveness of these concentrations as can be in infrastructure, education, innovation and development. On the other hand, Rosenfeld (1995) reaffirms his definition, the concept of geographical concentration, and identifies a cluster as *"a timely agglomeration, geographically*

defined by similar companies, related between them so that together they are able to achieve greater competitiveness". The companies come together in groups in order to increase economic activity and facilitate business transactions. In the writings of Jacobs (1996) presents a more in-depth examination of the different definitions of industrial clusters, although these authors also use the first definitions of cluster made by Porter, on the vertical and horizontal groups as the basis for his writings. Jacobs and Demand argue that *"there is not a correct definition of the concept of cluster ... different dimensions are of interest"*. Expand on the definitions of the industrial clusters vertical and horizontal to identify the key dimensions that can be used to define groups.

These include:

- The geographical grouping of economic activity.
- Horizontal and vertical relationships between industrial sectors.
- Use of common technology.
- Presence and collaboration of the central actors of the cluster.
- The quality of interconnection between the companies or the cooperation between these.

Once again, Rosenfeld (1997) adds other factors in the definition of cluster that include: the size of a cluster, the economic importance and/or strategic group at the local level-global, the products being marketed or services they use, and the use of common goods. However, in his writings it is not enacted definition of clusters exclusively by the size of the industries or the scale of jobs created, and gives examples of many clusters that are efficient in small industries related to each other, but that does not necessarily have pronounced concentrations of employment. According to Rosenfeld (1997), a grouping of the sector is *"a geographically limited concentration of similar companies, related or complementary, with active channels for commercial transactions, communications and the dialog, which share specialized infrastructure, labor markets and services, and are faced with opportunities and common threats"*. The definition of Rosenfeld clearly underscores the importance that he puts in the social interaction and cooperation among companies to determine the nature of a cluster. On the other hand, the definition of the latter stresses the importance of infrastructure specialist in the creation of a prerequisite for the establishment of a cluster. Recent contributions (Porter, 1998; Swann, Prevezer and Stout, 1998; Cooke, 2000; Feser y Bergman, 2000) strengthen the idea of a geographical concentration, assuming a regional perspective to identify clusters. From

all the different definitions assumes the following definition of cluster: *"a geographic concentration of actors in vertical and horizontal relations, showing a clear trend to cooperate and share their expertise, all involved in a localized infrastructure support"*.

1.2 SIMILARITIES BETWEEN THE DIFFERENT CONCEPTS

In summary, the main features that emerge from the previous section and that have a prominent role in a cluster are:

- Formal relations input-output, which encourage the creation of value chains.
- Geographic concentration of companies for greater synergies between actors.
- Share specialized infrastructure for greater transfer of information.

From these main features and other several definitions, clusters, all of them have aspects in common. Mainly, the factors that differentiate a cluster are divided into:

- Joint actions: As a result of relationships which are displayed this type of actions that are wanted in an intentional form.
- Collective efficiency: network of collaborative relationships between the actors in a cluster.
- External Economies: Includes the two preceding paragraphs and their impact leads to lower cost of transport, higher levels of innovation and job training, the presence of specialized suppliers, higher rates of productivity, greater attraction of customers and the possibility of sharing existing facilities. In summary, on the basis of external economies is obtained a few benefits of collective action involuntary (rush) or by voluntary actions.

Within these clusters has to exist a level of cooperation between individual companies and groups of companies that join together to form business associations (Rosenfeld 1997):

- Vertical: Cooperation that occurs with suppliers or customers.
- Horizontal: Cooperation that occurs between competitors.
- Institutional: We can differentiate between various groups of institutional nature:
 - Vocational training centers, technology centers, universities.
 - Centers of quality improvements (certification, testing laboratories, quality control).
 - Specialized Training.
 - Dissemination of technologies and techniques of management.

- Marketing actions and market analysis.

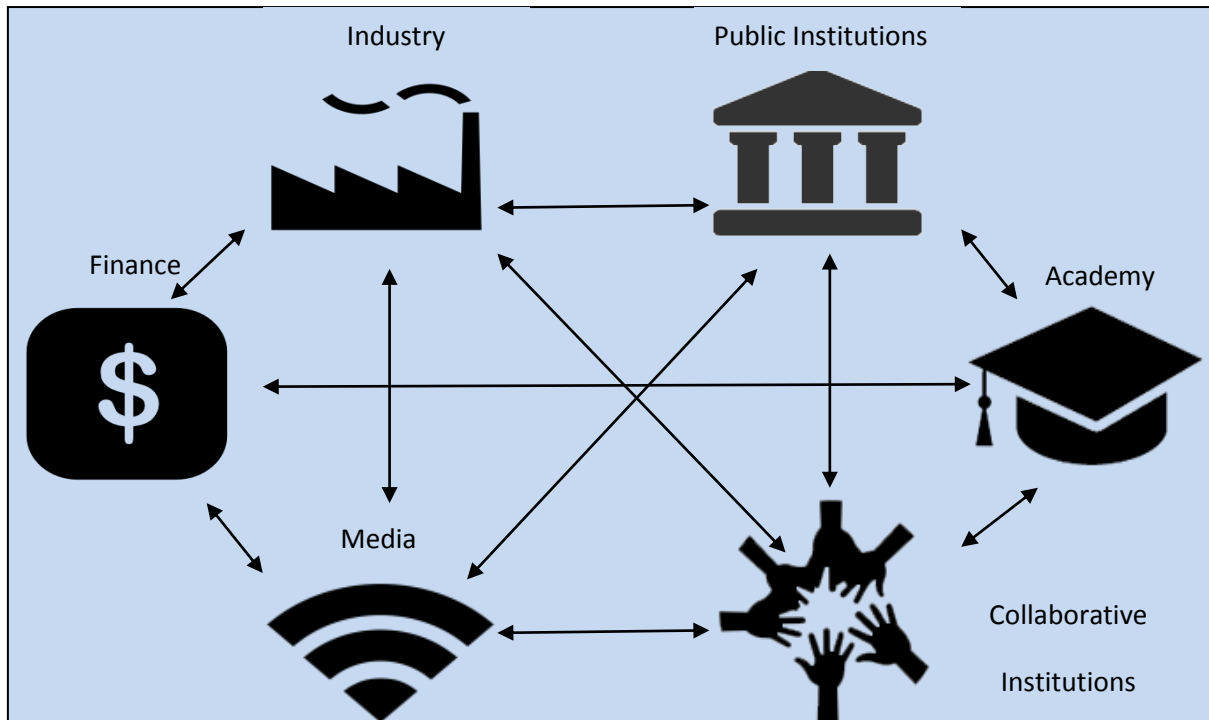
The cooperation occurs on the part of all of the actors that participate (Figure 1.1 Different actors involved in the cluster)

- Large companies and SMES. Private industry includes competitors, suppliers of goods (machinery) and services (consulting, legal services and business) buyers, and companies with related technologies that share common factors.
- Financial Institutions. Includes the traditional banks, commercial banks, venture capital, and private investment.
- Public actors. At this point include:
 - Institutions both local and regional and agencies involved in: policies of industrial and economic development (example: support to SMES, entrepreneurship, work of networks, cluster and investment attraction), regional policy (example: adjustments of funds, infrastructure, and programs of Cluster), politics of science and technology (innovation, an incubator, university-industry co, technology transfer and technology cluster).
 - Academic actors, which include universities, research institutes, offices of technology transfer and scientific laboratories.
 - Private organizations and public-private collaboration, (NGO, chambers of commerce, organizations of clustering, etc.)
 - Different media that disclosed the cluster and collect their initiatives more influential in society.

When the factors that influence business competitiveness are analyzing, considered macroeconomic variables, sectoral and intra-firm character. By the Public Administration there is a clear interest in trying to encourage Actions which could generate an improvement in the competitive advantage of companies which, in turn, represents an improvement of the competitiveness of the region in which they are located. Among these measures, the creation of clusters has received very good welcome. The main advantage of the cluster is derived from its contribution to improve the advantage competitive of the companies that compose it, that would, in turn, improved the competitiveness of the region in which it is situated, the benefits derived from the will of cooperation, that is why it is very important the focus strategic, and

have to be very clear, it comes to this type of entrepreneurial approach, that is to say, clearly identify the vision, as always which discredit this point is lost the evolutionary course of the cluster.

Figure 1.1 Different actors involved in the cluster



Source: Sölvell, Örjan: 2008: p. 13

1.3 WHEN AND WHY IS IT APPROPRIATE PROMOTE CLUSTERS

One of the greatest risks of analyzing clusters is unrealistic expectations. In order to promote a realistic assessment of the status of the cluster, it is necessary to consider one of the standard instruments that are used in the analysis of the clusters, the "diamond Model" by Michael Porter. This diamond summarizes the results of basic research of Porter on the competitive advantage of nations, therefore we will use as a tool for evaluating the desirability or otherwise of the analyzing of a cluster. The eight points on which it focuses the analysis of the tequila cluster presented in this dissertation is based on the Porter's Diamond. According to Porter, there are four essential factors to determine the competitiveness and in each one of them there are a few points to consider seeing how it would affect your implementation on the set of companies in the same industry. Corporate strategies, business structures and rivalry: Reference to the investment. The rivalry contributes to the competitiveness of the region:

- Studies on the localization of similar companies
- Varies as the price of the product
- Innovation
- Degree of product differentiation

Related industries: Refers to the cooperation between industries. Companies exchange information and knowledge.

- Existence or absence of related and complementary industries

Conditions of the factors: Factors of production (labor, infrastructure and educational institutions). Conditions change in each of the clusters.

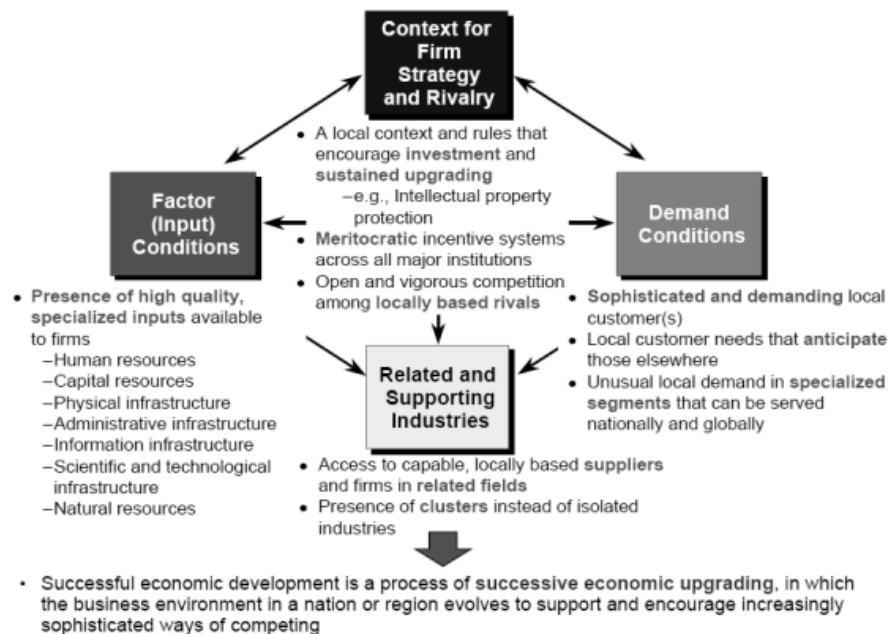
- Availability of skilled labor
- Adequate infrastructure
- Conditions of factors of production
- Development of capabilities

Demand Conditions: motivates the decisions of innovation. Helps to uncover the needs of consumers: Market Type: has to be taken into account when for example, the local market favors the low pricing and in the long run it produces less quality in products with what its competitiveness decreases.

Below is a figure that clarifies the different actions and relationships that they have to have the above factors according to Porter: Porter has mentioned that clusters should be the core to any competitiveness agenda, including developing and developed countries. In real life, many developed countries in the Organization for Economic Cooperation and Development have conducted studies in which clusters have been the central topic. Europe, has embraced the cluster concept, the same as numerous U.S. states. Before the Silicon Valley phenomena, Connecticut served as the best example of a state that has adopted the Porter approach. Some developing countries have also enclosed Porter's cluster model to establish regional and national development policies. Porter also argues that this embraced development theory conceptualizes the economy as "factor-driven." On the contrary, comparative advantage of countries when involved in international trade has been traditionally determined by such factor endowments as land, natural resources, labor, and the population. It's known that South Carolina enjoys plenty of

labor available for low-skill industries, but they share this wealth with other regions and other developing countries.

Figure 1.2 Porter Diamond Framework, 2003



Source: Porter Diamond Framework, 2003

All the above points help us to see that a sectoral group should be competent in some basic areas, such as a very specific type of raw material. If on the contrary, their capacities are maintained at a low level and generic, the initiative to promote the cluster will not help because the negative consequences that would generate (rivalry - >lower prices - > product differentiation null - > lower degree of innovation - > worst quality - > competitiveness low) would be greater than the positive.

1.4 CLUSTER FOUNDATION

In many of the actual clusters, the roots of its development dating back many years ago (Berk 2005). For example, the steel industry around Sonora State in Mexico owes its existence to the coal deposits in the region, which provide energy at affordable prices. Today, there is still a huge cluster of steel and other technology companies located around the city, although the local coal deposits have been losing importance. Natural factors such as the raw materials or the location in a commercial route can have important effects on the presence of certain clusters that are noticed for many years after they have lost their direct influence. Another root for the development of the cluster

may be the existence of initial institutions such as corporations or universities (Casalet 2008), which act in the time as an anchor for the cluster resulting in new companies and attract investment from companies outside the region. In San Diego, the presence of the Navy of the USA with a leading research center in the communications provides the basis for the development of a dynamic telecommunications cluster around Qualcomm¹. In North Carolina², the network of universities in the triangle of the research in the 1960s led to the development of one of the group's leaders in biotechnology in the U.S. Current research shows that the evolution of the clusters may take several years, often decades. Many groups have been developed without the presence of all the dedicated efforts to update them. The economy of the inherent proximity has been sufficient for that, with the passage of time, attract an increasing number of businesses and other institutions, giving rise to a virtuous cycle often derived by a fortuitous event. But other groups have developed much faster due to the decisive action of the regional leaders who had seen the potential in your region for the cluster.

1.5 THE INITIAL MODELS FOR IMPLEMENTATION AND THE BENEFITS OF THE CLUTTER

In the already long experience on regional development policies in European countries, could be highlighted at least four distinct approaches or models under which have been approximately clusters: the poles of development in the years 70^s, the industrial districts of Italian base, the model of the diamond of Porter, and the valleys technological inspired in the phenomenon of Silicon Valley. All the approaches, in terms of economic policy, previously mentioned agglomeration seek to generate business, but each one of them involves completely different conceptions. In the years 60^s, the regional policy in several European countries adopted the concept of developing countries (Beaudry 2003). Based on the indicative planning. Interpreted as anti gambling, indicative planning was an attempt to implement economic policies highly complex in the allocation of resources. Both the Netherlands and France were drawn up and implemented indicative development plans, and so did Spain, although to a lesser degree. The pole of development started from the idea of exploiting the economic ties to supposedly generate in a territory the establishment of a large company, almost all public security, thanks to the direct employment created and demand direct and induced

¹ Company developer of CDMA technology.

² Universities of North Carolina

associated. The mechanism of the expansive development pole had more to do with the Keynesian multiplier with external economies of current models of cluster. The time showed that the introduction of a large company, typically of the sector of heavy industry or industrial chemistry, in an area with limited prior industrial experience was not sufficient to attract more private investment, and form a cluster. In the years 80^s and 90^s the model of the which to learn and to which imitate the industrial districts were based on the Italian model, concentrations of small niche companies, belonging to traditional consumer industries, in an institutional environment characterized by historical social relations, common values, mutual understanding and cooperation between firms and with the administration local. The interest toward the industrial districts is located in the writing of Piore and Sabel entitled. 'The Second Industrial Divide' (1984), where it was postulated that in the new context of continuous technical progress and diversification of the demand, the flexibility of small and medium-sized enterprises, toward more efficient that very large enterprises to adapt to change. The pass of time has allowed us to check that small firms, belonging to traditional sectors, in many cases they endured better than large companies the industrial crisis in the early eighties and other industrial crises later, the growth is based in innovation activities linked to the new information and communication technologies (I.C.T).

In Mexico, the equivalents of the industrial districts are the so-called local production systems (Scheel & Gomez, 2007). Even with considerable institutional differences of the Italian industrial districts, local systems studied in Mexico share many characteristics with the Italians, and in particular, that belong to traditional productive activities or with innovation intensity medium, or low, which is not inconsistent with that the companies of the clusters adopt technological practices and management. The model of the diamond of Porter (1990) contributed since its inception, being a methodology for the analysis of industrial districts, which according to some authors is similar with the specificities of the Italian clusters (Scheel & Gomez, 2007). The Mexican Government adopted the analytical perspective of Porter in the early nineties and studies were made of the existing cluster based on the methodology of the diamond that identifies the four factors of competitiveness cluster previously exposed: count with a source of demand sophisticated, access to advanced productive factors, quality of suppliers, and a competitive environment. As has been pointed out above, a central aspect of the diagram of the diamond of Porter is that its application does not

necessarily imply geographical delimitation local or regional cluster. Even before that the geographic cluster, Porter applies its analysis to the national industrial clusters. And indeed, some studies take the term cluster to refer to the set of companies that set up a sector at the national level. The cluster model by Michael Porter, explains the advantages of cluster companies by external economies of type spillovers or dissemination of technology. Its primary focus lies in the importance of the competition, and the productive links with suppliers of inputs and services, such as elements that contribute to increase the competitiveness of firms. As has been pointed out, the analysis of the cluster it does not have to have a local geographic referent, the geographic referent may be an entire country, but there is always a spatial dimension as the cluster determines the level of competitiveness of its businesses and competitiveness is a relative factor, in relation to other clusters or companies.

With the phenomenon of Silicon Valley and the rapid growth of the I.C.T sector (computers, software, internet, telecommunications equipment), the cluster model that has generated the most attention in recent times, it is the concentration of companies high-tech where the centripetal force are external economies, and in particular the spillovers of knowledge. The type of technological model of the valley, since it originates in innovative activities, does not require the existence of previous historical roots. It may even be the opposite, i.e. that the business is highly innovative tend to get away from industrial areas whose last experience translates into rigidity in management. What determines the attraction of companies toward the cluster is the rapidity with which takes place in the innovation, the importance of the spin-off segregated by the companies themselves as they mature, and the mobility of the qualified technical workforce between companies of the cluster. The clusters are developed over time; they are not a phenomenon that only appears or disappears during the night. Although, as has been pointing above, the exact understanding of the evolution of the clusters is still a subject of much research. The contribution of the clusters to improve the competitive advantage of companies that compose them and, in turn, to improve competitiveness of the region in which are. The cooperation is the based on the activity of the clusters.

1.6 CLUSTER INITIATIVE

Cluster Initiatives (CIs) are organized efforts to increase growth and competitiveness of cluster within a region, involving clusters firms. Some authors (Porter, 1998; Sölvell 2008) recognize many existing clusters currently developed spontaneously, i.e. without

any planning or economic policy that promotes them. In other cases, there has been the intervention of the local or regional Governments that helped in the creation of some. Europe has adopted one approach more direct the planning and implementation of programs and initiatives of clusters (Furre, 2008).

Sölvell, Lindqvist and Ketels (2003) define cluster initiative as *"efforts organized to achieve the competitiveness of a cluster involving industry private, public authorities and the academy"* To be considered a cluster initiative should include, among other factors, involve different stakeholders from companies, organizations. Mainly from the sectors public, academic and private; it must be constituted and have an office, a legal representative, website etc. It must have a governing body; own financing own to guarantee its independence. Cluster initiatives have become a central feature in improving growth and competitiveness of cluster. Based on the work of the professor Michael E. Porter, government leaders, industry leaders and academic leaders are creating new forms of partnerships in all the parts of the world. (GreenBook, 2003)

Performance clusters

The performance of a cluster is measured from three dimensions:

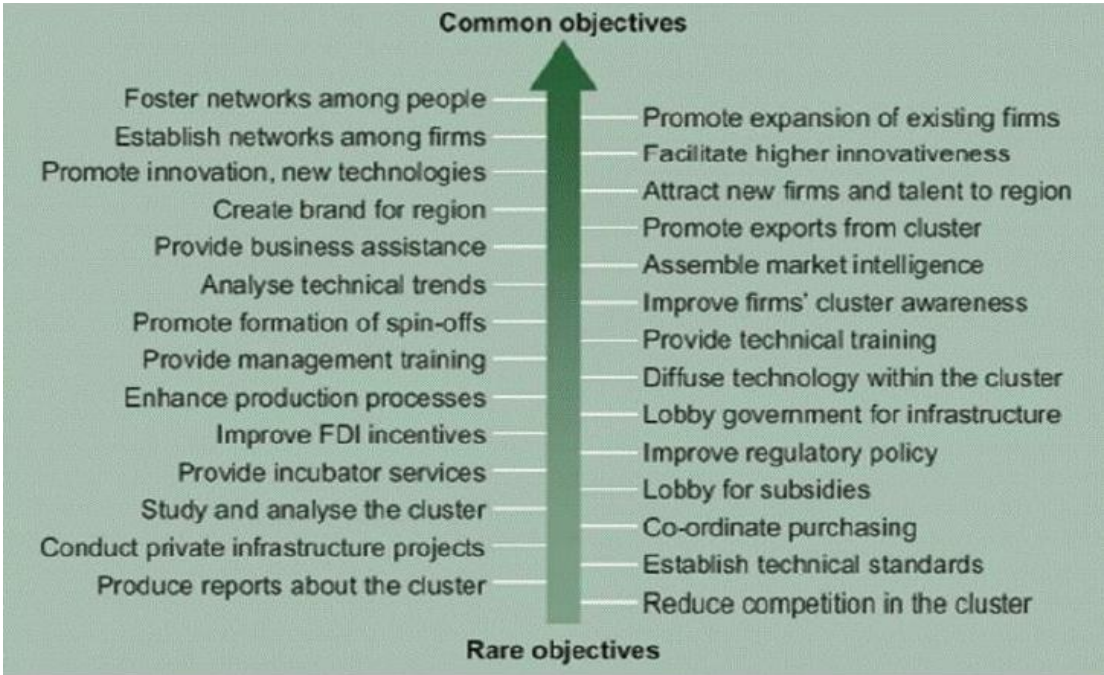
1. Innovation and international competitiveness
2. Growth in the cluster.
3. Scope of the goals.

This first step involves improvements in the areas of international competitiveness together with the research industry as well as the emergence of new technologies. Growth involves both growth level International as the formation of new forms, outgrowth and attract the fact new firms to the cluster

- **The Global Cluster Initiative Survey**

The Global Cluster Initiative Survey 2003 identified more than 500 cluster initiatives around the world, primarily in Europe, North America, New Zealand and Australia. 238 complete on-line survey, representing a broad range of technology areas. The survey covered all the four components of the Cluster Initiatives Performance Model (described later). The next figure represents the Cluster initiative objectives listed in order of frequency obtained by the GCIS, 2003.

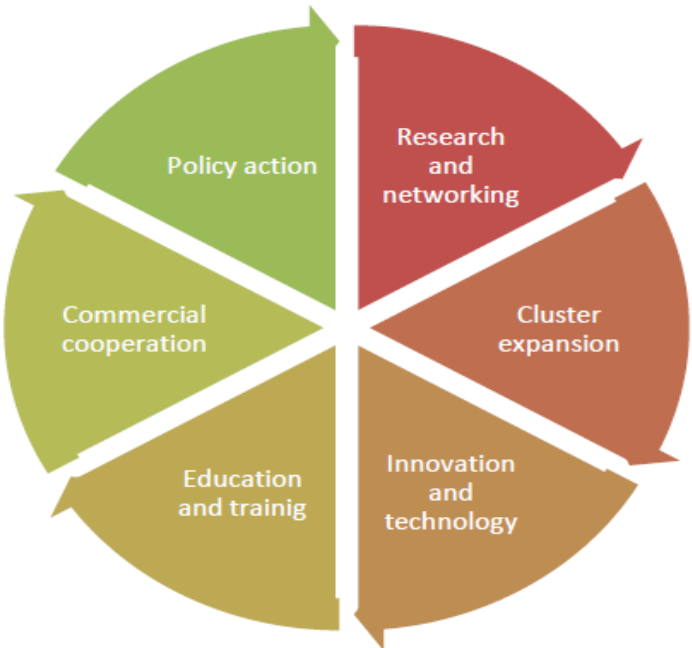
Figure 1.3 Cluster initiative objectives



Source GCIS, 2003

The cluster initiative should cover the important target of the next board. The next figure represents the target areas for cluster initiative:

Figure 1.4 Cluster Initiative Target Board



Source: Own elaboration 2014

1.7 CLUSTERS LIFE CYCLE

The first studies on the evolution of the clusters are built in close symmetry with the cycle of the corresponding industry, that is, the growth and decline of the clusters is the spatial manifestation of the life cycle of the industry (Klepper, 1997). In this sense, Storper and Walker (1989) argue that the industries produce regions through four patterns of location: location, clustering, dispersion and "change centers" (shifting centers). These authors argue that, in the early stages of an industry, when the exploration and innovation of product predominate and the numerous opportunities offered by the new industry attract many incoming, these tend to be concentrated in non-metropolitan territories where the talent and the first users are more abundant. On the other hand, with the gradual standardization of product, new opportunities have been exhausted, the innovations of processes and reductions in cost gain in importance. These transformations are translated in a dispersion of industry toward peripheral locations with lower costs. This is the maturation of the industry generates a spatial reorganization in the form of a movement from the center to the periphery.

These theories have been criticized for being too rigid and deterministic, built with a strong symmetry of the industrial life cycle. However disappear which addresses both more recent argue that the relationship between the evolution of the industry and the cluster is not unidirectional (Martin and Sunley, 2011). They also believe that clusters can follow several paths, which reduces the underlying deterministic sense in the concept of life cycle (Martin and Sunley, 2011).

The evolution of the cluster occurs as an interaction between the industrial, regional dimension (Crespo, 2011). Therefore, the cycle will affect the industrial life cycle of the cluster, but not determine: industry and cluster have not symmetrical cycles (Menzel and Fornahl, 2010). On the other hand, in an industry in decline may have clusters to decline while others are being renewed and transformed for begin a new cycle of growth. The evolution of the cluster has also, in addition to the industrial, the relational and regional components. This explains why two clusters in the same industry can follow different paths in the same moment of time. In this scenario, Klepper (2002), and Boschma Wenting (2007) and Buenstrof and Klepper (2009) studying the demographic logic and the abilities of companies to explain the dynamics of spatial concentration of industries and the success of certain locations with respect to others. These authors argued that the companies with better skills adapted to the demands of the market will have a greater growth and produce more spinoffs. These spinoffs inherit the

capabilities of its "parent", this is the best adaptation, and that are located near to their "parent" (Dahl and Sorenson, 2013), which makes emerge and shape the cluster over time (Wang 2013).

Fornahl and Menzel (2010) feature the model cluster lifecycle (CVC) more popular. The authors explain the evolution of the cluster along its various phases by analyzing in each one of them the transformations of cluster from a quantitative and qualitative point of view. According to their model, the cluster evolves from the interaction of three fundamental factors: the heterogeneity of the organizations, their different knowledge bases and their learning abilities.

In the emergency phase, has not yet been defined a "focal point", so that every incoming increases the heterogeneity of the cluster. When the cluster reaches a certain critical mass, the heterogeneity is reduced: increasingly companies share the same experience prior to entry. This convergence generates positive synergies for companies in the cluster with respect to the external (agglomeration economies). As this process of convergence continues, the competition between the companies of the cluster increases and the potential for innovation is reduced by the strong specialization and concentration in a few companies. The cluster is in a lock-in negative that leads to the decline. Ter Wal and Boschma (2011), integrate, in addition, the role of the networks of relationships between companies, that co-evolve with the cycle industrial enterprise and the heterogeneity in the cluster. The authors argued as along of the cycle the industrial networks of the clusters pass to be unstable in the emergency phase, to be structured in such a way as stable in center/periphery in the growth phase. With time, the growing coding, reducing the variety generated by the output of players and by the recurrence in the trade, and the stability of networks lead to a lock-in of the cluster. This is the cluster lacks mechanisms for achieving new knowledge that will enhance its renewal and avoid the decline. Crespo et al. (2014) speak of "resilience" of the clusters to refer to the ability to prevent the decline of the cluster through the renewal.

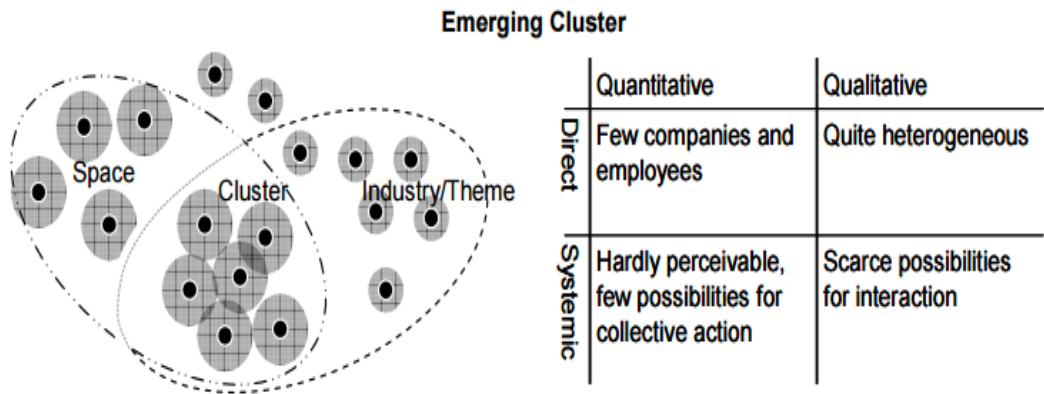
A cluster is resilient when is capable of associating and dissociating its evolution with the evolution of the industry in every moment. This will be able to associate its path with the path of the industry in the phases of expansion. In contrast, when the cycle enters in its industrial stage of maturity or decline, the resilient cluster will be able to abandon such a path through an inner renewal to move toward a new industry related in the expansion stage. Finally, Martin and Sunley (2011) presented an alternative to the

traditional way of conceptualizing the Cluster Life Cycle, providing a model based on the complex adaptive systems (complex adaptive systems) by the who reject the existence of a single model of evolution of cluster.

1.7.1 Stages of the life cycle

In the early stages of the life-cycle in its emergency phase, the cluster is characterized by a low number of small businesses. At this stage, the cluster as such does not yet exist (Menzel and Fornnahl, 2010). The technological regime is very unstable, there is no standard design or dominant, and the uncertainty about the future technological trajectories and the main actors is strong (Anderson and Tushman, 1990). The lack of consolidation offers many opportunities, which attracts many companies and increasing the variety. As a result, the networks are also very unstable. The absence of a sufficient critical mass makes the forces of agglomeration (positive feedbacks) that characterize the growth phase in the cluster are not yet present (Bresnahan et al. , 2001), so that the process of agglomeration is dominated by the localization of the pioneers and the spinoffs that these generate (Klepper, 2007; Buenstrof and Klepper, 2009). The window of location opportunity is open (Storper and Walker, 1989). The creativity, variety relational (related variety) or externalities Jacobian appear as important factors to close (Feldman and Francis,2003). Thus, the Jacobian externalities formed by the intersection of different sectors, dominate the marshalianas in the emergency phase (Neffke et al., 2011).

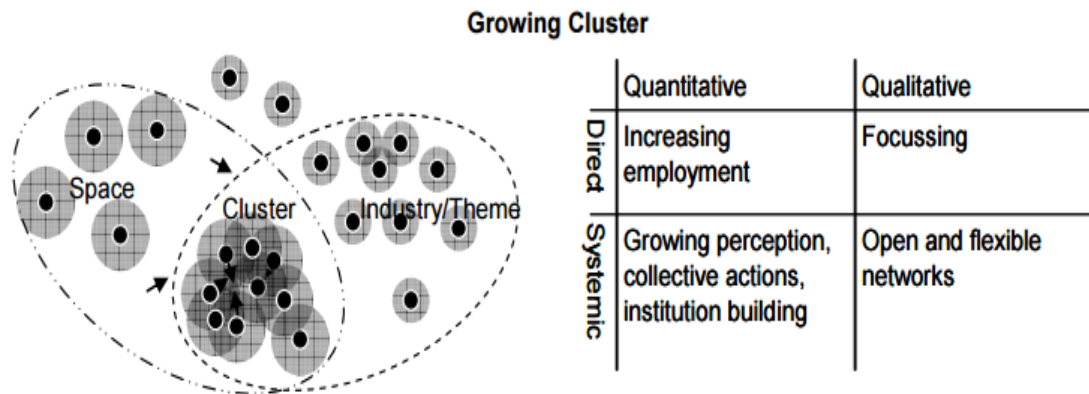
Figure 1.5 Emerging Cluster



Source: The Stages of the Cluster Life Cycle. Menzel and Fornnahl, 2010

In the stage of growth, the industrial dynamics and/or technological tends to stabilize. After the uncertainty generated by the radical innovation, a dominant design is imposed, the market expands, and the uncertainty about the trajectory and the major players is reduced. This generates a strong growth of the cluster by the arrival of new incoming (Klepper, 2007; Wang et al. , 2013): the acceleration process of spinoff (Klepper, 2002) and imitation (Suire and Vincent, 2009). Despite this increase, the new entrants are much more focused on the technological trajectory, so that the heterogeneity in cluster is reduced (Fornahl and Menzel, 2010), this is the cluster is focused, specializes. This reaches a critical mass sufficient to generate economies of agglomeration (marshallianas) which increase its attractiveness (Arthur, 1994). Is precisely at this stage when the companies and the cluster showed higher rates of innovation (Menzel and Fornahl, 2010). At the level of networks a stable structure center/periphery emerges (Oresenigo et al, 1998; Ter Wal and Boschma, 2011) by the predominance of the mechanism preferential attachment (Ter Wal and Boschma, 2011; Crespo et al., 2014).

Figure 1.6 Growing Cluster

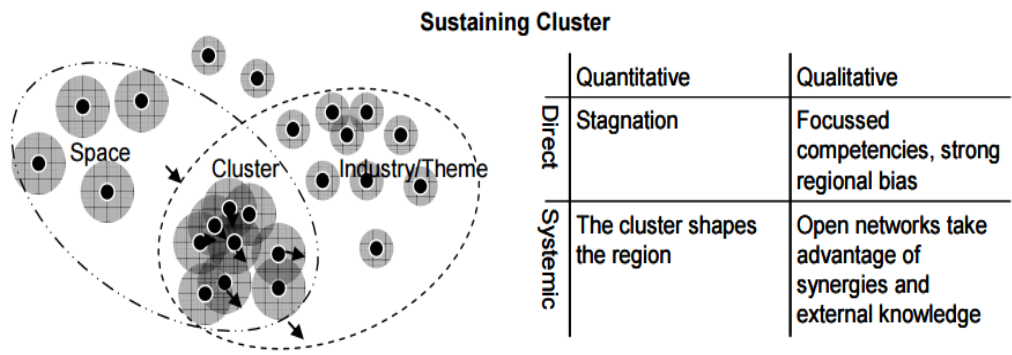


Source: The Stages of the Cluster Life Cycle. Menzel and Fornahl, 2010

In the maturity phase, also called central phases according to Menzel and Fornahl, 2010, the cluster stabilizes, establishing the dominant design and decreasing, in general, innovations in product. The market continues its expansion and the competition through price increases. The opportunities are being depleted so innovations become incremental nature, primarily in the process (Klepper, 1997). On the one hand, the less efficient firms leave the industry and the cluster. The extinction of opportunities and the importance of price competition (exploitation of economies of scale of the companies

installed) increase the barriers to entry and reduce entries. The cluster is ossification in an oligopolistic structure (Klepper, 1996). The reduction of the heterogeneity of competences in the cluster and the stability of the relationship increases the redundancy of knowledge and lead to the cluster to the lock-in. This limits the processing capacities of the cluster and the lead toward the decline with the depletion of the trajectory. In this phase of decline the new incoming outputs are scarce and the companies are still. The cluster is specialized (targeted) in a technological trajectory exhausted, with knowledge networks closed that limit the arrival of new ideas, new businesses, it means fresh air.

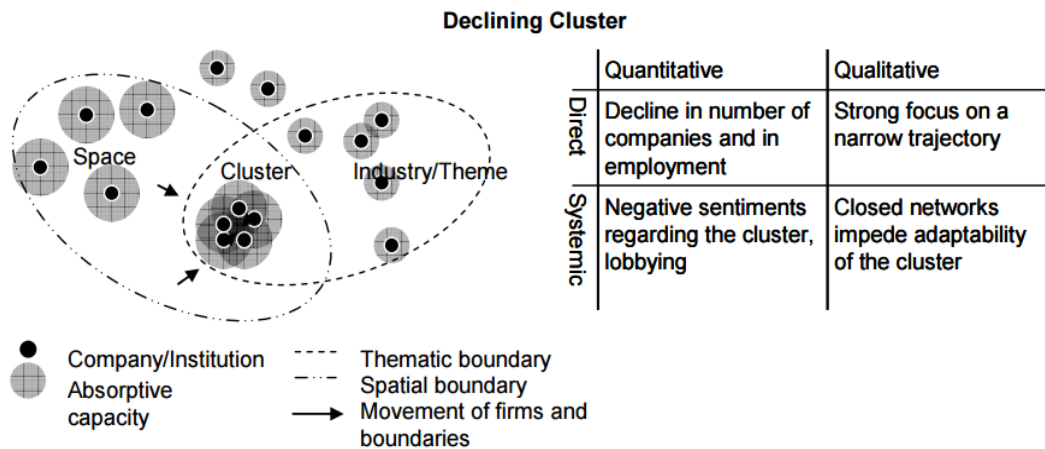
Figure 1.7 Sustaining Cluster



Source: The Stages of the Cluster Life Cycle. Menzel and Fornnahl, 2010

However, clusters are not necessarily doomed to decline. Under certain circumstances, the cluster is renewed and begins a new phase of growth linked to a new technological trajectory related, thus avoiding the lock-in in the maturity phase. For this reason the cluster must maintain (rebuild) the heterogeneity of capabilities, the variety of knowledge, necessary for innovation and the generation of new technological trajectories. Crespo et al. (2014) argue that such lock-out needs of disassortative networks based on relational behaviors disruptive (bridging). This allows the leading players of the cluster, the dominant players in the exploitation phase, multiply the relations with small businesses from the periphery (Bathelt et al. , 2004) much more known (Almeida and Kogut, 1997). This openness is vital for maintaining a competitive cluster (Eisingerich et al. , 2010). These act as a source of new knowledge, as engines of radical innovations, allowing the renewal of the cluster and launching a new phase of growth (Hervás-Oliver and Garrigos , 2014).

Figure 1.8 Declining Cluster

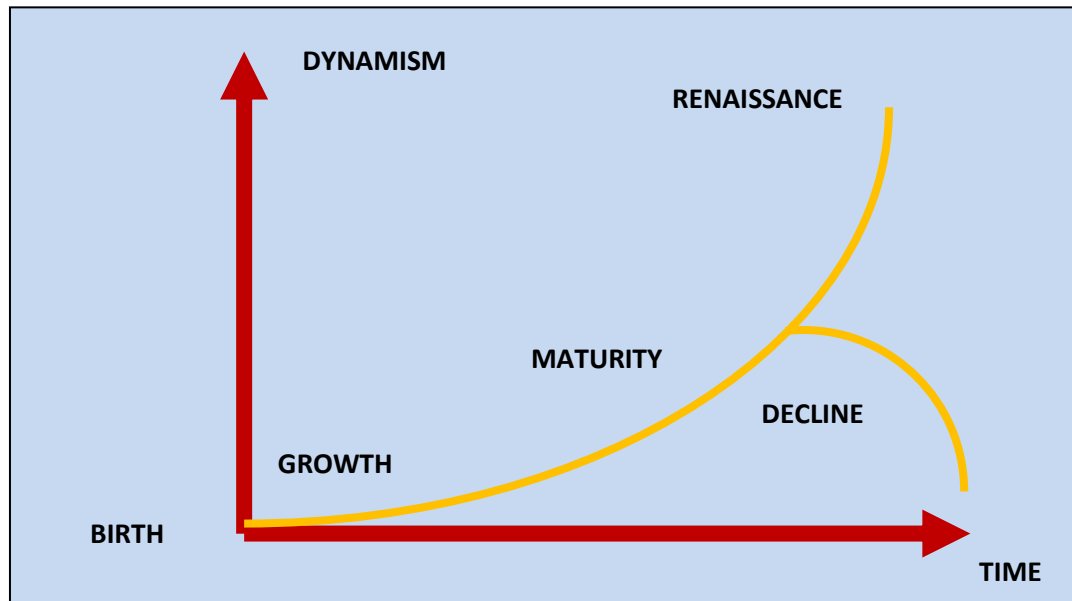


Source: The Stages of the Cluster Life Cycle. Menzel and Fornnahl, 2010

The cluster passes through various stages. This evolution is linked to it, but not determined, by the life cycle of the industry. In the early stages, the cluster is characterized by attracting new businesses, providing technological alternatives and heterogeneous knowledge. This provides additional benefits to the firms located, these can gain more knowledge through multiple and frequent inter-relations. In addition, these phases there is a greater number of spinoffs that inherit knowledge of their companies-mother, at the time that with the entry of new firms, and recombining knowledge is the current knowledge with the new and reconfigured and recombine the stocks of knowledge in a virtuous circle that prevents the lock-in. In the latter stages of the life cycle of the cluster we are dealing with opposite effects. The knowledge becomes more stable and homogeneous, due to the fact that they no longer come many new companies and the process of spinoff lapses. In this way, it is no longer new knowledge recombining with the current; exploitation takes precedence over the exploration and the risk of lock-in increases. Thus, the effects of the clusters in the firms located are decreasing, which the additional benefits that the companies may have achieved in previous phases are no longer given with the same force. Therefore, the postulated effects common on the benefits of clusters for businesses should be grayed out. These benefits are moderated by the phase of the life cycle, in addition to the own heterogeneity of the company and its ability to absorb knowledge (Cohen and Levin 1990) and build relational assets (Dyer and Singh, 1998). This individual component explains that not all companies in the cluster could obtain the same advantages of

location: one has to be there at the appropriate time (stages of growth) and submit the necessary resources (minimum thresholds of resources and capabilities) to absorb (Hervas-Oliver and Garrigos, 2009) the advantages that the territory offers. Below we can see a graph of the theoretical life cycle that has the cluster, where you can observe this new variant of regeneration of the cluster by a change in the modus operandi.

Graph 1.9 life cycle of the cluster.



Source: Sölvell, Örjan, 2008: p. 18

CHAPTER II

OBJECTIVES OF THE RESEARCH

2.1 GENERAL OBJECTIVE OF THE DISSERTATION

Analyze in which stage is the Tequila Cluster, based on the cluster life cycle theory, and contribute to the understanding of the functioning of the tequila cluster in the Municipality of Tequila, Jalisco; Mexico and its influence on the competitiveness of the regional development in the denomination region of origin, based on the particular conditions of the Mexican idiosyncrasy

2.2 SPECIFIC OBJECTIVES

- Understand the concept of a cluster, their origins, evolution, life cycle and the different current models.
- Identify success factors and not success from the study of the evolution of existing clusters.
- Compare the results of the study of the Tequila Cluster with the analysis of the Wine Cluster in California that is world-renowned.
- Detect the future challenges of the Tequila Cluster.
- Issue some recommendations of public policy.

2.3 HYPOTHESIS OF THE RESEARCH

Nowadays the globalization and the growing of industries and the development of new technologies are making the world smaller, in Thomas L. Friedman words: “The World Is Flat”. The dynamics of the continuous improvement make the competition harder and closer, where details are important and the new strategies and new decisions must be applied. Some of these strategies and decisions are the creation of industrial clusters in specific geographic regions. These guide us to the improvement of the cluster and the diagnosis of each of the actors. And these changes are valid for all industries, including the tequila industry in Jalisco; Mexico. The industry has to take actions to stay in the big game A cluster is a trigger for the economy development and the Industry growth. A

reason for make an analysis of the tequila is to determine in which stage the industry is and know how it relates to all actors in the cluster.

2.4 RESEARCH QUESTIONS

- In which stage of the cluster life cycle is located the tequila cluster in Jalisco; Mexico?
- How are the relationships between all stakeholders in the cluster of tequila?
- Where are the problems in the relations between all the actors in the cluster of tequila?

CHAPTER III

METHODOLOGY OF THE RESEARCH

3.1 HISTORY OF THE METHODOLOGY

In 1994, in conjunction with the UNIDO (United Nations Industrial Development Organization), the ITESM and the Government of India, developed COMPSTRAC, in order to promote a culture of development of the competitiveness in small and medium-sized enterprises in developing countries. The experience gained from years of applying COMPSTRAC, joined to the study of large companies of world-class, the theories of renowned experts, and the achievements of successful entrepreneurs give shape to this methodological approach to support the resolution of one of the basic problems that prevent the majority of small and medium-sized enterprises compete in the international scene. This juncture represents the lack of a strategy that makes sense of direction, adjust and destination and that is go aligning dynamically to the real opportunities there are in other places in the world, under very special conditions, unstable, and sometimes difficult to achieve. COMPSTRAC focuses on industrial clusters and its related companies and complementarities that together form ecosystems of business that must be implemented to compete in global arenas.

3.2 DESCRIPTION OF THE METHODOLOGY

The methodological approaches: COMPSTRIN (Competitive Strategy for Technological Innovation) and COMPSTRAC (Competitive Strategy for Industrial Clustering) are part of the methodology registered under COMPSTRAT (Competitive Strategy for Global Positioning of Technology Based Enterprises), approaches used to develop this dissertation due to its specific application in a particular region, in this case the region is the Municipality of Tequila in the State of Jalisco, Mexico. These approaches were created by Dr. Carlos Scheel Mayenberger, professor of EGADE³ - Tecnológico de Monterrey. The methodological approach COMPSTRAC, allows raising a comprehensive strategy of clusterization, to multiply the abilities of all the components (stakeholders) one by one to generate synergy and take advantage of opportunities for value. In industrialized countries, the assembly of clusters is relatively simple because there are external conditions. In developing countries the situation is

³ Graduated Business School of Tecnológico de Monterrey (ITESM 1995)

markedly different; there is necessary to develop a strategy to assemble the conditions and the cluster components piece by piece until hatching finally a structure that can behave like a real band able to compete with global standards. It is necessary to follow the following steps:

1. Analyze the conditions of the region in where the cluster is located.
2. Develop the necessary conditions resulting from the prior analysis.
3. Analyze the industry.
4. Establish measurement parameters to monitor the performance of the cluster and take corrective actions if is necessary

3.3 DESCRIPTION OF THE METHODOLOGY OF DIAGNOSIS OF THE INDUSTRY

The methodology is divided into five phases:

- Determination of the generic features of the Industry.
- Adaptation of indicators and metrics to the specific case.
- Location and identification of best practices in relation to our industry as such, and as to regions that have developed successful clusters in the same or similar industry.
- Description of the local industry and the region.
- Compare between best practices and conditions in the region that determine the industry and the study region.

The following describes each of the phases of the methodology and the way in which were applied:

3.3.1. Determination of the Generic features of the Industry

The generic features are represented through the map of value of the industry, in which are detailed: the value chain and the key players. It is understood the value chain as the series of activities of the industry that generated the greatest value and the sequence in which they are performed. In the same way, it is important to determine who carried out these activities, it is said, the key players, among which are: companies, research centers, public institutions, civil associations, banking, and all those actors that are relevant to the industry.

3.3.2. Adaptation of indicators and metrics to the specific case

According to the methodology, it must be analyzed eight key factors in order to determining the characteristics of a region, as we mentioned before these eight factors derive from the analysis of the diamond of Porter; which are:

- **Market Conditions:** that includes the demand of the industry and access to local and global markets that require extended value chains.
- **Structural enablers:** that refers to both, physical and technological infrastructure.
- **Economic and Financial factors:** that refers to access to public or private capital to promote the industry and to promote the associativity in the region.
- **Conditions of public policy:** that refers to the regulations and incentives that the Government attaches to the industry and to the region within the framework of support for the industry and the shaping of clusters.
- **Social and Cultural Drivers:** refers to the aspects related to the creation of an atmosphere of associativity, confidence and the generation of a shared vision between the companies in the region.
- **Regional attractiveness:** that includes all the peculiar features of the region to help, the potentiating of the industry and to the successful development of clusters, such as the presence of anchor companies that generate business networks SMEs, a strong competition, etc.
- **Industrial Competitiveness:** that refers to the existence of key competition and other factors that strengthen the industry to compete at global level.
- **Entrepreneurial culture:** in which aspects are analyzed to promote the generation of new forms of business based on innovations generated by the industry

For each factor, a distinction is made between capabilities of clusterization (necessary to develop processes of clusterization of world class or the process of development for the existing cluster) and the capabilities to develop the industry (which are all those characteristics that favor the development of industry) The methodology has generic indicators and metrics that are used to analyze each factor, and that are applicable to any industry and region, however, to analyze a specific case, it is necessary to adjust these parameters to the particular characteristics of the case. For carry out our objective based on a consultation with the experts, the indicators were selected that are most relevant to analyze the industry. Also, on the basis of a consultation of secondary information was

defined a metric for each indicator, in order to develop an appropriate instrument to perform research on the situation of the region analyze. These metrics were totally customized for the case study, while the indicators maintain the structure of the generic methodology.

3.3.3 Location and identification of best practices

Best practices are those dynamics that have been developed somewhere in the world and that have been proved to be so effective that serve as a reference for other regions of the world. For the implementation, secondary sources were reviewed to identify the places that have the best practices and what it consist of, both in relation to the industry, as to regions that have developed successful clusters.

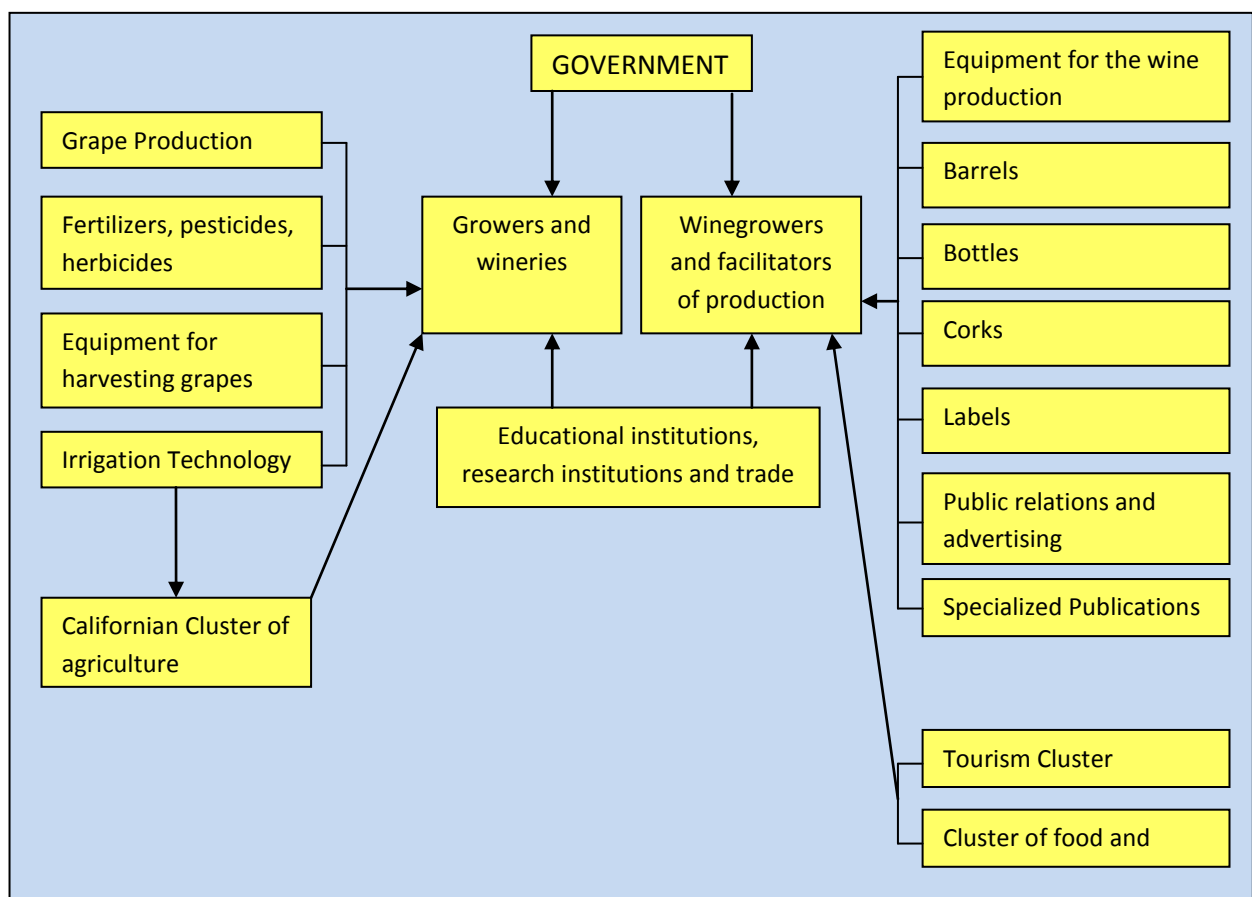
- Criteria by which was selected the wine cluster in the Napa Valley, California, as the best practices:

Until the mid-twentieth century, this region of Northern California, rich in agriculture, best known for its agriculture than by technological activities, even at the end of World War II, California, was the main industrial processing and food distributor in small scale. A combination of regional advantages and historical accidents, led to the creation of one of the best scientists parks in the world. In the same way happened with Jalisco in Mexico, a state with a long tradition in agriculture, since the latter half of the twentieth century has been the second most important entity of Mexico, focusing much of the country's industrial production and nowadays home of prestigious universities and development centers. However despite California entered in a quickly a process of technological development, not neglect the agricultural sector and in Jalisco the situation is completely different, the industry and technological development is constant but agricultural sector has been neglected and has very high levels marginalization and neglect.

This industry in California has ancient historical roots, dating back to colonial times and has been going through over the years by a number of hardships and challenges consolidating as a pillar of economic development of the region. The cluster of the wine in Napa Valley; California is a good example, and can be considered as best practices in the industry of the alcoholic beverages, because Napa Valley concentrates 90% of the production of wine in the region. The people of the United States is not a population recognized by the consumption of wine, but since the Cluster in California

Wine began to be known for its many successes the consumption of wine has been steadily increasing. This industry includes wine producers as well as several thousands of independent winegrowers. There is an extensive group of industries that support the elaboration of wine, as well as the growth of grapes, including suppliers of the grape, irrigation machinery, labels, and equipment for harvesting, barrels, and advertising firms. There are also publications targeted to consumers about the trade in wine. Local educational institutions are involved with the wine, and an example is the program of viticulture and oenology at the University of California, the Wine Institute and the special committees of the senate. The cluster also relates to minor way with the other clusters of California as are the Ministry of Agriculture, Food for restaurants, and the Ministry of Tourism of the wine (Porter, 1998).

Figure 3.1 Anatomy of the California Napa Valley cluster of wine.



Source: Michael Porter 1998

A cluster may not be part of a structure "rigid", in which the government is above the other and where, on the one hand we see some companies and on the other hand, we

find other, if not all are involved and are interconnected and related in many different ways.

3.3.4. Description of the local industry and the region

The local industry and the region became primary research based on personal interviews with experts and a visit to the region. For this purpose, a questionnaire was developed which included the indicators and questions related to the metric, which is presented in Annex 1. In the table below specifies the type of expertise that were considered and the amount of experts for each group.

- Criteria by which was selected the tequila industry:

"Tequila" is a brandy that is drawn up in a small region of Western Mexico, through the distillation of the fermented must obtained from the heart of a plant known as blue agave. Tequila is one of the elements with most recognizable Mexico in the greater part of the world. Its presence in international markets has been strengthened in recent years following a series of strategic actions that put the tequila in the taste of the consumers, not only as blended drink, but also as a beverage that is taken directly. The tequila is then a product that synthesizes the interrelationship of the indigenous culture as popular culture and the Spanish culture as the culture of domination. The syncretism is expressed in all aspects of the tequila, since its name until its transformation, marketing, and even as an element that gives an identity to the Mexicans. It is no coincidence that has come to be a symbol of national identity, with images as effective as mariachi⁴, chilli and the zarape⁵, to build and bring our particularities mestizo⁶; thus, in both we differentiate ourselves we acquire a sense of nationalism, which also comes from these sources, which in one way or another, they survive as symbols in spite of our current urban practices. The tequila in the world is considered as a symbol of "*mexicanidad*" (Mexicanness) which was consolidated in the fifties thanks to the Golden Age of Mexican cinema, where the drink, along with the music of the mariachi, accompanied the characters to provide by their triumphs, but also the consoled themselves with in

⁴ Mariachi is a musical genre that originated in the state of Jalisco, Mexico— legend goes on to specify that it came from the city of Tecalitlán. It has been around since the 18th century, becoming part of Mexican music as the Spanish imported in instruments new to the area. Guitars, harps, and trumpets or cornets are some of the instruments brought in by the Spanish that are still used in today's Mariachi.

⁵ A long blanketlike shawl often brightly colored and fringed at the ends, worn especially by Mexican men.

⁶ Person of mixed racial or ethnic ancestry, especially, in Latin America, of mixed American Indian European decent.

their sorrows and failures as well the actors became big promoters of tequila. For the Mexicans tequila is not just about a drink is element that of the culture.

- Criteria by which was selected the Municipality of Tequila in Jalisco; State:

The Tequila Industry is often referred as the industrial sector engaged in the production and distribution of tequila. The importance of the Tequila Industry for the Mexican government is so big; there are special official policies and laws that give the industry special considerations. The most important polices that the Mexican government have implemented is the recognition of the designation region of origin, created in October 13th of 1977. The Designation Region of Origin comprises municipalities in five states of Mexico: Jalisco, Nayarit, Guanajuato, Tamaulipas and Michoacán. Only in these municipalities can be harvested and used the raw material: Variety Blue Weber Agave tequilana⁷ for the production of Tequila. No other alcoholic beverage produced in the country or outside it may hold the name “Tequila”

Figure 3.2 Mexican states recognized for the Designation Region of Origin



Source: INEGI 2014

⁷ The blue agave was classified by German botanist F. Weber in 1905. It's commonly - and mistakenly - called a cactus, but it is really a succulent that belongs to the lily (amaryllis) family. It is sometimes known as cabuya, maguey mezcal, mexic, pita and teometl. The agave used in mezcal, although similar, is harvested younger than the tequila agave. Early results show promise for agave crop; 2006.

The reason why we choose the Municipality of Tequila in Jalisco State is because in 1600 was created the first distillery of agave, in charge of Don Pedro Sanchez of Tagle, tequila was consumed before but without any distillation process. Thus arises the first factory of Tequila. Beyond that reason in 2001 was created a program “*Pueblos Mágicos*” (Magical Towns) developed by the Ministry of Tourism (SECTUR) of the Mexican Federal Government, together with the various governmental bodies, recognizes those who inhabit these cities and the work they have developed to protect and save their wealth cultural significance. A “*Pueblo Mágico*” is a locality that has symbolic attributes, legends, history, important facts, the everyday, in order that magic tea in emanate from each one of its manifestations socio-cultural, and what they mean today a great opportunity for tourism development. The Magical Towns program contributes to reassess to a set of populations of the country that have always been in the collective imagination of the nation as a whole and that represent alternatives for fresh and different national and foreign visitors.

Figure 3.3 Logo that characterizes the magical towns in Mexico.



Source: Ministry of Tourism (SECTUR) 2015.

In 2002 the Municipality of Tequila was enrolled as a magic town, representing the entire designation region of origin of tequila, as the place where the industry was born and the most important region of tequila production.

- Criteria by which was selected the sample for the investigation:

To select the sample for the investigation, the set of people that was chosen for the collection of the data is considered in three categories. A questionnaire was applied. The questionnaire was response in digital mode, through the mail, however in December 2014 a visit to the municipality of Tequila in Jalisco was conducted with the aim of gathering information and the contacts of the people involved in the cluster.

- Experts from the private initiative:

It was considered project leaders, heads and managers of companies related to the tequila industry, because they are the best persons to respond to the interviews on the various factors that influence the development of the tequila industry. The experts from the private initiative are people that correspond to family business producing tequila. For the purpose of this research were selected the 12 Tequila-producing companies, in the Municipality of Tequila Jalisco, of which only 10 companies contributed with information for this research. On the part of the company "*Jose Cuervo Tequila*" and "*Tequila Cazadores*" we did not have any answer; this are the only companies of large type located in the Municipality of Tequila. Their production processes and information are considered confidential. The company "Jose Cuervo Tequila" since 2005 ceased to be a Mexican company was acquired by the English group "Diageo"⁸. The results obtained by the experts from the private initiative correspond to the 83.3% of the firms located in the Municipality of Tequila, Jalisco. (Annex 2 Complete profile of the companies who participated in this research). In order to obtain enough and relevant information about the point of view of the companies located in the Municipality of Tequila; Jalisco, we choose the following key positions that fill up with the aims of this research.

- General Manager
- Finance Management
- Marketing Management
- Project Manager

⁸ Economía Mexicana de Hoy. NO. 5/42 2.11.2014.

Table 3.1 Respondents from the private initiative

COMPANY NAME	NAME	POSITION
Tequila Cazadores	Ing. Alvaro Romo	General Manager
	Lic. Ana Karina Ozuna	Marketing Management
	Ing. Dulce Andrea Salas Bonilla	Project Manager
Tequila Destiladora Rubio	Ing. Ana Paula Azamar	General Manager
	Lic. Nilsa Puente Contreras	Finance Management
	Lic. Fernanda Carrillo Maldonado	Marketing Management
Tequila Don José	Ing. Isaac Arteaga Novoa	General Manager
	Lic. Juan Carlos Villareal Martínez	Finance Management
	Lic. Tania Guzman	Marketing Management
	Ing. Armando Gómez Díaz	Project Manager
Tequila D'Reyes	Ing. Edgar Rojas	General Manager
	Lic. Gilberto Izquierdo	Finance Management
	Ing. Rodrigo Hernández	Project Manager
Tequila Ofendían	Ing. Alejandro Corzo	General Manager
	Lic. Miguel Ángel Saldívar	Finance Management
	Lic. Obed Arellano	Marketing Management
	Ing. Monserrat Pineda	Project Manager
Tequila Ópalo Azul	Ing. Arlethe Paez Ruíz	General Manager
	Lic. Yessica Suárez Arista	Finance Management
	Lic. Estefanía Manzano	Marketing Management
	Ing. Ana Paula Maldonado Robles	Project Manager
Tequila Tequileño	Ing. Antonio Barrera	General Manager
	Lic. Tania Moreno Chávez	Finance Management
	Lic. Mariana Miranda	Marketing Management
	Ing. Lilia Castilla Figueroa	Project Manager
	Lic. Valeria Mendez Orozco	Finance Management
	Lic. Danya Nieto Reyes	Marketing Management
	Ing. Leonel Rojas García	Project Manager

Tequila Tres Mujeres	Ing. David Aguiñaga García	General Manager
	Lic. Jorge Gómez	Finance Management
	Lic. Víctor Acevedo Ortega	Marketing Management
	Ing. Luis Antonio Amparan Mercado	Project Manager
	Lic. Juan José Villanueva	Finance Management
	Lic. Raúl Zaragoza Galvan	Marketing Management
	Ing. Gabriel Pulido Mancilla	Project Manager

- Experts of government:

The government experts who contributed with this dissertation belong to two levels of government. In this section also participated the members of the Tequila Regulatory Council (CRT), is an association formed and supervised by the Ministry of Economy of the Federal Government. All of them immersed in the area of economic competitiveness and industrial promotion.

- a) Government of the State of Jalisco: Ministry of Economics, Department of Development and General Management of Industrial Competitiveness.
- b) Municipal Government of Tequila, Jalisco: General Direction of Government, Department of Industry Support and Municipal Institute of Business Support.
- c) Tequila Regulatory Council (CRT)

Table 3.2 Respondents from the government:

INSTITUTION NAME	NAME	POSITION
Government of the State of Jalisco: Ministry of Economics, Department of Development and General Management of Industrial Competitiveness.	Lic. Eduardo Moreno Romero	Sub-Director of the Economic Development
	Ing. Mauricio Userralde Bustamante	Sub-Director of Social Development
	Ing. Carlos Eduardo López Munguía	Sub-Director of State Competitiveness
	Lic. Ana Eliane Mejía Robles	Director of Communication
	Ing. Óscar Leonel Tarquin Bedolla	Coordinator of the Tequila Magic Town.
Municipal Government of Tequila, Jalisco: General Direction of	Lic. Estefania M. Olivares	General Director of Business Support
	Ing. Augusto Guzmán Ruiz	General director of Industry Support

Government, Department of Industry Support and Municipal Institute of Business Support	Lic. Karen Ángeles Peñaloza Favela	Secretary of the City Mayor
	Ing. Diana Marianna Hernández Arrellano	Director of Urban Planning
	Lic. Jennyfer Garcia Gómez	Municipal Trustee
Tequila Regulatory Council (CRT)	Lic. Pedro Raúl Madrid Díaz	Subl Director
	Lic. Susana Márquez Macías	Head of Public Relations
	Lic. Ana Karina Álvarez Ozuna	Vice-director of Local and Regional Tequila Development
	Ing. Rafael Abarca Ramos	Spokesman
	Lic. María Guadalupe Pardo Rivera	Key account manager

- Academic experts focused on cluster development:

Academic experts are professors from ITESM Business School, researchers who have been part of projects related to the formation of clusters, agglomeration and industrial competitiveness in the State of Jalisco therefore have been in direct contact with industry clustering initiatives.

Table 3.3 Respondents from the academic sector

INSTITUTION NAME	NAME	POSITION
Instituto Tecnológico y de Estudios Superiores de Monterrey Campus Guadalajara – ITESM	Dr. Julio Álvarez Botello	Director of the Business School
	Dra. Pilar Azamar Vichis	Director of the Business Incubator
	Ing. Fernando Salinas Bernal	Director of the Bachelor in Industrial Engineering.
	Dr. Lorenzo Llamas Espinoza	Director of the Bachelor in Creation and Development of Enterprises.
	Dra. Patricia Valenzuela Cosió	Coordinator of the department of Business Innovation

Table 3.4. Types of experts respondents to the questionnaire

TYPE OF EXPERT	QUANTITY
Experts from the private initiative	35
Experts from the government	10
Academic experts	5
TOTAL	50

Source: Own elaboration 2014.

3.3.5 Comparison between best practices and conditions in the region that determine to the industry and region under study

As the last step in the application of the methodology, in order to present the results of the investigation, a comparison is made or benchmarking between the features found in the region and analyzed best practices at the global level (The Wine Cluster in the Napa Valley; California). The result of such a comparison shows us what the favorable and unfavorable conditions in the region are for subsequently raise strategies of clusterization.

CHAPTER IV

CLUSTERING AND COMPETITIVENESS; ANALYSIS OF THE SELECTED INDUSTRIES

As has been mentioned before for a greater economic growth, the improvement of the business processes and innovation is necessary to take in account the localization of the companies and its synergy with research centers. It is important to analyze the environment of the cluster and its management because each one has particular conditions and therefore, each one has adapted different policy actions according to their needs. Clusters contribute to economic growth because it facilitates an environment of innovation and entrepreneurship, which allows a productive growth through an increase in efficiency, quality and differentiation in goods and services. (Feser 2005). Many of these benefits can occur by spillovers, which from now on we will call, "naturally", without any need for public intervention, for example: when workers change companies there is a flow of knowledge (labor mobility), or by enterprising ideas thanks to the action of large companies or research centers (information flow). But public policies can have an important role, although not decisive, in the creation and on the successful development of clusters, e.g. by supporting research partnerships that enhance the competitiveness, offering a basic infrastructure but specialized, mediating in the creation of networks, funding education and training and helping to coordinate and mobilize people who are interested in a joint vision that will enable us to provide a better development of the cluster. In the following sections, we analyze both clusters; tequila cluster in Mexico and wine cluster in the United States of America, also we are going to set up the basis for the industry in general.

4.1 GENERIC FEATURES OF THE ALCOHOLIC BEVERAGES INDUSTRY

The category of alcoholic beverages includes distilled spirits, wine and beer. Although many of these beverages, beer and wine have existed for thousands of years, this industry has developed in recent centuries. The industry, considered from a global point of view, appears very fragmented, as is evident by the large number of manufacturers, packaging methods, production processes and final products. Since the beginning of the century, beverage companies have evolved from the regional companies producing

drinks intended primarily for local markets until the big corporations of today, producing drinks for international markets. The industry has an economic importance, employs several millions of people around the world, and each type of product generates some income in the order of billions of dollars annually. There is no doubt that in some small developing countries the production of traditional beverages is the main support of the economy. Characteristics of the active population, although the ingredients and production methods of the beverages may vary, the personnel employed in this industry usually exhibit many characteristics in common. In the process of gathering the raw materials, whether coffee beans, barley, hops, grapes or agave is used to individuals or low-income households, not qualified. In addition to constitute its main revenue source, the collection largely determines their culture and lifestyle.

In contrast, the preparation of the product requires automated operations and mechanized, and usually gives employment to semi-skilled manual workers. In the production facilities and storage areas, the posts are the most common of operator of packaging machines and filling, operator of conveyor belt and workers mecha-technicians. The training for these positions is performed in the own place and is complete with instruction on the job. As they advance the technology and automation, the template is reduced in number and increased importance technical training. These manufacturing semi personnel is often count on the support of a highly qualified technical group, composed of industrial engineers, heads of manufacturing, accounting and technical quality assurance/food safety.

4.1.1 Industry of distilled spirits

Is possible to obtain liqueurs distilled from many materials, among which are the masses of fermented cereals, fruit juice fermented juice of sugar cane, molasses, honey and juice of agave. The fermentation to produce wine and beer dates back to the years 5000 and 6000 B.C (Pastor 2007). However, the history of distillation is much more recent. Although it is not clear where it originated the distillation, is attributed to the alchemists, and its use began to spread in the XIII and XIV centuries. The first uses were primarily pharmaceutical.

- **Brief description of the process**

The alcoholic beverages are divided into two groups depending on the method of preparation: fermented drinks such as beer and wine, and spirits such as whisky, brandy

and tequila. The liqueurs are prepared by mixing juices or basically extracts of fruits, dried fruit or other food products. The production of distilled spirits includes the following phases: reception of the grain, milling, cooking, fermentation, distillation, conservation, mixing and bottling.

4.1.2 Industry of the wine

The wine is produced from the grape. When it is crushed ripe grapes is obtained the grape must, which by normal fermentation, total or partial, is transformed into wine. During fermentation, the principle rapid and turbulent and then slower, the sugar is converted into alcohol and carbon dioxide, but many of the elements contained in the grapes remain on the drink. The different phases of activity of the production of wine from the grapes are: the development of the wine, storage and bottling.

- **Brief description of the process**

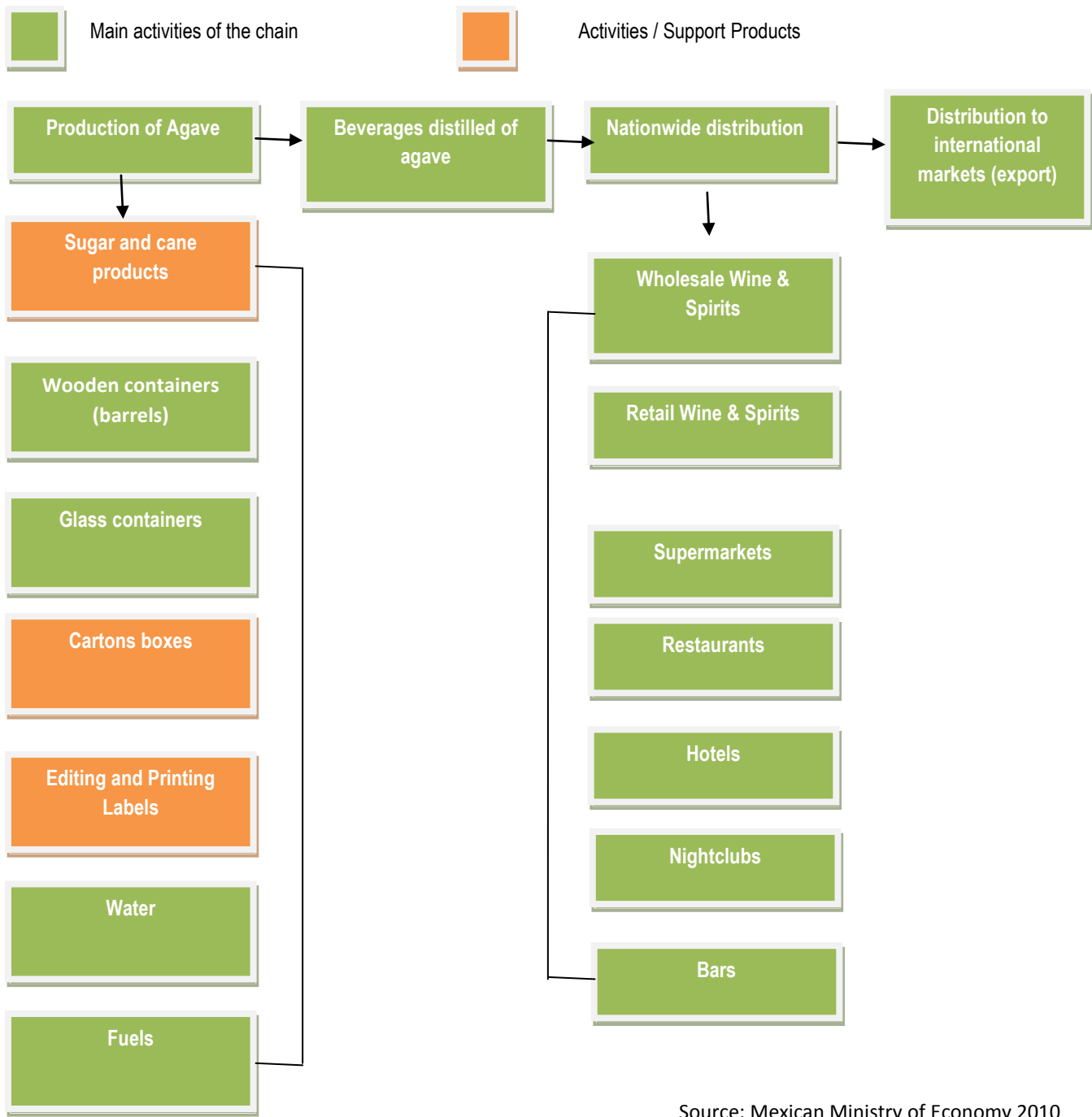
The wine includes a series of activities in which methods are employed ranging from "farm production" traditional to the modern industrial production. The old method of pressing the grapes, in which the winegrowers stomp during the night the grapes that they had collected during the day, each time it is used less in modern winemaking. At present, the wine is produced in facilities belonging to groups of growers or commercial enterprises, with techniques that allow you to produce a type of wine more uniform and reduce the risk of acidification that transforms in the wine vinegar.

4.1.3 Value chain; the case of the tequila industry

The value chain represents the activities that generate value to the industry. The production of alcoholic beverages is part of a wider chain that encompasses all the activities that go beyond the production of a bottle (Scheel, Galeano, & Harris, 2010). The value chain of the tequila industry include producers of agave; the factories of drinks distilled agave; factories of wood packaging; factories of petrochemical products, companies of recruitment, treatment, transmission and distribution of water; wholesale outlets of wines and spirits; wineries; retail trade of liquefied gas fuel; retail shops in department stores, restaurants, nightclubs, bars and hotels; sugar factories and products of cane; factories of cartons and editing and printing. The value chain represents the activities that generate value to the industry. The following figure shows the value chain of the industry, are the main interrelationships in the tequila industry with its main suppliers of inputs and services, and the purchasers of the final products. As can be

observed, the beverage industry is high complemented, because there are several activities and support services or related product. Among the activities of value, there are three that are most relevant in relation to generate a sustainable environment, these are: design, materials selection and installation of mechanical systems, electrical and health, because it is in these activities that really do a differentiation

Figure 4.1. Tequila productive chain



4.2 LOCATION AND IDENTIFICATION OF BEST PRACTICES IN RELATION TO THE TEQUILA INDUSTRY – WINE CLUSTER IN NAPA VALLEY CALIFORNIA

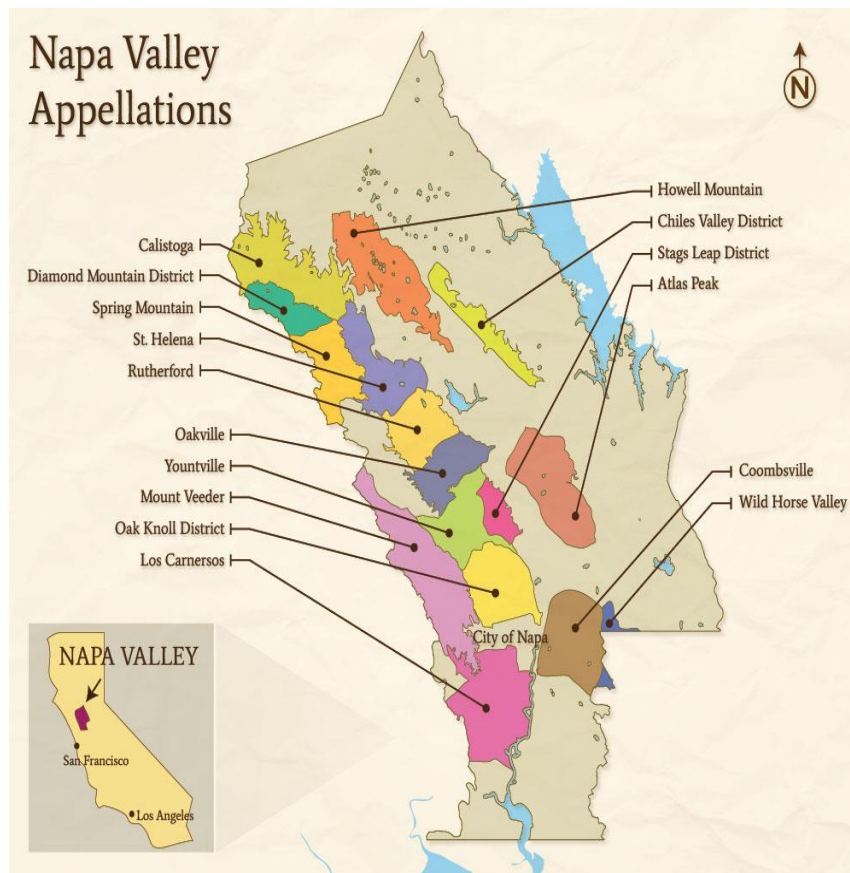
The Napa Valley region in the State of California is located very close from the city of San Francisco. Napa Valley stretches along 50km between the Vaca Mountains, at the east, and Mayacamas at the west. Actually it is a complicated region that meets a variety of microclimates, soils and orientations in a remarkably compact area. Most of the wines are a *coupage*⁹ of grapes and wines of these different microclimates. Estate wines are also produced, always being the most prestigious wines of the farm. The diversity of climates and soils of the region is reflected in the sub-AVA (American Viticultural Areas) distinct: Atlas Peak; Calistoga; Chiles Valley; Diamond Mountain District; Howell Mountain; Rams; Mt. Veeder AVA; Oak Knoll District of Napa Valley; Oakville; Rutherford; Spring Mountain District; St. Helena; Stags Leap District; Wild Horse Valley; Yountville. Valley Napa Valley is widely regarded as one of the best wine regions in California, and in the United States, with a history dating back to the nineteenth century from the colonial time. The combination of the Mediterranean climate, geography and geology of the valley help the grapes to make quality wine.

John Patchett established the first commercial vineyard in the valley in 1858. In 1861 Charles Krug established the first commercial winery in the Napa Valley in St. Helena. Viticulture in Napa suffered several setbacks in the 1800s and early 1900s, including an outbreak of phylloxera vine disease, prohibition and the Great Depression. The wine industry in Napa Valley recovered, thanks to the results of the Paris Wine Tasting of 1976, came to be seen as an area capable of producing world-class wines. Nearly 4.7 million people visit each year the Napa Valley, making it the second most popular tourist destination in California after Disneyland. Napa is a paradise for lovers of wine, Cabernet Sauvignon is the proud of the region making one of the best in the world. Other varieties like Merlot and Cabernet Franc also offers good results, while the syrah and zinfandel give notable wines, like white chardonnay, sauvignon blanc and riesling. Moreover, due to the revaluation of land and use of frames oak in winemaking, it makes the price of the production is high. Some of the wines are the most sought after and expensive in the world: Heitz Martha's Vineyard, Opus One, Stony Hill Chardonnay,

⁹ French term for the practice of blending wines from the same or different starting or harvesting in order to unify their qualities or the qualities complement each other defects.

Dominus, Special Selection Caymus Cabernet Sauvignon, Grace Family Vineyard, Stag's Leap Cask 23, Cuvée J. Schram.

Figure 4.2 Map of the Napa Valley; California



Source: Napa Valley passport 2015

4.2.1 Indicators and metrics to the wine industry

MARKET CONDITIONS

- High demand of products generated by the industry

Napa is a small valley about 35 miles long and 5 wide, which produces wine since 1850. Napa is one of the smallest counties of California with a 130,000 population; has gained a reputation worldwide for the ability to produce wine of high standards. Many regions produce wine but the returns, profits, as this region and Napa is the center of economic wellbeing in its province and the source California's prosperity. The Napa Valley produces 4% of wine grapes in California however the region is responsible for the 30%

of the wine industry in the country. Napa stands out because of its unique wine cluster which includes geographic location and weather. A study presented between 2005-2015 observed mainly wine bottles, vineyards and the industry of wine directly from the retailers noticing incomes, salaries, jobs and other activities related to wine processes. 70% of the wine grapes were produced in 2013 (Economic Impact of the Napa Valley, 2014)

Napa's Valley economic participation is:

- Economic impact of wine industry is \$10.9 thousand million for year.
- The impact of wine industry in the valley in the California state is \$15.2 thousand millions.
- Total impact of wine industry of the valley in USA is \$42.4 thousand millions.
- Offers 30 thousand jobs in California and 161 thousand jobs in USA
- It has 231 thousand jobs nationwide only in the wine industry in the county
- Total income of the cluster wine exceeds \$4.1 billion.
- Wine industry gets 3.5 billion of tourists and spends \$714 million in wine related tourism.

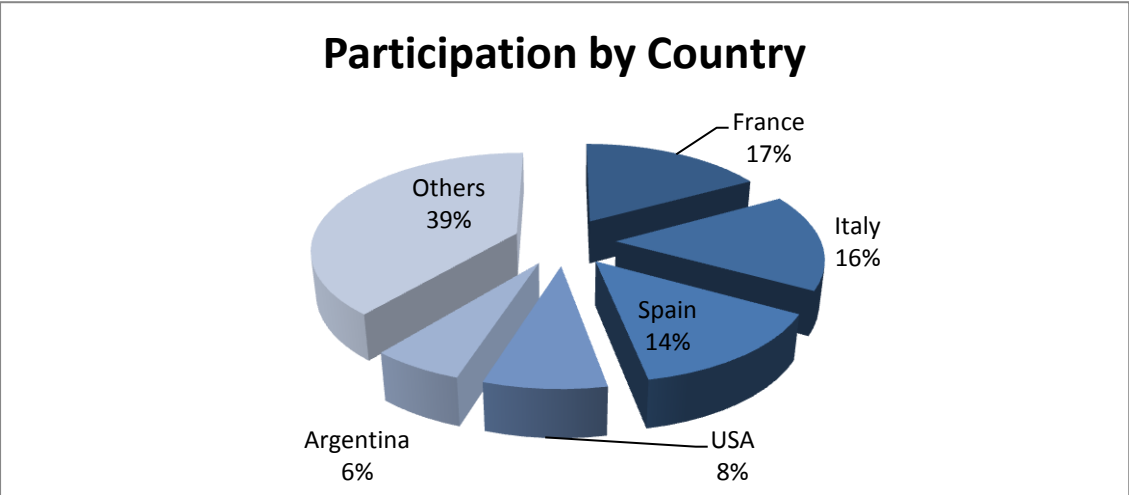
The wine cluster of California is a group established by wine production companies and institutions in the fields of design, consulting, engineering, procurement and production of building materials. It is constituted under the vision of becoming a network of companies that offers complete solutions for the domestic market and the European Union. Exports by the cluster constitute 5% of the total income of the members (Groz , 2005).

- Access to global markets

Alcoholic beverage global market is quite complex, it has a wide variety of products that has like target healthcare, individuality and image of the consumers and satisfied the quench in a certain price. The competitiveness of the market is feral and it agitates even more as new competitors arise. The more traditional European Union countries are looking to low production and improve quality as they fight to stand their ground. The market tendency is lining to customized products, natural, healthy and pro environmental. Different kinds of wine fulfill this; white wine had a rise in demand thanks to publicity and healthy reports in this manner. Because the wine that consume have directly relationship to a high life standard it provokes a growing in tourism, food,

and other areas that share this relation (Montero 2011). In October of 2014 the International Wine Organization (OIV) presented the following:

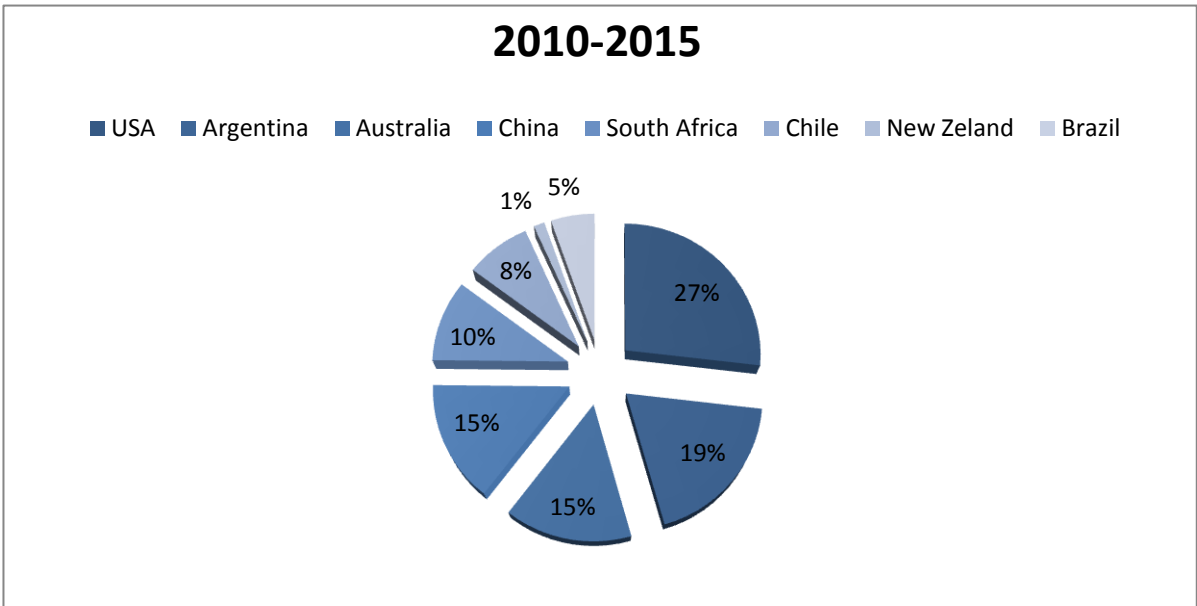
Graph 4.1 Participation by Country in the Wine Industry



Source: International Wine Organization 2014.

They concluded that France is the head of worldwide wine production with 17%, in America EE UU stands out even with its recent weather negative effects on its production. Argentina expects to rise 1% while Chile has a setback of -22% after having a 2 year record. Australia barely shows a rise and New Zealand could reach a new record with a 29% rise in its production. In recent year, according to statistics from the OIV, USA has presented a growth trend in wine production, which is shown in the next graph.

Graph 4.2 Countries with an increasing trend in production



It shows how significantly the production of USA compared to others countries has grown and continues to rise in 2014 with a production of 23 million electrolytes. While countries for example Argentina remains constant, Australia, China, South Africa, Chile submitted growth and decline. It is important to know that USA is a country compared to other countries, the production volume is little, but without changing the value for quality wine, makes this have good cash inflow as regards the wine. Also in 2013 exports were taken as follows, 90% of California, reached \$1.55 billion in revenue winery in 2013, an increase of 16.4% compared to 2012, Volume shipments reached 435, 2 million liters or 48,4 million cases. The European Union was the main destination of exports of wine in the USA, representing \$ 617 million, up 31% compared to the previous year, followed by Canada, \$454 million, up 12%; Japan, \$ 102 million, 7%; Hong Kong, \$78 million, 12%; China, \$77 million, 6%; Mexico, \$ 22 million, 21%; South Korea, \$18 million, up 16% (Welch 2014)

- **Growth in the local market**

USA makes wine in 45 of the 50 states but the products are drawn unequally in the territory. Variety of landscapes, terrain and micro weathers allows a wide variety of wines. USA has a big region that produces wine:

- California with almost 90% of the total production having an excellent cluster
- Washington and Oregon which are producing quality wines lately
- New York which is the second product maker even with only the 3% of the nationwide production.
- South and Middle East states have small clusters but with good chance of producing good quality wines.

In Napa valley cluster in the Opus One of Robert Mondavi, which was one of the pioneers in wine making, introduced steel containers into USA for wine making and encouraged enotourism.

According to Nielsen USA channel numbers off-site measurement, the most popular types of wine Chardonnay (24%), Cabernet Sauvignon (16%), Merlot (11%), Red Blends/ Sweet Red (11%) and Pinot Grigio (11%), followed by Moscato (8%), White

Zinfandel (7%), Pinot Noir (6%) and Sauvignon Blanc (6%). Moscato, Malbec and Red Blends experienced doubles (Wine Institute 2014). Digit growth while after that, Pinot Grigio and Pinot Noir coming exhibited strong upward trends.

STRUCTURAL ENABLERS

- **Academic Structure and human resources/Training**

California with its Napa Valley has been enforcing a culture for self-sustaining wine industry and has made different things to improve the conditions of the region and the viticulture involved. An example of this is the University of California in conjunction with America's Premier Wine School established in the heart of Napa valley. This academy has a program that provides WSET (Wine & Spirit Education Trust) wine, sommelier courses nationwide, certifications, different courses and workshops to every wine fan and wine professionals alike. They are highly proud of these achievements. Napa valley is constantly seeking to improve the life quality; this of course extends to workers. Napa obtained better ergonomic qualities and better salaries the worker who revels in the wine physical work. Napa Valley Winegrape Growers Association has encouraged wine producers to hire workers through well-known intermediaries and to familiarize with labor practices of whom they work for and get a good payment in return. Promote constant improvement in the intermediaries. Also a better law application so illegal intermediaries will minimize. A promissory practice states that in different wineries in the Napa County the weight of the inks used in growth have been reduce to less than 50 pounds which traduces in 5 times less body health problems for wine workers. (Myers et al. 2006).

- **Urban Planning**

Napa valley is in the state of the art of preserve and protects vineyards from the urbanization and tourism. It puts operations in sensible environmental strategic places and takes into consideration the tours to the clusters. It also have changed through the years with positive and negative effects caused by structures and traces for Ballooning which improved a lot the appeal of the region even though this would happen to make the inhabitants a bit paranoid and tend to change their houses to favor their sense of privacy. A train rail had been implemented. It goes through several wineries and crops and vineyards which meld into a whole new landscape. Recently bicycle roads have been added in a new tourism appeal attempt. At this very moment a contest is set for different proposals and projects to enter new concepts. More changes are underway.

Napa Valley has a fast paced grow in urbanism because of new hotels and different accommodations for visitors. This of course comes with technologic advance nor only for accommodations but for wine production and sales too (Mike 2014).

ECONOMIC AND FINANCIAL FACTORS

- **Economical Government support**

The wine industry in Napa valley has a multiplier effect that goes all through the county, state and nationwide with several economic benefits. This income turn to income for workers and companies which spend this income in other services and commodities. The wineries and investors are centered in funding all development level of companies through strategic alliances. The main funding of activities and programs in the Napa valley comes from the tourism improvement department (TID). Also additional support is provided from companies through different projects of funding which have the objective to promote, protect and improve Napa Valley wine as a main place for food, art and wine wealth being (Bustamante 2015)

- **High impact of the industry in the GDP of the region**

A study from Purdue Tourism and Hospitality Research Center (2006) reveals that Napa states that for every dollar spent by tourists the valley obtains 1.42 dollars. Is a quite respectable multiplier for rural communities, also the study reveals that salaries get the most of this and the lesser part is for inputs the production. California is responsible for 13% of the GDP from the USA and the stat GDP is 1.7 billion worth. If California were a country it would be the seventh economy in the world the study suggest (Purdue University 2015)

CONDITIONS OF PUBLIC POLICY

- **Legislation, regulation and standardization**

The wine regulation gets through different levels, federal, state and local. Different departments that rule alcohol label, brands, contracts, land right and international law like ATF(Bureau of Alcohol), US Customs, EPA (Environmental Protection), AMS(Agricultural Marketing Service), FDA(Food and Drug Administration), CFR (Council on Foreign Relations), TTB (Alcohol and Tabaco Tax and Trade Bureau) among others. The different regulations of the wine industry are divided into four categories: laws of viticulture practices, production laws and market and international law. USA has two labels for wine regions, politic division and geographic division. In

USA are known as AVAs (American Viticulture Area) and in Canada as DVAs. AVAS can include tree states that are joint or over the same line.

Label Laws in USA

- Harvest date, state, AVA, Origin, alcohol grades, Content, Brand, Type of wine, Address, Calories
- For the AVA the minimum is 85% of the grapes must being grown in the AVA
- 95% of the grapes must be grown in a particular harvest of the year and must be shown in the label
- Wine bottles with varietal wine must use 75% of the correspondent grape at least
- USA labels must show if sulfites are contained and a warning of alcohol ingest dangers

There is a system of tree steps between the producer, the seller and the consumer. Depending from the state there could be some exceptions allowing clusters to sell directly to the costumer at the place. Very few states allow interstate sales through ecommerce. The activity runs under very tight regulations and recently the law has been changed for clusters to build markets for selling products, but this is still in development because of taxes and other law holes around complementary activities around wine production (Bringas 2009)

- **National and state policies that encourage the industry**

In 1990 it was established a regulation that forces different places to turn urban land into agricultural land. The Government is inclined to put certain restriction around the use of territory, there are holding against establishing new clusters or the expansion of those very same given the strong regulation into commercial activity and industrial operation. Certain law protects animals and landscape from damage. The cluster association from Napa, around 220 companies, is 100% certificated in this regard (Montero 2014)

SOCIAL AND CULTURAL DRIVERS

- **Dissemination**

Napa Valley is highly impulse by diffusion of own activities from way back, therefore has encouraged the implementation of different package for tourist. A big part of it is the Napa Valley Museum which holds a wide specter of activities that allow visitors to enjoy a learning experience about wine. An international level several countries have been worried about the spreading of new knowledge about wine production. Napa valley is really careful with pro-green programs, taking care of the environment as can be seen in his program Napa Green because the unstable weather caused by pollution is a main preoccupation for the wine industry (Barrey 2015)

- **Awareness**

LINC Global (international laboratory for the study of global change) made a study, in it describes some wine regions will disappear and other will surface instead but at different locations. Therefore wine industry pretends to generate awareness about this problem and how it neither affects nor only wine but surrounding areas too. This general idea started in 2008 when some world warming issues raised.

- **Industrial Culture of associativity (inter- and intra- industrial, supply chains)**

To be successful governess must understand the value of the tourist-agriculture link and bring a way to potency business ad connections. The model has considerate this. Regional nets and leadership's cooperation and private sector strong participation tourist, structures and access development community enrolment and encourage small companies and innovation good information, transparency and promotion, inclusive business development focus.

REGIONAL ATTRACTIVENESS

- **Programs of momentum**

Napa valley has 400 wineries. They offer tours and wine degustation. The main strains of grapes in the valley belong to Cabernet Sauvignon, Chardonnay, Pinot Noir, Merlot and Zinfandel. Napa rises among others because the tourist approach which includes 50 restaurants, 160 hostels and hotels, museums, galleries, golf fields and malls. Napa valley has advantage thanks to location and is near San Francisco which means tourists are easily attracted specially for the Wine Train which offers breakfast or dinner. At the

train stations courtesy wine is offered. Souvenirs and gifts, photo making and finally boarding the train. Napa Valley has worried for improvement tours and places for tourism. When you information about Napa Valley you can come across different and very attractive tours. The visitor search is trapped by the scenery, majestic and beautiful alike. Napa has excellent wine, culture and food aside from a good place to rest and a getaway. In 2005 Napa valley welcomed a gross of 4.7 million of tourists with 129 euros average. The profile of the visitor is adult, high academic level and a salary superior to the average tourist in any other part of California. Even though Valley market is primarily domestic (Visit Napa Valley, Retrieved April 20, 2015.)

- **Specific aspects of the region that influence the industry**

Napa Valley AVA is an American wine region, this valet is considered one of the best wine regions due to it is combating of Mediterranean climate, geography and geology of the Valley are conducive for growing wine grapes of high quality. The location of the Napa Valley is fortunate since it is located in what are called stripes Wine World, which belongs to the Northern Hemisphere between latitudes 30° and 50°. As the weather sun and rain that occur in areas of wine create a benevolent environment for growing grapes “Vitis vinifera” grape species most used for wine production. They key work begins in the field, keeping watch carefully strain and orientation and watching the balance of other important factors such as the strength and origin of winds, temperature during the year, the level of desolation, the amount of water and specific soil conditions, among other factors.

- **Certifications**

Around 61 thousand acres are certified or are in the process to be. 17 thousands of them are private vineyards. Certification is applied to the whole property not only to the vineyards. Nowadays Napa Green is getting a lot of support. Winer’s in Napa announced they want all members to have right to apply and obtain a certification until 2020 in free will. The program has two components: Napa green for the land and other for the vineyards. Owners will work in developing agriculture practices and ecofriendly for their own property conditions. Internationally there are ISO 9001 which refers to internal process management and ISO 14001 about environmental care. OHSAS 18001 suggest that experts in labor security, ISO 26000 about responsibility of social

companies (ISO quality services 2015). Also product certified origin certification too. (Impulse News 2014)

INDUSTRIAL COMPETITIVENESS

- **Drivers of industrial competitiveness**

Napa's economy is grape, wine and tourist based. Main sectors are agriculture, accommodation, commerce and healthcare. The industry provides products, services to foreign markets and costumers, and of course tourists. The intake being mainly from outside sources is strength of Napa valley. Lots of tourists buy in malls. Therefore local industries are highly dependent from local costumers. Industries that export or sell in outlets/malls are better fit to flourish while local industry is too dependent of home/local income. Economic growth of local industry will depend on the approach it may take on the home market. Exporting industries which produce commodities and services for other markets can influence in local industry and help to stabilize the growth. Given the wine industry has become profitable and stable it had helped the local economic growth too. Entering this market is quite challenging but also quite rewarding (Swartz, 2014)

- **Structures of Value System Extended**

These are the main trends in the California wine industry:

- Rising in production in multi-wineries and a wide range of labels that cover wide range of prices
- Small wineries benefiting from direct sales
- Merging of medium wineries

Scale economy in commercialization explain tendencies of multiwineries, including producers of alcoholic beverages and merging of luxury brands as they buy medium wineries and offer a wide range of labels meanwhile the wine tourism and online sales support the growth of small wineries (Swartz, 2014)

- **Ability to relate complementary industries in an effective system of extended value chains and in higher value-added**

The number of winegrowers in California has increased to almost 5000 and the wineries in state to 2900. However these increments can vail even more important changes in the wine industry. The bigger wineries of California are dominant in exportations. Two of the most important wineries export around 45% in the last 15 years, the next gives

around 60% to 65% and the rest are around 75% in their export of wine. Wine exports have incremented in almost 60% since 1990. Bigger companies expanded even with a stable market.

- **Existence of global production networks at the global level and ability to insert local clusters in these networks**

Innovation as a source of superiority in competitiveness, with the idea of knowledge and learning as keys this cluster has kept it success. Wine knowledge has spread all over the world mainly because now there are a wide selection communication. Wine industry has established a fine network which correlates with the local enterprise within clusters as well as outside. All companies must keep updated with not only with local knowledge but with global knowledge also. In paper that sound great but in practice some companies behave like spoiled celebrities. Most clusters are built by weak companies or in development which results in bigger companies having the upper hand. This result in self oriented sharing. Only the ones getting benefits will share. Not only can some companies be arrogant but also predatory, especially with newcomers (Goodhue E., Green and ,Heien 2008)

ENTREPRENEURIAL CULTURE / BUSINESS CULTURE

- **Entrepreneurial culture and business development support**

The wine industry appreciates the challenge of countries that are trying to export to the USA market which count with cheaper terrain and workforce, more forgiving taxes, none environmental control, government subsidies and growing tourism. The Napa Valley has an important cultural development and the people are concerned about growing tourism, besides the valley and has many attractions cultures, among these we find the Museum of Napa on observed how production wine, also is equipped with various activities for days for visitors to spend time learning the best way.

4.3 DESCRIPTION OF THE TEQUILA INDUSTRY AND THE REGION

The production of tequila has intensified in recent years as a result of the revival that has had the domestic consumption after the global economic crisis that shook Mexico in 2009, as well due to the intense marketing promotion of the product in the domestic market (where the drink occupies a prominent place in the consumption of the population, a place that twenty years ago they had other beverages such as brandy or rum) as the export (characterized by the diversification of markets and the largest value

added built-in). The buoyancy of the demand for tequila has originated in the last few years the entry of a large number of companies and brands in the industry, in the last 3 years, the number of firms in the industry has increased by 83 % (Ministry of Economy 2010). However, in spite of the increased presence of the tequila in the beverage market, the industry has not been able to consolidate a cluster to respond efficiently to the growing national and international demand. That is to say, the planning between the production of agave and the industrialization of tequila has been a significant problem, taking constant periods of oversupply followed by other of raw material shortages. This lack of coordination has had unfortunate consequences as confrontation and loss of opportunity for the actors. Such is the case of what is happening at the moment, when the shortage in the supply of agave has led to a scattering a growing demand to not have the capacity to satisfy it. The recessionary conditions, in which the global and national economies from the global economic crisis of 2008, as well as the recent Mexican fiscal reform that raises the tax for the drink in a 60% compared to 2010, aggravate the foregoing (Ministry of Finance, 2012). This section is intended to analyze the tequila industry throughout its different links, in order to identify what are the strengths that must be developed as well as the weaknesses that require corrected consolidating in function of the regional development.

4.3.1 Structure of the industry of tequila in Jalisco

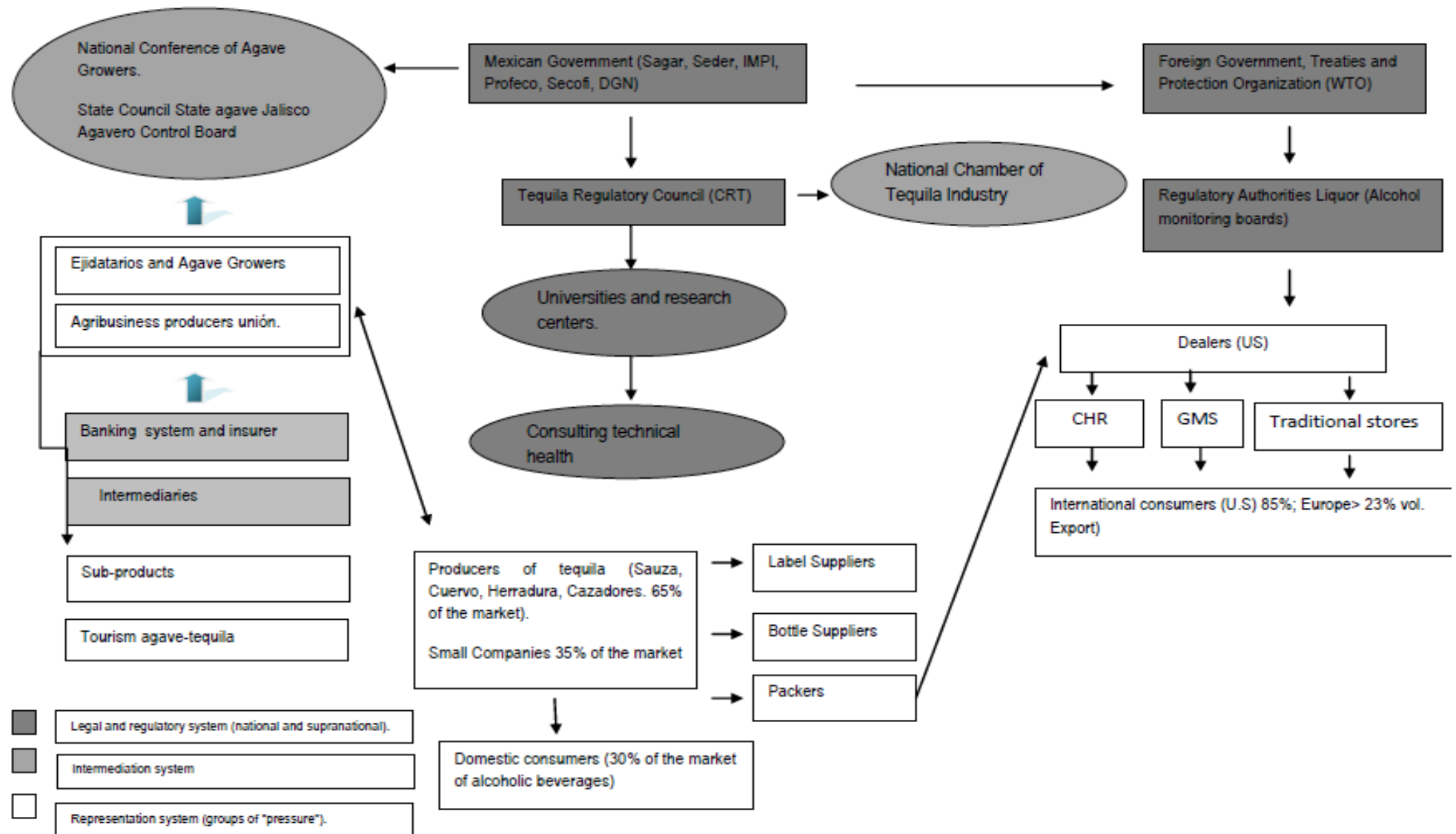
In the first chapter of this dissertation approach various manifestations of the theoretical clusters and it was determined that a cluster is a group of companies and institutions interconnected that are located in a particular geographical space with common business activities. Within this theoretical framework and the analysis of the value chain at the national level will be in the analysis of the industrial stage of tequila in the state of Jalisco. At local level the industry of tequila in Jalisco is composed mainly by the producers of agave, tequileras companies and the distributors and suppliers of the product, among others. In terms of industrial sectors that provide supplies and raw materials to the industry highlights the companies that supply goods to companies such as the glass industry, technology, machinery and equipment. With respect to the sectors that provide services include public and private entities that perform research and technological development activities related to the tequila industry. However, the participation of different actors in the main chain of the industry of tequila is focuses on

the two main actors that largely define the relationships in the industry and who are the industrial of the tequila and the producers of agave. The relationship between the producers of agave and the industry has been historically conflicting (Macias, 1999) due primarily two factors. The first relates to the fact that the industrial maintained control of the lands of agave through direct and indirect mechanisms and the second to have also controlled the price of agave, through contracts that consist in the industrial farmer provides the necessary elements and finances the cultivation period and the farmer provides the land and work (Aserca, 2000; Moon, 1996; Macias, 1999). According to Macias (1999) two companies (Cuervo and Sauza) have been identified in the past 30 years the market price of purchase and sale of the main raw material of the tequila, agave. This high concentration in the tequila industry is very similar to the wine industry in California, where four large companies dominate the market (Ever-Ja, 2004). To counteract the duopoly force of the two major companies that dominate the tequila industry and at the same time improve their bargaining power, the producers have been grouped in various organizations. They are organized in seven partnerships that bring together more than 11,000 producers of agave. However the vast majority of producers that participate, the main actors of the tequila industry are the industrialists, who have been integrated into the National Chamber of the tequila industry (CNIT). The CNIT concentrates the majority of the companies that manufacture tequila, with the functions of representation, coordination, promotion, and support the companies. Despite the obvious weaknesses (as low credibility and leadership) of the institutions that support the tequila industry, these organizations play an important role in the development of the industry.

The CRT (Tequila Regulatory Council) plays two essential functions for the tequila industry: (a) monitor quality standards for the production of the tequila, according to the Official Mexican Norm; and (b) ensure the respect of the denomination of origin. In its packaging and marketing sector, in the 2012 CRT had registered 12 companies, including Bacardi and Cia, Casa Madero, Pedro Domecq wine industries and founding Licorerías Unidas of Mexico. In short, in the tequila industry participating in addition to the companies, the government, institutions for the collaboration; financial institutions and research institutions, among others. In the case of the tequila industry the main actors are the producers of agave, the industrial of the tequila; marketers and distributors; governments both state, and national and of other countries; the

collaboration of institutions such as the CRT and the CNIT (National Chamber of the Tequila Industry) and the producers' organizations, the main service providers with financial institutions and research and development and input suppliers.

Figure 4.3 Structure of the Tequila Cluster. (Source: Own elaboration 2014)

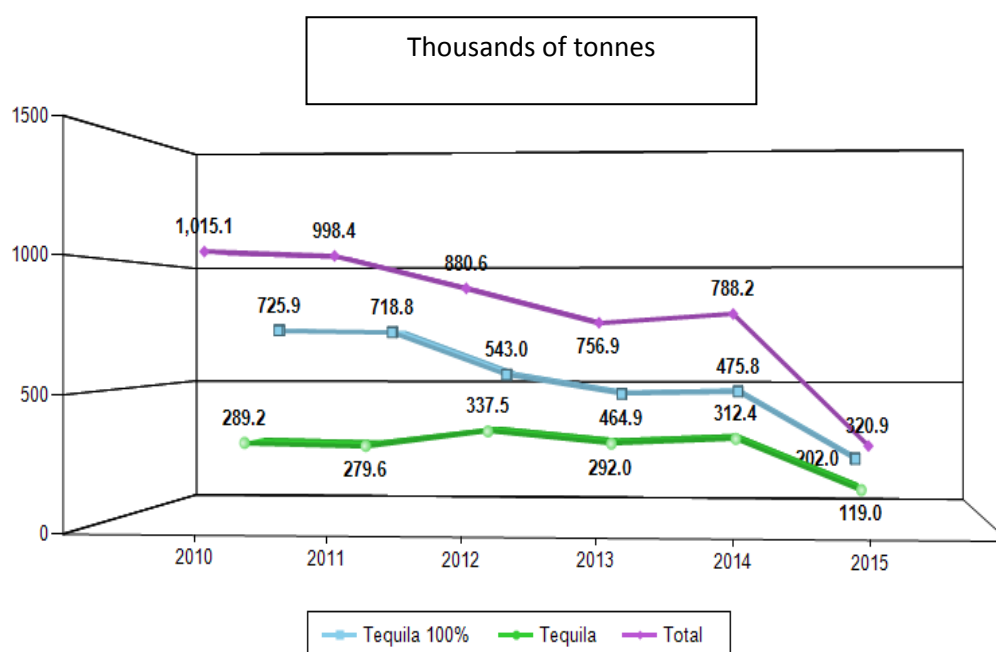


4.3.2 Features about the industry

- **General aspects**

The tequila agave is a plant belonging to the family of agavaceae, with long and fibrous leaves, bluish green, whose part usable for making tequila is pineapple or head. Tequila, is produced from tequilana weber blue agave that requires at least two distillation of fermented mash obtained from the heart plant, besides being meticulously for filtering remove impurities and soften taste.

Graph 4.3 Consumption of Agave for Tequila and Tequila 100% Agave.



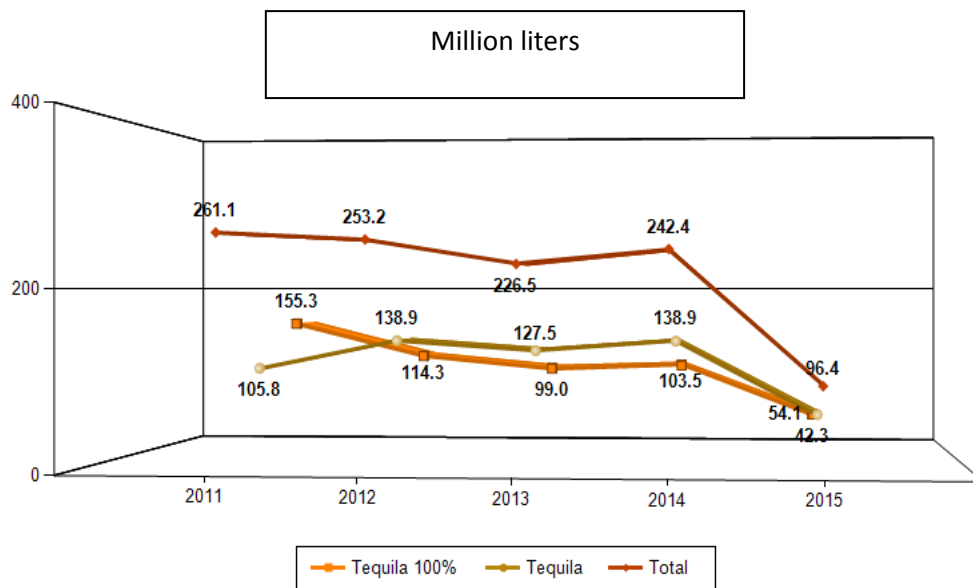
	2010	2011	2012	2013	2014	2015
Tequila 100%	725.9	718.8	543.0	464.9	475.8	202.0
Tequila	289.2	279.6	337.5	292.0	312.4	119.0
Total	1,015.1	998.4	880.6	756.9	788.2	320.9

Traditionally, relations between agave farmers and tequila industry have been marked by the confrontation and the imposition of the power of the industry to the farmers. This has caused has repeatedly periods of overproduction agave, which drastically decreases the price facing to each other. 2000-2013, for example, overproduction allowed the emergence of movement "Barzón" in this industry, one of the precursors of who later became a movement of bank debtors who joined other characters and buzzed the system domestic financial crisis in 2008. Those periods Critics often follow other shortages on increases drastically the price of raw materials, increasing the cost for industrial and causing the closure of smaller companies. A situation like the previous one currently lives, as agave shortage is such that as demand grows significantly (a growth rate of 13 percent annually over the past five years), decreased inventory agave 202 million plants that existed in 20100 Plant 107.5 million in June 2014 (Fortoul, 2014). The scarcity of raw material has been the main causes the appearance of fungus and bacteria affecting many of the crops and farming when intensive cultivation is recommended to change once the agave is harvested, inadequate fertilization system soil and the lack of a pest control and the accelerated industry growth without sufficient raw material reserves to supply it.

- **Production of tequila**

The tequila industry in Jalisco, has character of naturally derived from their comparative advantages (access Weber blue agave tequilana and booming demand beverage that there are in Mexico and other countries) has been consolidated as a result of interest public and private to raise their competitiveness and presence beverage market both inside the country and on the outside. This effort has been ongoing since the beginning the nineties with actions such as obtaining the designation of origin, although data 1978, only in recent years have implemented strategies to ensure compliance as the creation Tequila Regulatory Council (CRT), consolidation Regional Chamber of the Tequila Industry and Mexican official standards enacted to ensure quality. However, there are still many things do, among which greater coordination between primary production and industrialization of agave tequila so that there is long-term planning and put the interests of the entire cluster above power relations. In light of the elements forming the diamond competitiveness, we can say that the tequila industry presents the following situation in the production volumes.

Graph 4.4 Total production: Tequila and Tequila 100%



	2011	2012	2013	2014	2015
Tequila 100%	155.3	114.3	99.0	103.5	42.3
Tequila	105.8	138.9	127.5	138.9	54.1
Total	261.1	253.2	226.5	242.4	96.4

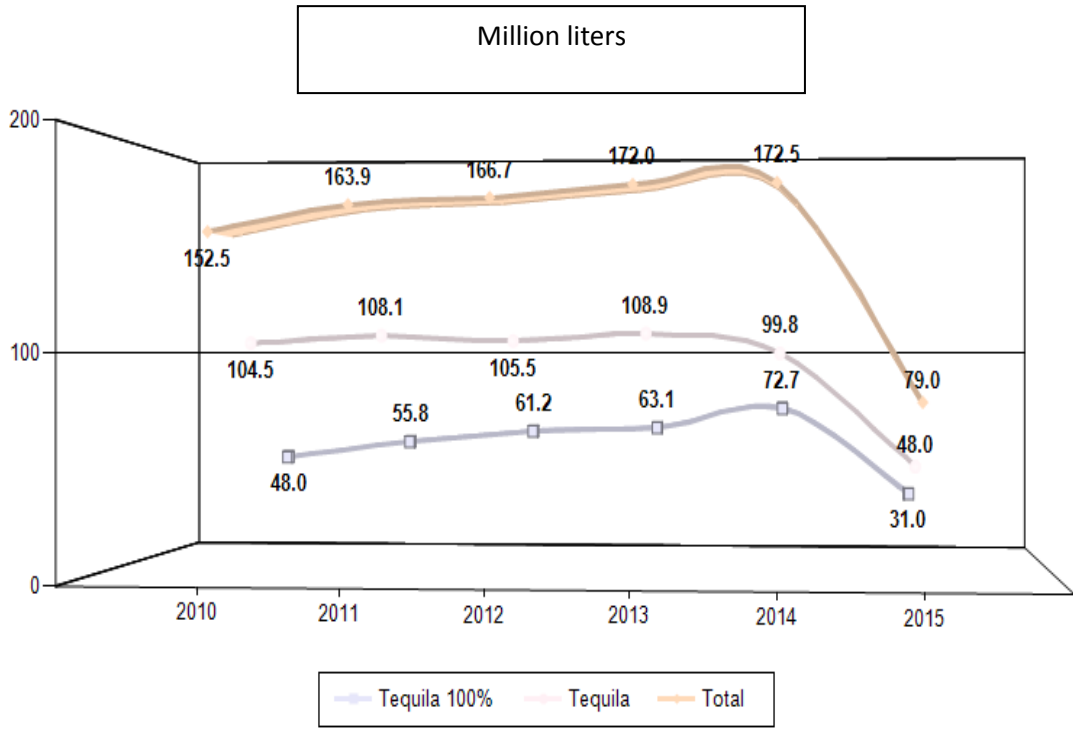
As we can see from the chart production it is not constant year after year, has many variations, these variations are derived from costs and production of agave, remember that only large companies have their own fields, while small and medium enterprises buy directly the agave from producers at the current market price.

- **Tequila exports**

The tequila is part of the offer that Mexico has to export differentiated products in the international market due to the geography allows the development of a very generous plant, the Mexican agave. The tequila is widely accepted worldwide and has become a source of powerful business. Besides factors such as the elimination of export taxes and import tariffs in many countries makes it easier for producers to become undisputed rum providers in markets worldwide. Mexico is the world capital of tequila, but the potential to offer more products of

Mexican agave no end, because we have the syrup, agave nectar in their presentations and finally regulate and organic inulin which is the main fructan of agave, used as a probiotic and fiber source, it is in high demand mainly in Europe and reaches a market price of up to 7 euros per kilo.

Graph 4.5 Exports by Category Tequila and Tequila 100% Agave



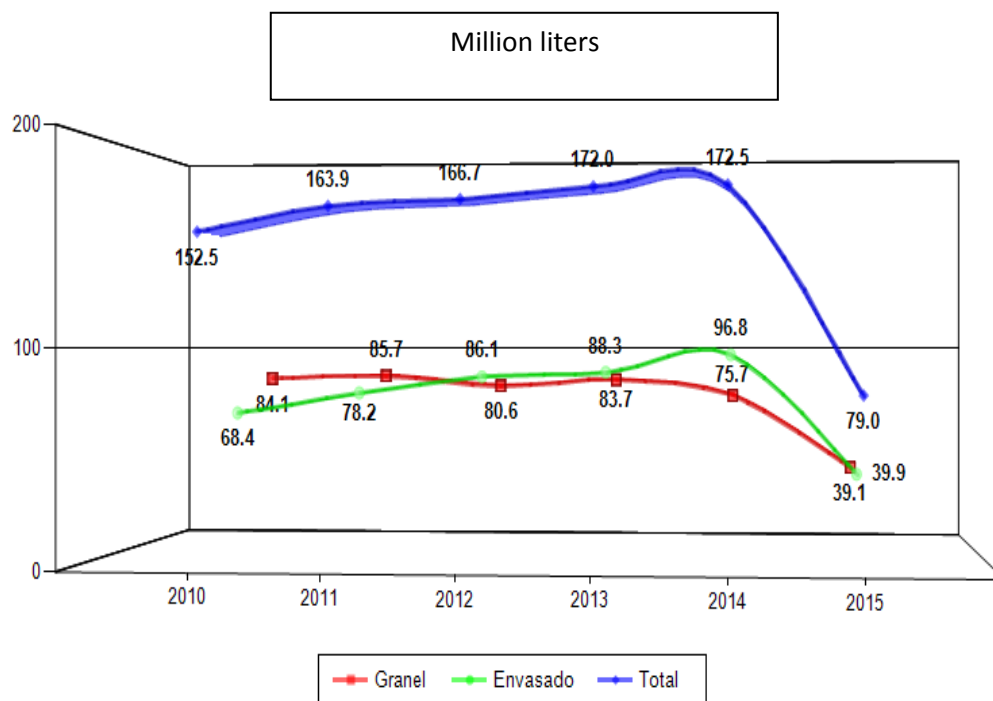
	2010	2011	2012	2013	2014	2015
Tequila 100%	48.0	55.8	61.2	63.1	72.7	31.0
Tequila	104.5	108.1	105.5	108.9	99.8	48.0
Total	152.5	163.9	166.7	172.0	172.5	79.0

Unfortunately in the first half of 2015 Tequila exports have fallen considerably, because again have been presented conflicts of interest between producers and industry agave, likewise, despite the great uncertainty of Mexico and the state of Jalisco there is a great uncertainty to invest, just as this was election year, the political climate remained tense.

- **Tequila exports by its form**

Mexican Official Standard allows the tequila is sold outside the traditional way by Mexico and bulk packaging for packaging in the international markets. Foreign sales of tequila packaging of origin grew 17.4% at the end of the first half of this year, revealing a favorable impact on sales of products with higher value added that the export of bulk tequila, which only grew 1.1 percent. The greatest possible export of liquor packaging of origin has been a purpose of the tequila industry that has gradually been reached and that brings many benefits to the regional economy and job creation and greater outlay of resources at home.

Graph 4.6 Exports by form



	2010	2011	2012	2013	2014	2015
Bulk	84.1	85.7	80.6	83.7	75.7	39.1
Packing	68.4	78.2	86.1	88.3	96.8	39.9
Total	152.5	163.9	166.7	172.0	172.5	79.0

4.4 CAPACITY OF CLUSTERIZATION OF THE MUNICIPALITY OF TEQUILA, STATE OF JALISCO; MEXICO

Below describes the situation of the state of Jalisco, Mexico, in terms of its capacity to support the industry and to its capacity of clusterization. The information is mainly extracted from the interviews with experts.

Market Conditions

- High demand of products generated by the industry

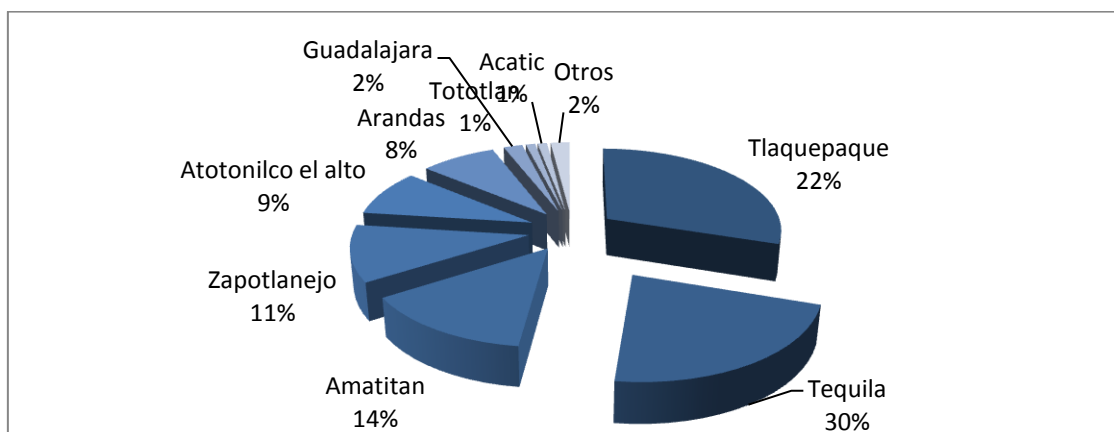
Tequila (Map. 4.1 Municipality of Tequila in Jalisco State) is a town in the Valley



region of Jalisco, Mexico; the town has an area of 1364.14 square kilometers. Tequila belongs to the Valles Region, its population in 2010 according to the INEGI has approximately 38, 534 inhabitants. The weather of town is semi-dry with winter and dry summers, and semi-warm, doesn't have definite winter season. The conditions of weather and location is excellent for planting crops cornfield, mescal, sorghum, beans, mango, orange, avocado, pumpkin and maguey. This latter exist more plantation because the main activity of this town is the production of tequila. We can refer to the maguey that use of these plantations is blue weber agave with filing the

casks, kegs and anaphora made with oak and pigskin (Mexican Encyclopedia of Towns and Municipalities 2012). In general the production of tequila in Jalisco State with respect to town that stands in production is distributed as follow:

Graph 4.7. Production of Tequila in Jalisco State (Source CRT 2014)

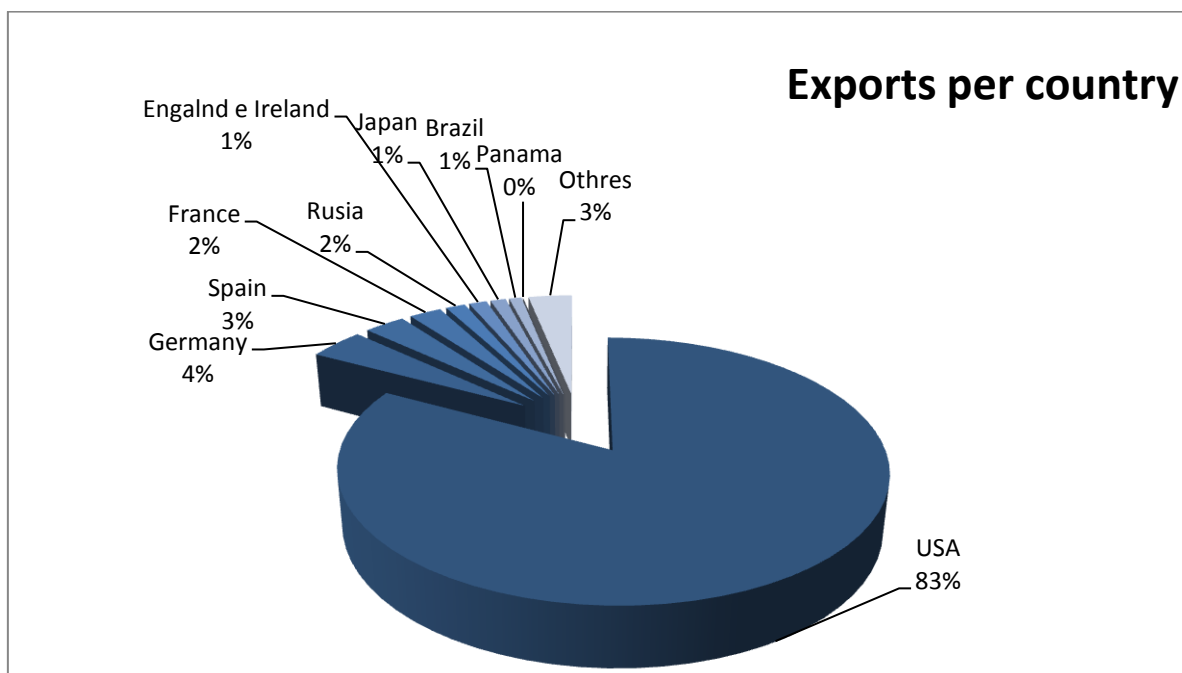


Where to Tequila, Tlaquepaque, Zapotlanejo, Amatlan and shown s the mains producers of the region hogging nearly 77% of the production of tequila. Tequila shown as the main producer, followed by Tlaquepaque the town in which this study is based with 22% of the total gross production is one of the largest producers this county with about 1/3 of the production of the 4 most important producers in the state towns.

- Access to global markets

At 20 years of obtaining their seal of designation of origin, tequila over 100 countries is exported, but only 47 of them accept the designation of origin of tequila. The demand that has had this product internationally Mexico exports averaged 120 million liters. In the next chart you can see the export performance of the product worldwide in countries where it has greater influence, This shows clearly that the USA is the largest customers of this product, registering a 83% of total exports that make the product, the European Union with less than 15% of exports and average the remaining for countries with lower product demand (Navarrete 2015)

Graph 4.8. Tequila exports per country

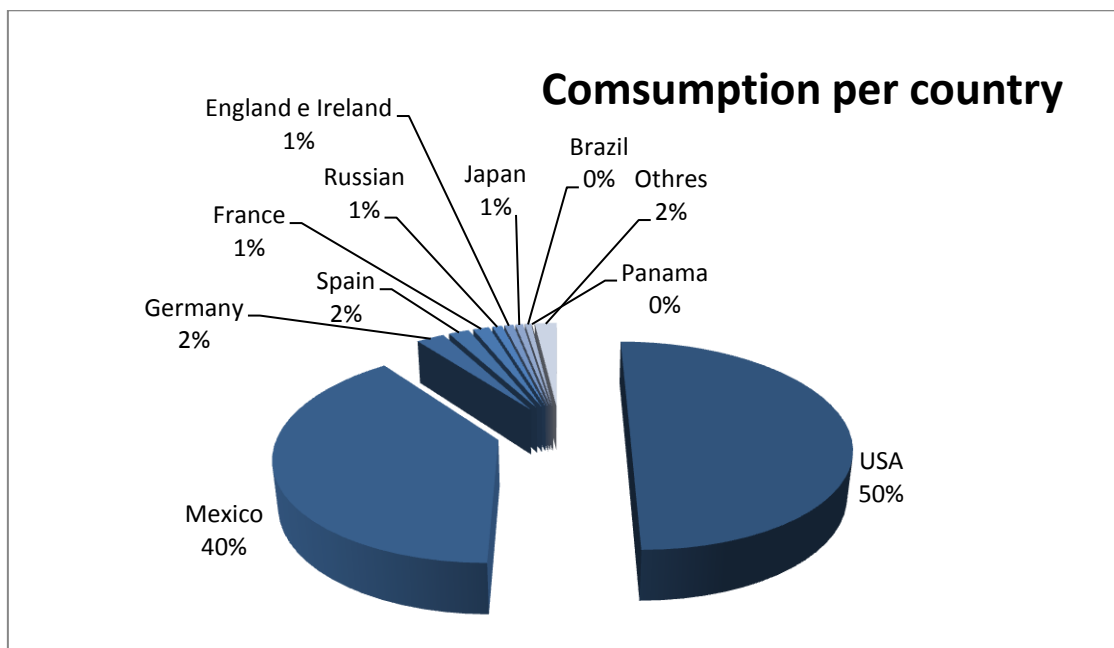


- **Growth in the local market**

The tequila industry is the main economic source in the town of Tequila, this began in 1600. In 2012 there were about 240 million liters of tequila of that about 40% of the production is consumed in Mexico and the rest went to exports. The tequila is one of the

strongest cards of Mexican exports, with average growth of 3% and 4.5% per annum respectively as the Secretary of Agriculture, Livestock, Rural Development, Fisheries and Food (SAPARPA). Lic. Miguel Angel Dominguez Morales president stated that 2014 closed with increase of 4.5% compared to 2013 and reached a production of 240 million liters of which an average of 120 million liters were for exports which according the Regulatory Council of Tequila (CRT) and the National Chamber of the Tequila Industry (CNIT), place it as a flagship product. Illustratively the following graph is presented.

Graph 4.7 Tequila consumption per country



Since domestic production of tequila has increased and therefore the demand, which results currently, counts 22 factories producing tequila in Jalisco State, in the case of town The Municipality of Tequila has 12 factories, which will be mentioned below: Producers of tequila in town of Tequila, Jalisco.

- Tequila Cazadores
- Tequila Destiladora Rubio
- Tequila D'Reyes
- Tequila José Cuervo
- Tequila Ofendían
- Tequila Ópalo Azul
- Tequila Sauza

- Tequila Tequileño
- Tequila Tres Mujeres
- Tequilas Finos de Jalisco
- Tequila Tierra de Agaves
- Tequila Don José

Although many economic units are part of tequila industry, the growth of the production has caused it a creasing oligopolistic economic field, as only four companies (Jose Cuervo, Sauza, Herradura and Cazadores) produced 65% of tequila. The Municipality of Tequila has two major tequila companies, Jose Cuervo and tequila Cazadores these are the most important tequila companies. But as we mentioned before in the methodology contact this two companies was really difficult, are companies that do not provide any kind of information, actually the only way for obtain information is with a mandatory requirement of any governmental institution.

Structural enablers

- **Academic Structure and human resources/Training:**

The National Chamber of the Tequila Industry, PROMEXICO and the Tequila Regulatory Council offers a Certified in Marketing of Tequila; with duration of 120 hours. The objective of the certified is that participants get enough information and strategies to help in the develop of the project and conduct it in international markets. This is the only academic program focus in the tequila industry; the local universities provide academic degrees just in similar areas, like chemical engineer of food producing but does not exist and academic program exclusively for the tequila production or the industry.

- **Urban Planning**

Since 2004, the Municipality of Tequila; Jalisco was included in the program of the Ministry of Tourism of the Federal Government called “Magic Towns “ distinctive certification by the Mexican government to those localities which among other things have potential as tourist destinations .This federal investment program is not intended for agricultural or industrial sectors but to the remodeling of the urban image of the center of Tequila and the creation of infrastructure for service delivery . This distinction of “Magic Town” is a way to add value to the production of tequila.

The “ Tequila magic people “ program has operated since 2004 to date as follows : first the physical image of the city center was improved , power lines hid, or traditional colors and materials available in the region for the remodeling of the center were used; integrated urban furniture, then implemented bilingual signs on the main street accompanied by extensive new sidewalks with newly planted trees and facades of churches and arches of the very first frame of the city lit up. The next phases of the project currently underway, include the construction of accommodation (hotels and hostels), the renovation of the main access to the town expanding the access road to the town, and other projects to promote tourism and organization of merchants in the historic center. All these activities are being carried out in the main artery of Tequila to the town center, adjacent to major factories tequila industry .In this place there is exposed broadcasts a view of reality; It is a center diffuser certain culture and political power (Hernandez 2009)

Economic and Financial factors

- **Economical Government support**

In November 2010 the Ministry of Economy created a Fund for support the Tequila industry, in this program are involved the three levels of government - federal, state and municipal. This fund is for the support of tequila-producing companies that are within the denomination of origin. The overall goal, to promote economic development in the region, through the provision of support on a temporary basis to projects that encourage the creation, development, consolidation, feasibility, productivity, competitiveness and sustainability and the initiatives of the entrepreneurs, as well as those that promote productive investment that can generate more and better jobs, more and better micro, small and medium-sized enterprises, and more and better entrepreneurs.

- **High impact of the industry in the PIB of the region**

For the economy of the Jalisco State, tequila production is one of the most important industries and which are responsible for most of the production of the drink nationwide. The production of tequila constitutes 74.25% of the total production of alcoholic beverages while state employs 78.66% of the total staff. The production of beverages and snuff in the state in 2010 contributed 9% of the state GDP. (Ministry of Economics 2014)

Conditions of public policy

- **Legislation, regulation and standardization**

The constitution of the Tequila Regulatory Council was approved by the Directorate General of Standards under the terms established in Art. 70 of the Federal Metrology and Standardization Law to verify and certify compliance with the Official Mexican Standard for Tequila , NOM-006-SCFI-2012.- Alcoholic beverages- tequila-specifications and NMX-V-049-NORMEX-2004, Alcoholic beverages containing Tequila-Naming, labeling and specifications, and is accredited by the Mexican Accreditation Agency (EMA) under the NMX-EC-065-IMNC-2000; General Requirements for Bodies Operating Product Certification Systems as Certification Body (OC).

The main normative references that apply to the Certification are:

- Federal Metrology and Standards and Regulation Law.
- Industrial Property and Regulation Law.
- NOM-006-SCFI-2012-Alcoholic beverages- tequila-specifications
- NMV-049-NORMEX-2004-Alcoholic drinks- Alcoholic beverages containing tequila- Naming, labeling and specifications.
- NMX-EC-065-IMNC-2000 General Requirements for Bodies Operating Product Certification Systems.
- NMX-CC-9001-IMNC-2008, Systems Management Calidad- Requirements.
- National and state policies that encourage the industry

The CRT was created by the industry in 1994 to strengthen the prestige of the drink and regulate compliance with the original denomination. The agency ensures that tequila is produced according to specifications necessary for authentic product certification. It has offices in Washington, Madrid, Brussels and Shanghai. From these international locations the Boar ensures that the designation of origin is respected worldwide and that the name tequila, is only used for certificated products. The tequila now looking to position the city of Tequila, Jalisco as a tourist destination worldwide in order to further increase the flow of visitors, to achieve, this president CRT has asked the Federal Government support headed by President of the Republic to be made public policies that promote the tequila industry, the points marked the president of the CRT, are boosting training, research and technological development in the tequila industry in order to generate economic growth. Also point promoting all products with designation

of origin, although the Designation of Origin Tequila (DOT) not allowed to produce out of Jalisco, Nayarit, Michoacán, Guanajuato and Tamaulipas this drink that does not stop companies from other countries packaged tequila. To support this effort and contributes to the consolidation of the industry, the Government of the Republic through the Ministry of Economy and SAGARPA, promotes a close dialogue with tequila; relevant action has been the creation of Integral Information Services Chain Productive Agave-Tequila, this mechanism seeks to reduce volatility in reproductive cycles and supply and their adverse effects on market prices.

Social and Cultural Drivers

- **Dissemination**

The strategic position held by the Municipality of Tequila Tequila Trail as an important tourist attraction for the state of Jalisco, but also as a production and distribution of goods and services Valles region, proper planning of your development is a key to achieving the objectives that have been raised in both the Municipal Development Plan tool. The approach of this Plan embodies the aspirations of the citizens of our town as to find the best options for growth, integrate the various proposals to boost economic growth, accommodate new ideas for development and above all to preserve our culture and traditions in the face of new challenges that arise in this new decade. From national and international recognition of cultural, economic, tourist and scenic values have been developing a set of projects, investments and public, social and private initiatives that have been reflected in a population and economic dynamism necessary to revise the instruments planning of urban development. Specifically the particular conditions of Magic Town and recognition of cultural heritage of humanity are important events that frame the content and strategic direction of the plan presented. Indeed the town of Tequila is the heart of the agave landscape not only gives name to the traditional drink of Mexico, preserves and promotes many of the symbols that are associated with being Mexican, traditions and cultural innovation present in the Plans Urban Development Tequila Jalisco Population Center, local museums, cultural festivals and celebrations, in the various events that shape the lives of residents and visitors welcome. this city has been developing, improving, organizing. New infrastructure, a comprehensive insight into the social, economic, cultural and environmental, planning of great vision, strategies, promotion and training as the Ruta del Tequila, comprehensive plans for

urban structuring collaboration with academic institutions, preparation Multilevel and interagency projects.

- **Awareness**

Establish rules and regulations for controlling land use and urban action, integrating the set of specific rules in order to define and regulate zoning uses, destinations and reserves in the land located in the area of application from the provisions of zoning of urban development and local ecological system. Controlling the growth of excessive horizontal growth of human settlement through rational policies densification of the building. Determine the obligations of owners of land and estates as well as regulate specific urbanization and construction, derived from the actions of conservation, improvement and growth in relation to the modalities of urban action.

Regional attractiveness

- **Programs of momentum**

Specific aspects of the region influencing the industry. The Government of the Republic through the Secretary of Economy and SAGARPA (Ministry of Agriculture), promotes a close dialogue with tequila; relevant action has been the creation of Integral Information Service Chain Productive Agave- Tequila, this mechanism seeks to reduce volatility in reproductive cycles and supply and their adverse effects on market prices.

- **Specific aspect of the region that influence the industry**

Tequila Trail in the Agave Landscape , The Tequila Volcano is witnessing one of the economic activities that have allowed the state position on the tourist map through this beverage having an excellent acceptance both domestically and internationally and that turn of the hand of man has made a beautiful agave landscape has long being considered as World Heritage by UNESCO . This activity has led to the development of industrial facilities that meet the specific needs of the process and the demand for this beverage ; these buildings , in some cases ruined give a special charm to the area and the terrain surrounding landscape from the volcano of Tequila to the impressive Barranca del Rio Grande –Santiago .In the municipalities of Tequila route , it has 28 hotels which have available a total of 461 rooms of accommodation .The infrastructure to stay primarily located in the magic town Tequila , and in the town of Magdalena , which account for 55 and 22% respectively of spaces available for Pernot .The area has 102 plus restaurants or food establishments, 11 spas , six museums , tour guides 34 and four

modules of information on tourism . In 2014 the Ruta del Tequila received nearly one million visitors in the region , where besides tequila haciendas , agave, breweries and taverns landscapes, mining towns, craft workshops and archeological remains of ancient Indian cultures meet .The economic benefit to the area , which covers almost 3000 300 km² , is around 560 billion pesos , according to the association. Tequila offers stunning semi-desert landscape and wide valleys covered with blue agave Tequila at the foot of the volcano or near the Rio Grande Canyon, plus colonial architecture in Catholic churches and agave plantations. The most popular towns are Tequila and Teuchitlan .One of the biggest attractions of the area is definitely World Crow, The center of this world is the distillery Rojeña, which in 2014 received 185,000 visitor . With an investment of \$50 million , Spirit of Mexico Tequila consolidate its first phase in the first half of 2015 ,with the opening of a 95 –room hotel, a convention center ,a cultural center and a commercial corridor , according to reports JB Group ,the business division Casa Cuervo (Ministry of Economy 2014)

Industrial Competitiveness

- **Drivers of industrial competitiveness**

In order to strengthen the network of value agave-tequila industry has collaboration agreements with national institutions to promote strategies that increase the competitiveness and promote a sustainable production. The challenge of the industry is to improve the conditions of productivity, profitability and articulation of the different participants in the production, industry and marketing of the drink.The increase in the flow of financing, as well as the development of training activities and technology transfer, it will be possible to obtain better results in companies involved in this industry. The industry will be truly competitive when there are good relations between producers of agave and industrials, is necessary to improve agricultural productivity and support investment in the industrial process.(Macias 1999)

- **Ability to relate complementary industries in an effective system of extended value chains and in higher value-added**

It is noticeable that between 2003 and 2006, there was an increase in production and therefore the price per ton collapsed, and it is also important to note that although later production fell the price did not recover given levels before the crisis. This circumstance may be because the tequila companies now have their own plantations and exercise control over the production, supply and demand agave. This problem is not only

economic, to punish the income of farmers, but also cultural and social, as against a low selling price of agave, leaving many farmers are losing their crops, thereby causing the Agave Landscape can lose designation made by the UN. The problem is complex, market size representing the tequila industry with their respective interests, the disruption in the production of agave at national level and the absence of a comprehensive public policy for the chain, makes the work of the municipal government is appreciated marginal.

Entrepreneurial culture / Business Culture

- **Entrepreneurial culture and business development support**

The transition of the productive sectors to sustainable models is a source of opportunities for the fledgling companies generates solutions for different industries. The tequila industry takes actions to treat waste from the production of tequila. Various companies have developed a system of treatment for the liquid wastes for produces the additives, in addition help to reduce the carbon emission. The industry is still handmade and one of the challenges is the liquid waste treatment. To produce tequila, vinasse is generated that is environmentally friendly; the proposal is a treatment that allows molecular, on the one hand, get a industrial additive and, on the other hand, allow the process generate treated water that implies a recovery of between 40 and 50% of the liquid used. The additives which result from the process can deal with in the production of databases for organic fertilizers, food for livestock, tanning hides and pigments. (Creixell, Eco Biosis 2015)

CHAPTER V

ANALYSIS OF THE INDUSTRY FROM THE POINT OF VIEW OF THE EXPERTS

5.1 DETERMINATION OF THE IMPORTANCE OF EACH FACTOR AND ANALYSIS OF THE CURRENT SITUATION OF THE INDUSTRY OF TEQUILA IN TEQUILA; JALISCO

In the questionnaire experts were asked to sort the factors to assess the current conditions of the cluster of tequila in Jalisco, from 1 to 5, with 1 being the most important factor and 5 the less important factor. In the opinion of the experts, the conditions of public policy are the most important factor for the well development of the industry; they considered that the Federal Government must have a strong commitment to the productive development of the country and specially focus several public policies in relation with the agricultural sector, due to since the intents of modernization of the country this sector has been forgotten. Therefore, is necessary to establish various programs that seek innovate productivity, innovation and growth of the industrial sector. It is necessary to establish actions for the development and growth of all the productive sectors of the economy, including traditional industries, such as the tequila. The production of tequila is one of the oldest industries in Mexico and the most traditional. In addition, the tequila is the first product with Denomination of Origin since 1974, whose owner is the Mexican State. It is a product that has become a symbol of the country at the global level, whose export represents 70% of the national production. The industry is a pillar of the regional development of the Municipality of Tequila, used in a direct way many workers, who serve as farmers of agave, cutters and producers. The followed factor closely is the economic and financial factors. The factor perceived as the least important is the regional of attractiveness, which is due to the fact that this factor is seen as more of an effect than a cause of the formation of a cluster.

5.1.1 Analysis of the results; surveys of participation by the experts

In order to perform the comparison between the best practices with the wine industry in California in Napa Valley and the current situation in the Municipality of Tequila, Jalisco, was carried out an analysis, is applied the qualitative scale, from 1 to 5, which

was used to collect the impressions from the experts in the questionnaires, being 5 the most important or favorable situation and 1 the less important or the least favorable situation, also some questions were answered just with YES or NO. (Annex 1 – Survey Sample)

- **Conditions of public policy**

Can be observed that the most favorable aspect in this case is the “Legislation, regulation and standardization” due to the recognition of the designation region of origin, created in October 13th of 1977; 31 of the 50 experts interviewed considered that the government is doing something in favor of the industry but not enough yet. It is necessary to create and promote various programs to protect the industry. The experts interviewed felt that this is a very important step to protect the industry and the brand "Tequila", which is comparable with the observed in Napa Valley; California. Below are the results:

Table 5.1. Results of Public Policy Conditions

INDICATOR	1	2	3	4	5
Legislation, regulation and standardization (Impact of the public policy)	0	3	31	9	7
National and state policies that encourage industry (Commitment of the government leaders in the industry)	9	28	8	1	4
Government investment in partnership with the private sector	3	10	21	16	0
Support for the promotion of programs for the formation of business networks on the part of the government	2	16	24	8	0
Existence of strict law the rule of law	17	30	3	0	0
Aligning strategies for industrial-public policy (Investigations to determine the interest of the companies to form a cluster)	NO: 46				YES: 4

While there are rules and policies that drives the industry, there is still a gap that should be reduced in that sense that while there are leaders committed to the cause, is still perceived a sort of legal vacuum, there is a perceived a need to develop consensus on the basic concepts and unifying criteria of the various governmental entities involved in the topic. Currently, the industry faces a major problem associated with the unfair competition, the proliferation of illegal markets and clandestine production that affect the formal character, legal and generator of employment that characterizes it.

The aspect that deserves more attention is the limited presence of regional policy require the application of standards related, since at present virtually everything is voluntary and depends on the interest to obtain any economic incentive by the part of the government, which is far from the best practice, since for the producers of the Napa Valley, there is a well-structured regulatory framework that includes penalties for offenders. In the same way it was considered as very important point is the lack of efforts to determine the interest of businesses to form or be an active part of the Cluster, both in the companies and in the government there are no studies in this regard, the only projects that exist are those undertaken by the Business Incubator of the Tecnológico de Monterrey, however as it does not have the adequate support these projects remain on paper only and does not materialize.

- **Economic and Financial Factors**

The government economic aid to the industry is considered relatively sufficient, the funds are provided by the two levels of government (Government of the State of Jalisco and Federal Government) also are specific programs implemented by the Ministry of Agriculture and the Ministry of Economy in which the government has given a certain priority. Tequila industry is a sector that provides good percentage of the regional GDP, and in view of the fact that it is recognized that the production of tequila represents an opportunity to increase the competitiveness of the region. The Tequila industry is not only a source of employment, development and value added, but a matter of national pride, as it is an essential part of the Mexican culture and of the recognition of our country at the international level. For this reason, support the development of this industry becomes fundamental for the Federal Government, but also for state and local authorities. Below are the results:

Table 5.2. Economic and Financial Factors Results

INDICATOR	1	2	3	4	5
Government fund to support industry	NO: 4				YES: 46
Knowledge of the existence of Joint Ventures or agreements of collaboration	NO: 18				YES: 32
Industry's ability to establish joint ventures	38	6	6	0	0
Government program to promote the association of companies	NO: 50				YES: 0

There is a large gap between the support of the industry by the different levels of government and the vision of the government for create programs that promote the association of the companies, not just with the tequila industry, is a general problem in Mexico, the government provides the funds but does not exist a strong policies that can control how the funds have been applied. By the other hand, just the big companies have access to Joint Ventures with similar companies, but for the SMEs it represent a big problem, actually SMEs do not want to establish cooperation with other similar companies, due to it represents “competition” for them. We can establish that up to now in Mexico does not exist teamwork and collaboration; generally the companies are working individually and limited to establish business relations with each other. The state of Jalisco is the fourth federal entity that contributes with the most national GDP; the State contributes with 6.3 %. For the sector of food, beverages and tobacco in Jalisco, the production of tequila is very important, as it constitutes more than 70% of the production of alcoholic beverages in the state, for that reason, the productive chain of tequila is a activity relevant to the industry of Jalisco, is important to emphasize that the state of Jalisco contains more than 90% of the total of tequila-producing companies in the country and produces, similarly, more than 90% of the total gross production of the drink at the national level

- **Industrial Competitiveness**

The indicator more favorable in relation to industrial competitiveness is the performance of the tequila industry in relation with other industries in the world that produces alcoholic beverages, as we mentioned before tequila nowadays is very important not just in Mexico also abroad, is a national symbol and is the pride of a nation with a population of more than 120 million inhabitants. Certainly there is still much to be done, but the Mexicans know and trust that at some point the tequila is going to be one of the most consumed beverages, not only for its great taste, but also by the benefits that brings with it consume with moderation. The Tequila Regulatory Council is also playing an important role, however, their actions have not had the impact that one would expect, therefore, it is expected that it would have a more meaningful participation. The ability of a cluster of this type to be inserted in global production networks is good, depending on how much it strengthens the cluster internally to be able to compete at the international level, we would expect that the establishment of alliances between companies of complementary industries much easier,

however, these alliances do not arise easily yet. Finally, we could say that there is not yet a system of extended value that generates value through the waste of the industry and this is the reason why this is the most unfavorable factor of industrial competitiveness in which there would be to put more attention. Below are the results:

Table 5.3. Industrial Competitiveness

INDICATOR	1	2	3	4	5
Drivers of industrial competitiveness (Industrial associations to generate value to the industry)	0	0	29	13	8
Implementation of programs of industrial ecology and recycling of materials	41	6	3	0	0
Ability to relate an effective complementary industries Extended Value System and more Value Added Chains	13	26	5	6	0
International partnerships with similar industries and complementary industries	4	30	14	2	0
Performance of the tequila industry in relation to international industries that produce alcoholic beverages	0	0	5	11	34
Impact of the actions of the Tequila Regulatory Council	0	2	6	30	12

- **Entrepreneurial Culture**

This factor presents unfavorable conditions because most of the indicators are in number 1, so shows that all gaps are very significant. While there are initiatives in the region that have been awarded, cases are very sporadic, which demonstrates that it is still necessary to encourage more innovation and entrepreneurship. In the region have developed some technologies for the industry in research centers, however still the transfer to companies in the industry is weak. Below are the results:

Table 5.4 Entrepreneurial Culture

INDICATOR	1	2	3	4	5
State initiatives to reward the tequila-producing companies.	NO: 50				YES: 0
Perception of the level of awards granted by the state	46	3	1	0	0
Existence of technological competence and differentiators of world class in the region for the tequila industry	38	8	4	0	0
Level of stimulation to the entrepreneurship	35	9	5	1	0
Entrepreneurial culture and support for business development	41	5	4	0	0

While it is considered to Jalisco as a region with a major entrepreneurial culture, the support given to the industry was perceived as poor.

- **Social and Cultural drivers**

In this aspect, there are two disturbing factors; due to the tequila industry does not reach to implement advanced technologies such as California. The second aspect, the gap is located as unfavorable is the industrial culture of associativity in the region, as it is listed as one of the major barriers to the successful formation of clusters. While the international networking is a practice which is carried out, the collaboration between universities in the region not yet easily arises.

Table 5.5 Social and Cultural drivers

<i>INDICATOR</i>	1	2	3	4	5
Diffusion (Existence of foundations or institutions dedicated to the development and dissemination of industry)	NO: 0				YES: 50
Impact of foundations or institutions dedicated to the development and dissemination of industry	0	0	3	43	4
Existence of models of technological progress in the region	NO: 36				YES: 14
Impact of models of technological progress in the region	7	13	27	3	0
Existence of a shared vision among firms in the region (Degree of participation in the strategic vision and development between the participants of the cluster)	6	12	29	3	0
Culture industrial association (inter- and intra-industrial supply chains) (Collaboration arose between the companies of the tequila industry)	16	33	1	0	0
International Networking and local partnerships (government, academia, financial institutions, etc.)	No: 35				YES: 15
Ease of emergence of international Networking and local partnerships	3	20	24	3	0

- **Market conditions**

This factor is quite favorable to the industry, consumption continues to attempt the high, and today the tequila is a drink that enjoys a great reputation, sampled by the most discerning palate. Meanwhile in the international field, the tequila gaining ground and is projected as a drink of quality, flavor and body that it is worth tasting. However the growth of the production of tequila is located in middle, because the production is irregular year-on-year, due to the fact that the raw material is the agave, some years the production of agave is greater and in some it is not, depends on a lot of climatic

conditions in the region. Another factor is the price of agave, does not have a fixed price, each producer sold it at the price they want and how much they want. There is no regulation in this area. Despite the growth in demand for tequila has tended to increase in recent years, it still does not compare with the levels achieved in similar industries such as Napa Valley in California. Below are the results:

Table 5.6. Results market conditions

INDICATOR	1	2	3	4	5
High demand by the products generated by the industry (Increase in the production of tequila)	0	18	28	4	0
Access to global markets (Exports of tequila)	0	3	5	9	33

- **Structural Enablers**

For this factor we have negative feedback by the experts, just excels the point of Accessibility to centers of highly specialized human resources (research and technological parks) due to academic institutions as Monterrey Tech have created a technology development center in cooperation with the Government of the State of Jalisco. The inadequate urban planning is not just a problem of the Municipality of Tequila, is a problem that involves several regions in Mexico . Academic programs in relation to the production of alcoholic beverages are scarce and are addressed in a general way, only in some programs of pre-degree and post-degree include this topic in its curricular structure, however, still does not have a specific program of production of tequila as in universities in the United States and Europe; in the case of the wine industry. Research centers in the region are considered relatively competitive rather than all by its quality of research in other industries such as automobile, however, research into the production of tequila and generation of new technologies for its production is just starting to be of interest to them, which is still perceived a difference important with international research centers that already have specialized research in the topic. Below are the results:

Table The state of Jalisco is the fourth federal entity that contributes the most national GDP, the State contributes 6.3 %. The manufacturing industry is the most important sector to the GDP of the state, highlighting the production of food, beverage and tobacco. For the sector of food, beverages and tobacco in Jalisco, the production of tequila is very important, as it constitutes more than 70% of the production of alcoholic

beverages in the state, for that reason, the productive chain of tequila is a activity relevant to the industry of Jalisco, is important to emphasize that the state of Jalisco contains more than 90% of the total of tequila-producing companies in the country and produces, similarly, more than 90% of the total gross production of the drink at the national level

Table 5.7. Results Structural Enablers

INDICATOR	1	2	3	4	5
Academic structure and HR / Training (Academic programs related to the tequila industry)	35	11	4	0	0
Urban Planning (Physical infrastructure that offers the municipality of Tequila Jalisco for the industry)	9	15	23	3	0
Accessibility to centers of highly specialized human resources (research and technological parks) (Level of competitiveness)	0	16	28	6	0
Intelligence industrial capabilities, trends and complementary products and systems Decision Support (DSS) (Implementation of a system of information and intelligence)	5	38	7	0	0
Infrastructure for E-readiness, world-class connectivity broad coverage and easy access to sources of information and knowledge (Technological Infrastructure that offers Jalisco (broadband connectivity in public spaces, etc)	3	42	5	0	0

- **The regional attractiveness**

Programs of momentum can be found in an unfavorable level because they have not had the expected results, the promotion of the route of the tequila, is an initiative that has been very limited by the high levels of insecurity. Below are the results:

Table 5.8. Regional attractiveness

INDICATOR	1	2	3	4	5
Pulse programs (Impact of the implementation of programs that promote improvements to the tequila industry)	18	31	1	0	0
Certifications (impact of the tequila industry certifications)	0	0	12	7	31
Project to ensure mandatory certifications	No: 50				YES: 0
Interrelationship between technology centers and the industry target (Facility of transfer of knowledge from universities and knowledge centers to the companies of the industry)	40	6	4	0	0
The transfer of knowledge is accessible to small and medium-sized enterprises?	No: 50				YES: 0

Relationships between specialized service providers and industry (Existence of specialized services)	No: 50				YES: 0
Ability to create an effective, inclusive and collaborative (research repository of value transfer and integration) Regional Innovation System	41	9	0	0	0
Existence of any cluster of knowledge in the region	No: 50				YES: 0
Facility of emergence of a cluster of knowledge in the region	0	6	32	9	3
Availability of human resources with skills in specialized topics related to the main activities of the cluster	0	0	1	12	37

The transfer of knowledge from universities to the industry companies is also quite limited at the moment, due to the fact that there is a perceived disconnect between the research of the academy and the real needs of the companies, and therefore it, nor is it considered that exists by the time the potential to form a cluster of knowledge. The common certification that presents Tequila Industry is ISO9000, is a certification that predominate in most companies in Mexico. The region is recognized world-wide; however, the insecurity has tarnished its potential to attract international experts. This is compensated for a little with the fact that in the region there are suppliers of specialized services and highly qualified professionals.

CHAPTER VI

DISCUSSION OF THE RESULTS

In this dissertation was applied the methodological framework of COMPSTRAC as a method of analysis of the tequila industry in the Municipality of Tequila in the state of Jalisco; Mexico, making a comparison with a successful clusters in a similar industry in the world, the case of the Wine Cluster located in Napa Valley; California, due to both are very similar, California is engaged in agriculture, but with the passage of time has entered a process of industrial and technological development, however, the agricultural sector has not been forgotten, however the situation in Jalisco is not the same, the State advances and is consolidated as an entity of great technological and industrial development, it is the second largest in Mexico entity and provides a large percentage of national GDP, but the agricultural sector is forgotten and industry tequila has made significant lags. New business arises from the cluster for many reasons. Companies associated in a partnership may receive a niche markets for their products and services more easily, and around these new businesses can thrive. The result is that companies in alliance partner outperform competitors in other locations. Partnerships can also be developed by relying on sophisticated or strong local demand. The prior existence of supplier industries, related industries or even other related partnerships is the seeds for the clusters. These alliances are constantly evolving with the emergence or exit of industries and new companies as local develop and change. However, to justify the development efforts of a partnership, or a seed, the undertakings concerned must have already passed a market test. To identify best practices, we analyzed the Wine Industry in California, this cluster is a very good example of an organized industry and that stand out for their success.

6.1 CLUSTERS AS STRATEGIC COMPETITIVE ADVANTAGE

Competitive advantages in our times are no longer about the access to inputs such as natural resources, it is all about productivity. Productivity rests on how companies compete, not on the particular fields they compete. Such companies can be very productive in any industry if they employ sophisticated methods, use advanced technology and offer unique products and services (Porter, 1998). The sophistication with which companies compete in a particular location is strongly influenced by the

quality of the local business environment. Companies cannot employ advanced logistical techniques without excellent transportation infrastructure, nor can they compete on sophisticated services without well-educated people. Some aspects of the business environment, such as the legal system, or corporate tax rates, affect all industries. In advanced economies, the more decisive aspects of the business environment are often specific for clusters; these constitute some of the most important microeconomic foundation for competition.

Clusters competitive aspects in three different ways (Porter, 1998):

- By increasing the productivity of companies based in the area
- By driving the direction and pace of innovation, which anticipates future productivity growth
- By stimulating the formation of businesses that expands and strengthens the cluster itself

A cluster allows each of its members to benefit from it as if they had greater scale or as if they had joined with others without sacrificing its flexibility. Being part of clusters help companies to benefit their productivity in the following aspects:

- Better access to employees, suppliers and inputs
- Access to specialized information
- Complementarities
- Access to institutions and public goods
- Better motivation, measurement and easy benchmarking

Poor countries and regions don't have well developed clusters. Like Mexico, these countries compete on cheap labor, natural resources and strategic geographic situations. In order to improve this non-value-adding situation, the development of clusters plays a strategic and essential role for those economies.

6.2 BENEFITS OF CLUSTERIZATION FOR A REGION

6.2.1 Introduction to the benefits

In Mexico several initiatives have been developed for clusterization, being the most representative industries in this regard, software, biotechnology, nanotechnology and

other; clusters have been developed mainly in regions such as Jalisco, Mexico D.F. and Nuevo Leon. The maquiladoras¹⁰ are located mainly in the border regions, although generate supply chains around itself, cannot be regarded as detonators of clusters due to the fact that in this business model, generally benefit from the foreign companies and not the region or the community. The case of France and its initiative to create "Poles of Competitiveness" is a clear example of the generation of a successful strategy of clusters (Bretons & Scheel, 2008). The Government of France in a research found that the academic production was insufficiently connected with the needs and priorities of the industrial groups. French SMEs also showed a disconnection with the academia in the research carried out by the Ministry of Economy. In 2004 the initiative was launched and by the end of 2005 had been formed sixty-six clusters that number increased to seventy-one at the beginning of 2007. These clusters are focused in areas of high approach of Research and Development (R&D) and innovation. One of the major benefits that have been generated from the poles of competitiveness is the continuing process of learning at the individual level (learning by doing and using), at the level of the individual company (learn through specialization an location) and level system of enterprises (collective learning through interaction) (Carbonara, 2004). Another important benefit is that the poles of competitiveness are specialized services available for businesses that would otherwise have no access to them. It also has demonstrated the need to strengthen the relationship between companies and financial institutions and/or equity investors.

On the basis of the experience of France and other regions in the world, possessing successful clusters, we can group benefits in seven premises (Scheel & Ross, 2007):

- Clusters generated regional attractivity.
- Clusters create a critical mass of key players in the industry, which increases the regional competitiveness.
- Clusters improve the productivity of each company participant individually.
- Clusters generated a high value of differentiation,
- Clusters generated a high value added.
- Clusters increase the quality of the social capital
- Clusters generate sustainable profits.

¹⁰ Maquiladora is a manufacturing operation in a free trade zone (FTZ), where factories import material and equipment on a duty-free and tariff-free basis for assembly, processing, or manufacturing and then exports the assembled, processed and/or manufactured products; sometimes back to the raw materials' country of origin.

6.2.2 Detail of the benefits and best practice examples

- **Regional Attractivity**

Cluster generates and improvement in the regional identity, which is seen through the recognition at the global level, for example: San Diego is known worldwide for its biotechnology cluster (Mentus Life Science; Ernst & Young, 2005), Jalisco is a region known for its cluster software and electronics, a pioneer in the country and Toulouse is a region represented by its aeronautics cluster, driven mainly by the settlement of the central offices of Airbus (Hickie, 2006). The cluster also produces an improvement in the Index of National Competitiveness, which is observed through a comparison of the country's position in this ranking, before and after the implementation of the cluster.

Similarly, the strategy of cluster attracts investments on the basis of the model "Joint Venture " for the creation of new companies, a clear example is Brazil, where, from the generation of the automotive cluster, several foreign companies have been established in regions that offer incentives for the establishment of production plants, carrying out a number of investments under this model (Sakuramoto & Serio, 2004). The clusters attract Foreign Direct Investment (FDI), as well as, technological support and world-class talent. One way to observe it is by the amount of FDI per year and compared with the index of local investment. In this sense, a clear example of this is the case of Costa Rica, where from the settlement of Intel, thanks to a public policy carried out correctly, other internationally recognized firms have been established in the region attracted by the favorable conditions were created originally to attract Intel. According to data of the country, from the generation of the cluster the FDI in Costa Rica, a 50% increase above the average in the next year (The World Bank Group, 2006). Another positive effects of the cluster is the generation of a robust network of business incubators, which is discussed on the basis of the number of new ventures and/or efficiency of the accelerator Companies. In Monterrey, Mexico, a region known for its automotive cluster, have created 87 incubators that serve more than 1400 companies that have generated around 3200 jobs. Networks of technology-based incubators help transfer innovative ideas and projects to companies high-value-added several industries and mainly the automotive (Tecnológico de Monterrey, 2009). The cluster also improves the regional business climate. In the case of Brazil, in 1997 achieved the maximum production in the automotive industry, right in the middle of the consolidation of MERCOSUR, a fact that attracted to large companies in the sector, such as Chrysler, Mercedes Benz, Audi, Fiat-Iveco, Honda, Peugeot, Renault, Toyota, Mitsubishi, Nissan

and others, to establish production facilities in the region (Sakuramoto & Serio, 2004). Also, the clusters help to develop legislative frameworks more robust and suitable global to promote the FDI, which can be analyzed on the basis of rankings and indexes of transparency. An example is the case of Costa Rica, in which the government established a political system reliable and relatively transparent between their policies to attract foreign investors (The World Bank Group, 2006). Finally, a cluster promotes the existence of a Regional Innovation System (RIS by their acronym in English) with governance from idea to the creation of the company and the whole chain of innovation activities. Examples of this have been observed in: Spain, Korea and Brazil where priority is given to the collaboration to generate innovative ideas and technologies.

- **Critical Mass of key players of the industry**

Clusters helps to improve the quality, size and access to local value chains well-structured and generate economies of scale to accelerate the response to the market due to the diversity of supply, which is seen through the size of the critical mass of companies in the industry and the speed of response toward the market. Here we can mention the case of the textile cluster in North Carolina, United States, which generated an infrastructure of specialized inputs by the large number of companies that require similar services (Scorsone, 2002). Also, clusters contribute to the improvement of the value added in manufacturing, which is discussed on the basis of: production per employee, reduction of changes in the product through the time, operational efficiency and/or reduction of the production cycle of products. The clusters also generate an improvement on the market value of the industry in the future, being an example of this, the classic case of Silicon Valey, which currently is the center of operations for 100 of the largest and most important technology companies of the world (Saxenian, 1994), which are currently the fastest growing companies due to its high degree of innovation. The settlement of the cluster helps to improve the participation of the industry goal in global markets, thereby generating an economic growth at the regional level, doing possible a greater impact of the industry in the Gross Domestic Product (GDP) national. An example of this fact is the industry of Information Technology (IT) in India, whose income is multiplied ten times in the period 1997-98 to 2006-07, increasing its impact on the country's GDP from 1.2 % to 5.4 % during the same period. (The World Bank Group, 2006). Another positive effects of the cluster is the increase in exports of high

value-added industry in manufacturing products and technologies, once again resorting to the example of India that account with the amount of export of software of \$4 trillion, which places the IT industry as the most exported global in the country. One of the most observable effects is the increase in the number and quality of the patents generated in the region, which was introduced in Korea, which ranked in 2004 in the third place according to the Index of S&T that measures the productivity of the patents and patents granted to residents (Yim, 2006). Clusters help to generate human capital of high value and performance, for example, the Observatory of Science and Technology ranked to India as the third largest source of scientific and technical workers at the world level competitive wages with relatively lower than those of their American peers. Finally, clusters help to reduce the risk of the industry, which is seen through the risk index. An example of this is the biotech industry that by its nature represents a great risk to businesses for the low probability that a medication reaches the market; therefore, the collaboration between companies involves distribution of risk and access to a greater knowledge base. (Braunerhjelm & Helgesson, 2006).

- **Improving productivity of each individual company**

Clusters generate a quick and easy access to specialized services offered by companies and highly qualified workforce, an example of this is Curitiba in Brazil, where it has developed a cluster of innovation focusing on environmental technology and software development, which has generated an influx of high skill technology that filled the needs of prior specialized consulting services (Bortagaray & Tiffin, 2000). Also, clusters generated an increase in the value added and business units with differential processes, a fact that it has been observed in Mexico in the automotive sector, specifically in the case of Volkswagen that developed its model New Beetle in the country thanks to the cooperation of engineers and designers Mexican, German and Californians. Thanks to this, the plant in Mexico generated much knowledge through this experience (Humphrey & Memedovic, 2003). This implies a redesign of processes following world-class standards and the generation of shared services.

Another of the positive effects is the reinforcement on the bargaining power of companies when they are part of a cluster, a fact that is seen mainly in the increase of the critical mass of companies that begin to make their negotiations as a whole. Clusters generated I&D more productively funded by private initiative. In the biotechnology cluster in the Medicon Valley region of Oresund, which is located between Denmark

and Sweden, the companies are part of the research programs in universities through the direct participation of its employees who divide their time between academia and industry, with which the flow of information is easier and faster (Sakuramoto & Serio, 2004).

- **High Value of the differentiation**

Cluster helps to generate best practices in the industry, and key skills highly spreads and recognized at the global level, for example, at the time of planning the textile cluster in North Carolina, officers of the Chamber of industry companies, academia, the economic advisor to the Governor, and other delegates, travelled to Castel Goffredo and Carpi in Northern Italy to make a benchmark with the textile cluster from the region by visiting the centers of research and technology, trade associations and companies of the industry (National Governors Association, 2002). Clusters reinforce and help to improve the quality of the extended system of value, a fact that can be seen in Canada, whose technology-based clusters will be anchored at Universities Researchers strong, industrial laboratories and undertaking initiatives that are coordinated to generate value, on the whole, these clusters form a regional innovation system and national (Holbrook & Wixted, 2009). Finally, the cluster generates the recognition of their identity on the part of the government, a fact that has occurred in Brazil and Mexico where governments have implemented initiatives to maintain the growth rate of industry of high potential, demonstrating the priority given to those industries (Sakuramoto & Serio, 2004).

- **High Value-added**

Clusters are generated interconnected processes, alliances, and networks of highly specialized human resources, in India, for example, one of the clusters of software more competitive in the world, 200,000 people are trained in different science areas and technology related with it, is a priority for the government (Grondeau, 2007).

- **Clusters generate an integrated governance by means of ABIIGS¹¹ council**

Cluster improves corporate status with a strong business leadership through business associations based on the cluster. In the experience of Emilia Romagna in Italy with the cluster of the textile región, was observed that the technological centers continuously

¹¹ Academy, banking sector, complementary industries and support especifica infrastructure, government and social capital

required public subsidies to stay in the posición of leadership in the industry, and must be located within the cluster and work in colaboración with other similar institutes (National Governors Association, 2008). Thus collective learning generated through technology transfer, innovation, proper management of tacit knowledge and transfer of "Know-how", which is demonstrated by analyzing the case of the biotech cluster Oresund, which has created a base knowledge of highly qualified human capital (Braunerhjelm & Helgesson, 2006).

- **Quality of the Social Capital**

The generation of the cluster improves confidence as a group and as a member of the group of companies (Lublinski, 2003). Also generate a stronger social cohesion between ABIIGS, which is shown in the case of India, where government support to the IT industry has focused on the generation of an inclusive environment between all stakeholders (NASSCOM, 2009). Similarly, the clusters allow you to create networks and councils that eventually become part of the industrial practices of the region that can be adopted by other industries. An example is the automotive cluster in Monterrey, which is a reference for other industries to form networks and tips that promote best practices. Also, the clusters promote the sharing of resources at a general level, which is mainly observed in industries with extended value chains that lend themselves to the development of joint innovation, such as the biotechnology industry. A very important effect of the formation of the cluster is the generation of a collective planning and shared vision which later serves as a benchmark for companies that move in the same line trying to attain a common goal. This is complemented by the generation of participative leadership that is a feature that is seen in the clusters more successful of the world.

- **Environmental Capital and sustainable benefits**

Nowadays have become more importance clusters with an environmental approach, being one of the major benefits that generates, the reduction of the ecological footprint left by the participants of the group, which is seen through the reduction of pollutant gas emissions. A very interesting example in this regard is Kalundborg in Denmark, a region that is characterized by the "industrial metabolism", a practice through which waste from an agent is transformed into the inputs of a new process, thus forming a recycling chain which minimizes the generation of waste. Similar projects have been implemented in Sweden and other regions of Europe, which converts to whole cities in

environmentally efficient systems (Peck, 2009). Thus the widespread adoption of industrial ecology practices not only in industries focused on caring for the environment, but also in complementary industries is promoted. Another important benefit is the improvement in the use of natural resources, with a focus on saving energy, water and proper waste management, as well as the adoption of innovative technologies friendly to the environment. In Canada, the Eco-Efficiency Centre in Burnside Industrial Park is considered by the United Nations as an effective model to help diverse businesses to adopt environmentally efficient practices in the use of energy, water and materials. The center also facilitates the generation of business networking opportunities to benefit from conversion to a greener approach (Grant, Weller, Zhu & Toews, 2006).

6.3 OBSTACLES IN THE CREATION OF A CLUSTER

In the clusters, go to the cooperation after lacked it, it is difficult, especially when those who do not participate in the clusters are benefiting from the cooperative efforts of others. From this moment on, all the attempts of cooperation on the part of individual actors will be seen by the other actors as an opportunistic behavior, thus hindering the cooperation and strengthening the no cooperatively. When the companies manufacture similar products, their attitude tends to the opportunism due to its keen interest in selling. The companies compete for the same customers, and each one of them will tend to sell cheaper than the competition, which is a stimulus for innovation and increased efficiency at lower cost. Many professionals and researchers have emphasized the importance of the rivalry in the dynamics of the clusters (Saxenian, 1994; Porter, 1998). Both from a theoretical perspective and empirical, are expected to emerge and strengthen non-cooperative actions, and any initiative to strengthen the clusters and go to a form of cooperation will be very complicated.

6.4 OBSTACLES IN THE COOPERATION

In order to identify the most common obstacles is important to analyze each one of the main areas of cooperation:

- Obstacles to cooperation between enterprises: With regard to the interconnection and formal cooperation, either in partnership or in another form of cooperative operation, each company will evaluate the benefits on the one hand, and the costs and risks on the other hand such cooperation. The benefits will often be in

the long term and hypothetical, while the costs and risks are immediate. For a company, the most immediate risk is the loss of their trade secrets, as the technology or the knowledge of markets and customers. These risks are an important reason for that companies do not participate in cooperative operations with their direct competitors. Among the direct costs of cooperation include first and foremost, transaction costs and opportunity. A good way to ensure the cooperation and the loss of the fear is cooperative meetings, doing a true follow-up and produce documents for analysis and evaluation.

- Problems of cooperation between companies and institutions of support: For many institutions of support, the satisfaction of local clients of the private sector is not the only objective, and often not even the most important. For example, the researchers want to publish their results promptly and wide dissemination with a clear explanation of the issues, while companies are looking for also fix them quickly, but keep secret the results of its investigation.
- Problems of cooperation between the private and public sectors: Structures of local governance, how they interact with companies and other items of potential clusters, limits can be set to the projects or you can direct the activities of promotion to diversify the local economic base to achieve as much as possible a broad diversification and avoid the vulnerability that involves relying on a single sector. Another phenomenon that has been observed in clusters that already have several years is a collective attitude conservative. Finally, in the countries that have a long tradition of a strong presence of government, a private initiative to strengthen the clusters and systemic competitiveness can be viewed with deep suspicion.

There is no quick and easy way to solve these problems. What is clear is that in all cluster either of these problems can arise at any time.

6.5 CLUSTERS IN LATIN AMERICA

In comparison with companies of advanced countries, producers in developing countries have the advantage of lower wage costs. Without doubt, during the seventies and eighties, this allowed them to conquer portions of market to the detriment of the manufacturers of the developed countries, in particular within the labor-intensive sectors such as textiles, footwear and toys. However, the conditions from the nineties to

date have changed. Other countries with even lower wages have made their entry into global markets, China and India in particular. Simultaneously, global buyers insist on a better quality, lower delivery times and smaller lots (Schmitz, 2000). Another important aspect to consider when is doing an analysis of this region is that not all countries are in the same conditions. Economies such as Brazil, Chile and México are economically more developed countries in comparison with others, such as those in the countries in Central America or South America such as Colombia, Venezuela and Peru, whose economy is based on the exploitation of natural resources, such as oil, and whose manufacturing sector still depends on the technological modernization (Scheel & Pineda, 2008). Studies have shown that even in technology-intensive sectors, targeted investments to generate innovation in developing countries, is not focused on research and product development, but in the reduction of costs, logistics, administration and other activities related to the sensitivity of the profits toward the costs (Feser, 2002). The success of a cluster depends on the specific characteristics of the industry and in the region. In Latin America are presented some common characteristics that make it difficult the emergence of successful cluster, such as (Scheel & Ross, 2007):

- Low willingness to form partnerships between companies that compete in the same market
- Law enforcement not rigorous divergence between public policy and key economic factors
- Lack of confidence among companies
- Limited ability to be integrated into global markets
- High complexity in terms of structure both economic and social

6.6 ANALYSIS OF THE FACTORS; IMPORTANT REMARKS

6.6.1 The scarce presence of the university

By analyzing the origin of the Wine Cluster in Napa Valley; California we found that one of the paramount factor was the American's Premier Wine School that thanks to the vision and the dynamism of some of their leaders and members has turned it into the main promoter of the cluster. The Wine cluster in California is kept alive thanks to the stability that gives training, different centers among colleges and universities. As has been said before, the first invention and the second knows how to output the product in the market place. It is therefore surprising that in the structure of the tequila cluster the academic programs related to the tequila industry, production, etc, not exist and, as has

been seen in the different clusters, were and are the basic building block that promotes the knowledge based economy. Therefore, in the tequila industry is not met. Anyway, the university factor is not lost, because theoretically there is a link between the industry and Tecnológico de Monterrey, they cooperate with the industry in some projects, but still their contribution to the industry is not enough. Unfortunately, there is no link with any state university; just the private sector contributes with the development of the industry. The major drawbacks of the little contact university-cluster manager, is that completely overrides the direct impact that represent the universities within the cluster, whose effects have been analyzed previously, being the following, the key point power of direct interaction demand tequila cluster - offer university

- Increased retention of talent
- Adapt the university needs to actual market
- Direct interaction company – university
- By actual needs of enterprises are created more spin-off resulting from research centers
- Sustain business activity within the cluster by changes in market
- When is create an innovative climate it attracts foreign capital

It is interesting to contrast the lack of dynamism in the university environment existing for the tequila industry with the results found in California which is an example of active cooperation. Jalisco is a dynamic state in Mexico in the creation of new economic activity is the Guadalajara (Capital City of Jalisco State) area, with important university centers among which is the Monterrey Tech (ITESM). The ITESM have a great capacity to foster innovation, entrepreneurship and the creation of occupation. However in Mexico all efforts for the creation and development of new businesses and technology have been oriented toward the manufacturing sector, neglecting the agricultural sector. Educational institutions such as the ITESM offer educational programs for overall quality, attached to the highest international standards; however Mexico is a country that does not promote public policies aimed to promoting the rural sector. For this reason we find in Mexico a great contrasts, the prosperous and industrial country, in which the owners of the means of production make large fortunes and the rural Mexico, abandoned, plunged in extreme poverty, without opportunities. That is

why many people seek as solution immigrants to the United States in order to find jobs and opportunities that in Mexico are not generated. It is interesting to remember, that the local advantage more important for companies in the cluster analysis of the wine in California, was the proximity to the universities above other such as availability of staff, proximity to related companies, communications, and quality of life, etc. In regard to the study on the influence that should have every one of the major (government, business, university) during the evolution of the cluster during the theoretical life cycle, you can see that the shaft of the university has a special significance during the growth stage and launch, stages in the tequila industry have not existed. The cluster of tequila is located in the grown stage.

The evolution of the cluster of the tequila during the different cycles, can be determined as follows:

- Creation: In the phase in which it creates the environment of the cluster with the creation of the denomination of origin by the federal government. And the creation of the Tequila Regulatory Council exercised by both the university role as the government, and the reality is that this was handled by the producers of tequila with the help of the Ministry of Economy of the Federal Government.
- Launch: Is the phase of the environment and the foundations of the cluster are creating. The cluster of tequila, as cluster manager, acquires greater role as a manager while each time they enter more firms in the cluster, and the government has a minor role.
- Growth: It is the phase where the companies have to start taking the initiative for the development of the cluster, and together with the regular Council of Tequila give meaning to the cluster while the collaboration of the government there is a waning.
- Maturation: The cluster of tequila is entering this stage. Both companies and the Tequila Regulatory Council have to give real meaning to the cluster and the government plays a very important role in creating the legal framework to encourage the industry.

6.6.2 The lack of a shaft or guiding principle for growth

In the cluster of the wine in the Napa Valley, was an important factor the fact that there was no industrial tradition upon which would block the opening of the region toward new economic activities, but in the case of the cluster of Tequila, was what promoted the change of the economic model, because if it is true that possibly this industrial

tradition will delay the change model, but at the same time, for reasons of disused industrial, was what triggered the paradigm change.

What if that was not in the cluster of the Tequila was a funding by different government agencies in order to encourage the creation of the cluster, which have existed, it would have boosted its technological centers. Each producer of tequila is responsible for funding its costs of production, the bearings are present when the company already reaches a certain level, but home is not equipped with any type of support.

6.6.3 Little development of social capital and innovation

In the heart of the Napa Valley, is the most subtle and, possibly, less imitated, and that is what might be called its 'social capital'. It is the coexistence of some vocations of competitiveness and cooperation, oriented both to innovation. The definition of innovation is more marketing invention, and in fact, one of the obsessions of Napa Valley is trying to dump all the invention in its success in the market. And that problem for which he is being questioned, comes in the wake of a recent study published on 14 November 2010, by the statistical office of the Union of American States (OAS) and that the results of the study are shown below, where you can observe that, Mexico, is the third country in the continent with the lowest percentages of innovative enterprises, with a 43.5 per cent of the total, only above Brazil (36.1 %), Argentina (37.4 %) and Chile (30.8 %), according to data from the OAS. On the contrary, countries with a higher percentage of companies with innovative activity are Canada (80 %) and United States (65 %). In the field of cooperation, which stimulates the development of clusters, and in that aspect, those Mexican companies were also innovative in the least that made any kind of cooperation with other companies or organizations, and thus the least cooperated with other member states of the Organization of American States or China or India, being its cooperation practically non-existent. In total, only worked the 18.7 % of the total number of businesses with innovative activity, compared to 34.2 % of the average for the Organization of American States (OAS)

6.6.4 Few networking activities and state innovation

In the midst of this environment, is as the principal "social value" mentality and the way of being of the people involved .In fact, one of the slogans of the MIT, Werd, Stanford and many other American universities, contrasts sharply with the Mexican culture and is: "If you can't find work, create it yourself". In September of 2014 was held the Paris France the Networking Day, organised by the Association of Students in Europe of the

Tecnológico de Monterrey, a congress was quite interesting for a duration of three days to try to analyze the enterprise networking, there was a quite interesting presentation by the engineer Alfredo Ruiz, founder of Château Fonchereau, Mexican company established in Bordeaux, France, a city well known for being the capital of the wine, which he pointed out that one of the best producers of wine in the region. It was stressed that one of the big differences is that Cluster of the wine in the Napa Valley is that there are many events to make networking and the most important thing is that these days that are held every two months between the managers of companies producing wine. The engineer Ruiz commented that "In the United States the barrier between the leisure and the business is very diffuse, sometimes bbqs and close business, and the influx of people in these activities, it is very large".

6.6.5 Shortage of venture capital and inadequacy of the conditions

The only program that appears in the cluster of Tequila on Global investment is the SME project by the Federal Government, is a seminar that was being done, and was not particularly for the cluster of tequila on how to grow entrepreneurially through private financing and investments, and nuanced that lasted five or six months. Therefore, if the SME project is the only program of private investment and it is a seminar, the actions of the cluster of Tequila are practically non-existent in this field. Therefore the only program on private investment is based on training and is not linked to the provision of risk capital that is what adds a dynamic to the system. In contrast with the Cluster of the wine in the Napa Valley, another of the main factors explaining their economic impact is its ecosystem, in which it is a system of high complexity, consisting of a set, each time more comprehensive, of elements and interrelated functions that have to do with the funding and support to new business projects. In Cluster of the wine in the Napa Valley a project whose ultimate goal was the same as that in the eyeOS, a program for access to documents, files and applications from anywhere and with any device with cloud computing, he was endowed with a budget of \$10 million. Factors such as support, the environment that helps to run all the processes described above, are to be found in a number of networks and institutions in which there is a sectoral dynamism and a multicultural environment.

6.6.6 Attraction of talent

The tequila industry does not have any program to attract talent, is more even there is a database specialized profiles to search for the industry. Employees of the tequila industry are mostly people who have acquired their knowledge based on experience.

Attracting talent is not an easy task, it is a profound work and inventive and that thanks to the emergence of culture 2.0 , you can help in the achievement of this task. The culture 2.0 is characterized by the participation, collaboration, exchange of information and knowledge generation collectively, principles that companies can leverage to get the best of its internal talent, but also you can obtain this talent externally.

6.6.7 Excessive administrative bureaucracy

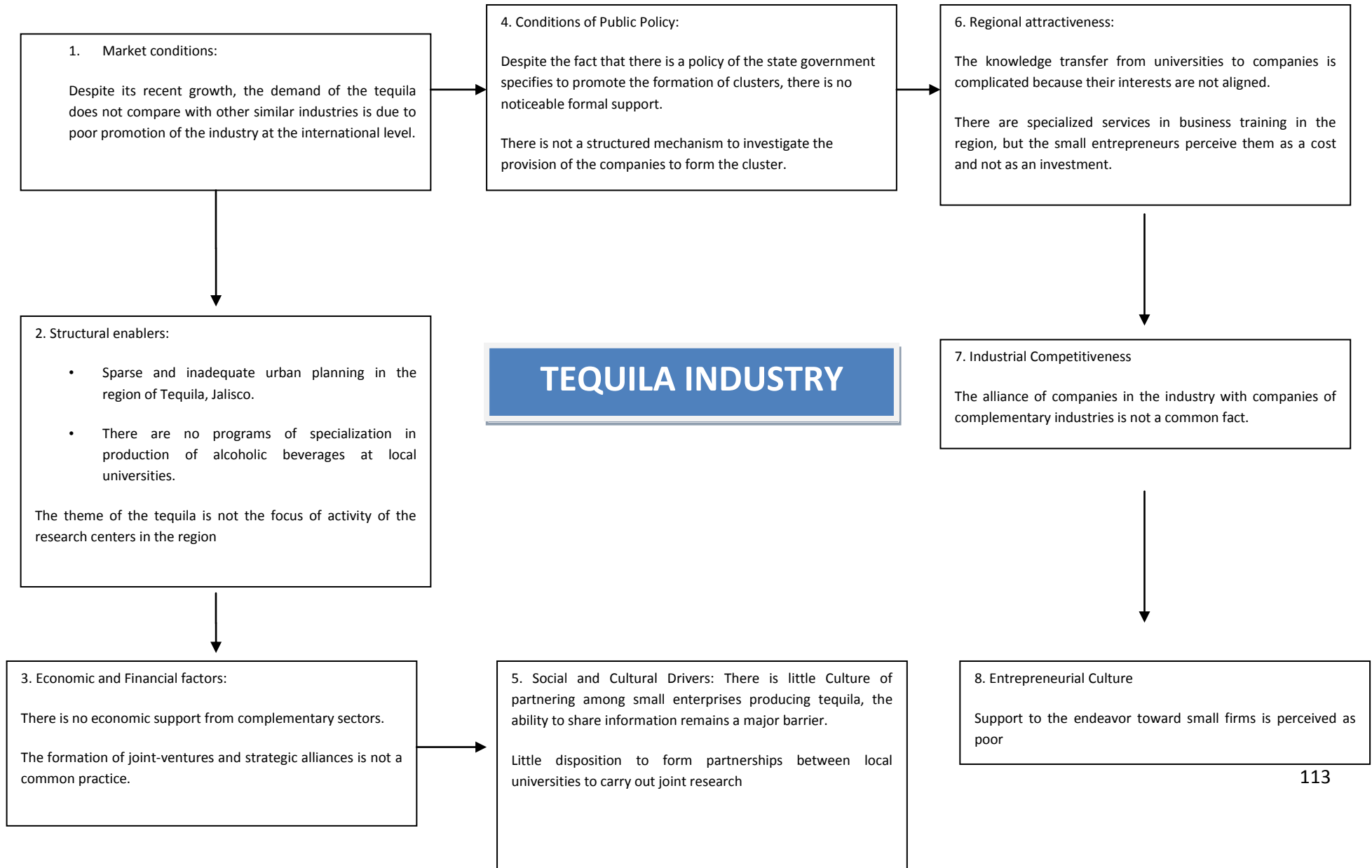
Jane Fountain, a professor at the Kennedy School of Government at Harvard University and director of the National Center for Digital Government at the University of Massachusetts-Amherst , during an event organized by the Center PwC & IE, assured them that: "Mexico is a country with a innovative bureaucracy very traditional. It is not a question of sumar technology but to modernize the proceedings in the administrations' (the world, 2010). Another example that shows that there is a problem, it is during the election campaign to elect the President of the Republic in 2012, the current president in its booklet of electoral proposals the third proposal was as follows: The entrepreneurs will receive the encouragement and the momentum of public administration, and no obstacles. We will eliminate bureaucracy and simplify the procedures. Create a company will be more easy. It is clear that when the booklet of electoral proposals, is performed through listening to the needs of the citizens or their enhancement requests and therefore the problem was that Jane Fountain, is a reality in Mexico. On the other hand, Morse (2011), pointed out that in California, for example, they needed only 20 minutes and \$20 to create a company, which warns that society and Government will have to put the easy things to the entrepreneurs and noted that the mission of the Government must be to create a favorable ecosystem to the entrepreneurs and this means investing in education and in science and technology, and to put things easy to companies that are born and eliminate as many administrative procedures is one of them.

6.6.8 Institutional Gear

One of the factors that is encouraging the dynamism in the sectors on which sits the economy of the Napa Valley is the institutional gear offered by various public agencies

involved. Therefore, it is important to detect those points that harm that gear processes in different animators as can be the overlap of functions and initiatives. The only draft business incubator in the region corresponds to the of the Tecnológico de Monterrey. In the same way, the different public bodies should become a good customer of the start-up because what they need new businesses in the initial phase is clientele apart from funding to enable the entrepreneurs pull forward the business

Figure 6.1 - Areas of Opportunity



In the opinion of the experts, Tequila, Jalisco is still not at the level of the best industries in the world in relation to the alcoholic beverage industry, however, it is possible to develop concrete actions to improve the conditions since the region has very positive aspects, such as its industrial capacity in general and the existence of clusters that have already been working in the region, such as the cluster of electronic or the cluster of Information Technologies, and of which can be remove experiences to be applied in the tequila industry. In the research, was observed the following global trend, the State Government has recognized the formation of clusters as a highly effective strategy by its multiplier effect for the economic development, so that from a few years ago has been started to support this type of initiatives in industries due to represent great opportunities to generate patterns of specialization at the regional level. The government has already begun to be aligned in the right direction, only lack the support is more formal and effective with regard to promote partnerships between companies in key industries. Also, the tequila industry constitutes a concern inherent to the government because it is so closely associated with the image of Mexico and is a typical element and characteristic of the Mexican culture. However, as noted in the research, the urgency to generate greater competition among small producers is constrained by the big companies that control the sector. In this aspect, the Tequila Regulatory Council is perhaps one of the most relevant actors, since it regulates the competition between companies and is the channel through which the tequila is exported to the world. As a result, government support is essential to promote the competitiveness of small businesses, need to which the government has responded with some subsidies, that despite the efforts do not yet have a big impact. Federal support in Jalisco has been of great importance, to take the first steps, however, is the need for the State to create their own policies and incentives for the industry. The tequila industry is a promising industry due to its high potential to national and international level. Another important aspect is the high degree of complementarity of this industry to the required products of various companies and industries to produce a bottle of tequila. The industrial environment is promising, there are key players in Jalisco that can function as "anchors" to attract other businesses and stimulate the creation of new ones. Everything depends on establishing an enabling environment for confidence through mechanisms of adaptation to that there is true collaboration.

With regard to the academy in the region, there are no programs of specialization (careers, master) focused on the production of alcoholic beverages as there are in other country, for example California, so there is not yet a critical mass of specialists in the production of alcoholic beverages. However, there are professionals that self-employed have sought specialize in the topic and in the investigation it was determined that there are specialized services to level consulting in the region. The link between the academy and the industry is a major factor and will be greater in the extent to which resources flow not only by the government, but private, which at the moment are very limited in comparison with other countries in which it was intended a good percentage of resources to develop organized and competitive industries. As far as possible, the academy must guide their research toward the needs of the industry by ensuring that their project to have applicability in real life, for which the disconnection notice the experts that exists between academy and industry is increasingly less. In the figure below, are some recommendations to meet by the triple helix (Business Sector, government and academia), on the basis of which it is possible to define specific strategies of clusterization to develop in a holistic manner to the cluster of tequila industry in a successful example of the region of Jalisco that can be used to stimulate other successful clusters in the region or other clusters in other regions of the world.

Table 6.1 Comparison between both industries

FACTOR	STATUS IN CALIFORNIA	STATUS IN TEQUILA JALISCO
Conditions of Public Policy	The Cluster of the wine in the Napa Valley exists since 1990.	In 2010 the Ministry of Economic Development in the State of Jalisco began a campaign to create clusters
	The person who does not comply with the ordinance of production of wines in California receives a civil penalty of cumulative \$ 500 per day, according to the California Wine Institute.	Does not exist an entrenched culture of respect for the law. There are no fine for the industry, except for civil order
	In July 2000, published a report funded by the Ministry of Economy	Was not carried out any formal

	and the Division of Economic Policy of the first feasibility study of clusters in California.	study on the part of the public initiative for the layout of the companies in the industry to form the cluster, but began to observe the interest among its partners doing internal polls
Economic and Financial Factors	California has a Green Investment fund which is managed by the Office of industrial promotion.	There is no economic support from complementary sectors. Just certain projects of the Federal Government but oriented to all type of SMEs
Industrial Competitiveness	The cities of the Wine Cluster in California, specially Napa, Sonoma and San Francisco, have already begun to see the benefits of the synergy between suppliers and strategic partners of the wine industry to analyze the life cycle of products	<p>The chambers are engines of industrial development, have been characterized by being very intensive in their participation</p> <p>The cluster's ability to be inserted in global chains is very large but lack of teamwork which allow first strengthen the cluster internally in order to be competitive at an international level</p> <p>Jalisco is characterized by the presence of large enterprises and internationally competitive</p>
Entrepreneurial Culture	In California in order to boost the grouping of small producers of wines, have been conducting workshops, seminars and working sessions of group that are part of a program of assistance to the technological development	There is an entrepreneurial culture, however, support for the undertaking it is still in its infancy.
	At the global level are conducted	There is not lot of coverage on the

Social and Cultural Drivers	<p>seminars, conferences, congresses and all kind of events to disseminate new techniques on the actual production of the wine.</p> <p>Cluster Initiative in the Net, many firms in the industry for the production of wines, joined under a joint vision, and developed a marketing plan with the logo and brand name of the cluster and a website that identifies all with the initiative</p>	<p>subject. There is a great deal of ignorance and a lack of unification of important concepts.</p> <p>As regards the culture of associativity, the ability to share information remains an important barrier.</p>
Market Conditions	<p>The Napa Valley produces 4% of wine grapes in California however the region is responsible for the 30% of the wine industry in the state</p>	<p>The Municipality of Tequila is the main producer of tequila in all the denomination or origin.</p>
Structural Enablers	<p>In the Napa Valley, California various educational institutions offer the Master's Degree in Wine Marketing and Management, in particular Bordeaux International Wine Institute, specially "The Wine Institute"</p> <p>In California has developed the Grape and Wine Cluster, in which participating research centers highly competitive focus on topics that have to do with the production of wine.</p> <p>ClusterNet - Wine is an initiative in California; USA, implemented information systems that allow</p>	<p>Programs of Bachelor and Masters degree in Chemistry and Engineering in food have in their academic plans materials related to the production of alcoholic beverages, however there is not a program of specialization in the specific topic at local universities.</p> <p>In the cluster has not been spoken of a platform or system to support the decisions for the exclusive use of the members of the cluster, but it is seen as a need.</p> <p>The electronic interaction between the actors in the Tequila industry is inefficient; there is no platform for electronic information.</p>

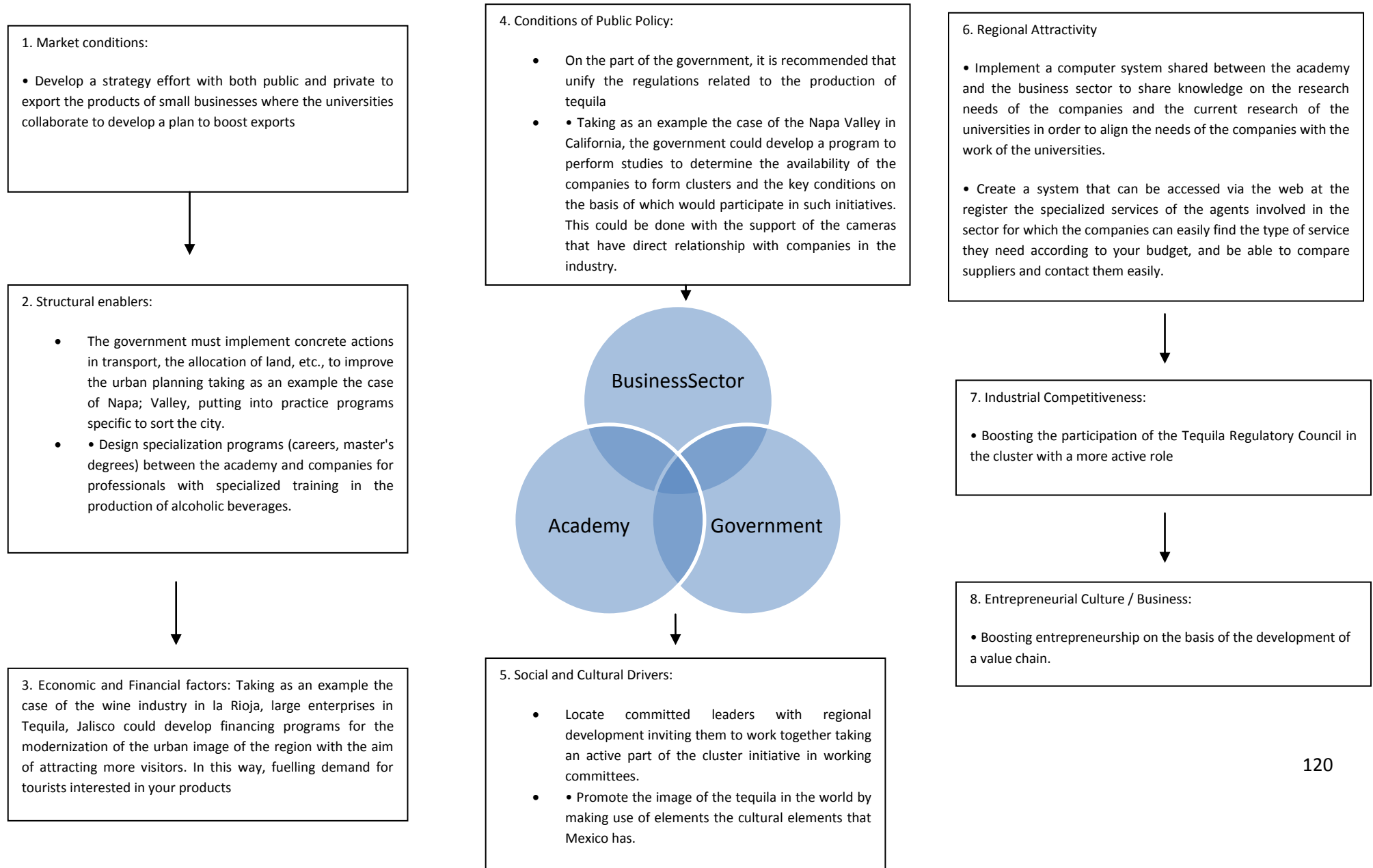
	constant communication between small businesses using internet technologies to collectively address the common problems, because it was determined that the accessibility is an important factor.	
Regional Attractiveness	The Californian Association of Wine Cities and the Ministry of Tourism created the "Manual of Wine Routes of California" in various languages. It disseminates internationally at international trade fairs and through the United States embassies in the world.	<p>Jalisco is a State recognized by be industrially and tourist attraction.</p> <p>Currently, there is a cluster of knowledge as such but could settle one to future in a tacit manner as a result of the work of industry clusters in competitive</p> <p>The high insecurity is a limiting factor to attract tourists from various parts of Mexico and the world.</p>

6.7 RECOMMENDATIONS TO MEET BY THE TRIPLE HELIX

The establishment of science and technology in the productive sector and therefore society has been an arduous task that has gone through different theoretical stages. Since the linear model to the Triple Helix, through the model of New Production of Knowledge, theorists have seen the birth of the spin-off. It is difficult to fit the spin-off on a theoretical model, as the practice varies between countries, institutions, universities. In this sense, there are voices from Latin America who wonder if the triple helix is viable in economic systems in developing countries. The Triple Helix model draws on the spiral of innovation (versus traditional linear model) that establishes reciprocal relations between universities, business and government. These three spheres, previously worked independently, tend to work together. The actors involved in it are academic researchers, entrepreneurs converted their own technologies, entrepreneurs working in a university laboratory or technology transfer office, government

researchers, academic researchers and industrial researchers, who run regional agencies responsible for technology transfer.

Figure 6.2 - Recommendations to meet by the triple helix



6.8 FUTURE CHALLENGES OF THE CLUSTER

There are new technology clusters, which have been developed so fast and with a tremendous potential in complex environments, in the attraction of big foreign investments has been in part the key to success without forgetting an emergent factor, as has been the acceleration in the development of the cluster by interactions with other clusters. In the high-tech clusters, the benefits present in the set of companies, are not in those companies with vision and industrial manufacturing, but in those companies that have a vision of development and innovation. The high-tech clusters are characterized by mobile environments, especially when that environment is created from various factors such as money, people, information, including the know-how, and the intellectual property, factors that facilitate rapid innovation.

Entrepreneurship is the basis of the innovative clusters, where such innovation grows and accelerates through the creation of new companies, and where there is always some urgency of results due to the competition and limited resources. This culture of innovation and new models of development of clusters, based on the mobility, increases the practicality business environments where the mobile crossing regional barriers to search for international collaborations before falling into the cycle of decadence or, once you see them. In the innovative clusters, the new start-up companies are going to birth in a global environment, taking advantage of international markets and consequently of these resources in the initial phase in its development. As a result of this, new and complementary clusters have been born in different regions around the world, and it has created a network of formal and informal collaborations between entrepreneurial companies. This environment of multidimensional interrelations may include: weak linkages, linkages and durable linkages that point as a whole is a network of clusters of innovation (NCOI) and if in some cases there is a great interplay of networks are formed the Super-innovative clusters (Super-IOC) (Engel, and Palace, 2009). The NCOI and Super-IOC, environments can be born in geographically close but in different regions, since over time the distances between regions will blur. This system consists of different geographically dispersed clusters but connected between them. The theory of Superclusters originates in a vision of the universe, where Superclusters are large galactic clusters which in turn result in smaller groups. The existence of Superclusters can be customised because the galaxies in our Universe are not evenly distributed but that most are distributed in groups, some of them containing up to 50 galaxies and several thousands of links. These groups of links and galaxies formed even

more structures large calls Superclusters. Therefore if we put this system into practice, we will have to based on an area of a cluster of tequila, from that cluster could be establishing networks (NCOI) with clusters of similar industries in other parts of the world. And if these clusters in turn, create networks with other clusters of other parts of the world, which would form a series of linkages between that would lead to the Super-innovative clusters. This type of interactions can determine what will be the actions and future challenges of the different clusters, already to survive in a world today's competitive and changing it is going to have to resort to the essence of the clusters, the collaboration, but this time between clusters. On a personal note I would like to comment on that is a challenge for the future interesting in clusters, but once they have strengthened the cluster itself, since that system involves a multiplier effect and if a cluster is not solid, it can leave their shortcomings visible and greatly weakened.

CONCLUSIONS

- The contribution of the clusters to improving the competitiveness of enterprises that makes it up and, in turn, to the improvement of the competitiveness of the region in which they are situated, drives to the governments of various countries to the creation of clusters.
- The valuation of the clusters is positive for the improvement of the business competitiveness through co-operation, studied aspect in the work. In the studied cluster are shared the objectives and the strategic priority lines that are derived from the guidelines, but has been seen that sometimes the strategic vision is not in concordance with the real needs of the companies.
- Has been detected a lack concern between the tequila cluster and universities (share structural axis of the cluster) coming to consider the first to the universities as if they were out of the market.
- Cooperation is the basis for the activity of the clusters and recognize difficulties, so it is expected a growing cooperation for a greater dynamism of the cluster.
- There are some programs that respond to the strategic vision of the tequila cluster (internationalization, attracting talent, etc) and that its impact between the companies has been limited with what also subtract the dynamism of the cluster.

TEQUILA CLUSTER ANALYSIS

The methodology of the clusters, driven by Michael Porter, represents an interesting way to deal with the study of economic sectors that are located in certain regions. The success of the clusters depends on its ability to transform comparative advantages derived from its geographic location and the economic and technological features that exist in that location, in dynamic competitive advantages, able to keep up over time. There is a need to recognize the shortcomings that the methodology of the clusters on the analysis of the economic sectors and their locations, such as giving too much importance to the market in the development of the cluster and leave in a secondary term the work of the State as an entity that promotes and coordinator of the efforts or consider only superficially aspects as important as the trust relationships that are generated around the chain, the emerging from the field of impersonal market. However, this methodology provides, together with the diamond of the competitiveness defined by the same Porter, a tool to identify the structuring of a particular group of

related industries that they revolve around a inclusive industry, as well as the solvency or not of the links that are forging vertically and horizontally.

All of this serves as a basis for promote public policies that will consolidate these industries for the benefit of the geographic area in which are located. The creation of the Tequila Regulatory Council, the acquisition of the denomination of origin, the implementation of the official Mexican standards as well as the efforts made by the companies themselves to offer a drink more diversified with best standards of quality, in response to the various strata of the market, strategies that have been allowed to have a continued growth in demand even in 2008, the year of crisis. This made the production of tequila has found in the final phase of the twentieth century, an attractive business for different investors. However, in parallel with this apparent period of bonanza, situations that existed from 1999 threatened to end the boom without took advantage of all the potential benefits of the dynamism of the demand. These points of concern have to do with the lack of planning in the production of agave and the lack of coordination and support between farmers and industrial producers, causing instability in the price of the raw material and a succession of periods of overproduction followed by others of scarcity. This produces instability in the costs of production, in addition to that is a risk factor for consolidating the tequila in international demand. Another hot spot is the still high consumer fraud when, in the absence of greater control, adulterated offer tequilas highly harmful to the health bars in domestic and foreign. This discredits tequila and limited their opportunities for expansion

Other external factors threaten to tear down everything built in recent years around the cluster. The economic recession that is live since 2009, as well as the recent tax reform approved by the Mexican Congress have slowed the upward trend in the industry. It envisions a future demanding if the domestic and international economic situation does not improve, and if there is not an understanding between the actors in the cluster and the government authorities to search for a solution to the problem of the tax to the tequila.

Finally it should be noted that the cluster of the tequila, even with the great advances made in the last ten years, still have to make major efforts of organization among its various actors to prevent internal and external factors such as those that have been given in recent years affect their viability. Is necessary to look for decrease the price and

income elasticities of the tequila through strategies that increase the quality and differentiation of the drink, as well as export of tequila packaging of higher value-added above that is sold in bulk, often of dubious quality. In addition, it is imperative decrease the cyclical ups and downs in the supply of the raw material for a planned production of agave in the long term with a stable price. If is possible to manage to overcome these challenges, the consolidate progress and corrected the deficiencies, is it possible to achieve a cluster to maintain competitive advantages robust and dynamic for the benefit of all its members and the Mexican industry.

- **FUTURE WORK**

As only one part of the methods and tools for the industrial cluster analysis was used to develop the methodology, it would be interesting to add more methods or tools to perform the analysis. All this represents the goal of the creation of an extension of the methodology with a new set of methods and tools. Also it is important to highlight the possibility of the newest trends of industrial cluster development using new tools and methods. At the end, also valid, the creation of new tools and methods with the experience of implementing the methodology and adding upgrades to achieve better functionality. The methodology has to be fulfilled by two requirements: know the target region and know the target industry. An area of opportunity is the search of the optimal region among a set of regions that has a target industry; or the search of the optimal industry in a set of industries on the target region. As Brennan and Hill (2000) search the possible clustering industry in the region of Napa or the case of Mexico in the search of the optimal area for the cluster development for the tequila industry project (USAID, 2005). Although it is nearly impossible to search the target region and the target industry simultaneously, it is necessary to have a scope of what to do or where to do it. With the search of the target region or the search of the target industry the set of tools and methods that could be applied is wider. Open a bigger problem to analyze, the quantity of methodologies emergent could be increasing exponentially. As one of the objectives of this work (in coordination with other projects) and methodology is to set the basis for establish the standards for the industrial cluster development. So for further analysis (industrial clusters), one must take into consideration the work previously done and those methodologies developed to create and use a standard for the development of this methodology.

BIBLIOGRAPHY

ALMEIDA, P. y KOGUT, B. (1997): The exploration of technological diversity and geographic localization in Innovation: start-up firms in the semiconductor industry. *Small Business Economics*, nº 9, pp. 21-31.

ANDERSON, P. y TUSHMAN, M. (1990): Technological discontinuities and dominant designs: a cyclical model of technological change. *Administrative Science Quarterly*, nº 35, pp. 604-633.

ARTHUR, B. (1994): Increasing returns and path dependence in the economy. University of Michigan Press, Michigan, USA.

ASERCA (Agencia de servicios a la comercialización y desarrollo de mercados agropecuarios) Gobierno Federal 2000

BEAUDRY, C., & BRESCHI, S. (2003). Are Firms in Clusters Really more Innovative? *Economics of Innovation and New Technology* , 325-342. Bortagaray & Tiffin, 2000

BENGT-ÅKE LUNDVALL, Industrial Clusters and Competence Building in the era of the Globalizing Learning Economy, June 19th 2003

BOSCHMA, R. y FORNAHL, D. (2011): Cluster evolution and a roadmap for future research. *Regional Studies*, nº 45, pp. 1295-1298

BOSCHMA, R., y WENTING, R. (2007): The spatial evolution of the British automobile industry: does location matter? *Industrial and Corporate Change*, nº 16, pp. 213-238.

BRAUNER HELM & HELGESSON (2006): developing the institutional network approach to markets and business marketing practice hans jansson professor of international marketing baltic business school (bbs), university of kalmar, se-391 82 kalmar, Sweden.

BRESNAHAN, T.; GAMBARDELA, A. y SAXENIAN A.L. (2001): 'Old Economy' inputs for 'New Economy' outcomes: cluster formation in the new Silicon Valleys. *Industrial and Corporate Change*, nº 10, pp. 835-860.

BRETONES, C. SCHEEL. Transforming an Industrial District into a high-Tech cluster: Assessing the Cosmetic Valley's readiness and benefits, France. Oct. 2011. *International Business Research*. Vol. 4, No. 4; pp. 3-14. ISSN: 1913-9004. Canadá.

BUENSTROF, G. y KLEPPER, S. (2009): Heritage and agglomeration: the Akron tyre cluster revisited. *The Economic Journal*, n° 119, pp. 705-733.

CASALET, M. (2008). Desarrollo de clusters de software en México . Mexico: Oficina Internacional del Trabajo & PROG/COLEXT/3/2007.Cohen and Levin 1990

CCS; SLOVENSKI GRADBENI GROZD IN SLOVENE. (3 de 12 de 2005). Construction Cluster of Slovenia - presentation. Recuperado el 23 de Agosto de 2010, de SGGCCS: <http://www.sgg.si/index.php?Obmocje=Dokumentacija>

COWELL, F A AND GARDINER, K (1999), Welfare Weights, (STICERD, London School of Economics, Economics Research Paper 20, Aug 1999

CRAFTS N (2002), Britain's Relative Economic Performance 1870 -1999, Institute of Economic Affairs Research Monograph No. 55, IEA London

CRESPO, J. (2011): How emergence conditions of technological clusters affect their viability? Theoretical perspectives on cluster life cycles. *European Planning Studies*, n° 19, pp. 2025-2046.

CRESPO, J.; SUIRE, R. y VICENTE, J., (2014): Lock-in or lockout? How structural properties of knowledge networks affect regional resilience. *Journal of Economic Geography*, n° 14, pp. 199-219.

DOUGLAS WOODWARD, Porter's Cluster Strategy Versus Industrial Targeting, University of South Carolina, July 1, 2005

DYER, J.H. y SING H. (1998): «The relational view: cooperative strategy and sources of interorganizational competitive advantage», *Academy of Management Review*, vol. 23, n° 4, pp. 660:679

EISINGERICH, A.; BELL, SJ. y TRACEY, P. (2010): How can clusters sustain performance? The role of network strength, network openness, and environmental uncertainty. *Research Policy*, n° 39, pp. 239-253

FELDMAN M., Location and innovation: the new economic geography of innovation, *Handbook of Economy Geography*, 2000

FELDMAN, M. (2003). The Locational Dynamics of the US Biotech Industry: Knowledge Externalities and the Anchor Hypothesis. *Industry & Innovation* , 311 - 329

FELDMAN, M. y FRANCIS, J. (2003): Fortune favours the prepared region: the case of entrepreneurship and the capitol region biotechnology cluster. *European Planning Studies*, n° 11, pp. 765-788.

FESER, Benchmark value chain industry clusters for applied regional research, October 2005

FESER, E. (2002). The Relevance of Clusters for Innovation Policy in Latin America and the Caribbean. Chapel Hill, USA: Banco Mundial.

HERNÁNDEZ, ROBERTO S., FERNÁNDEZ, C., Y BAPTISTA, L. (2003). "Metodología de la Investigación", México DF, Ed. McGraw-Hill, Tercera Edición.

HERVÁS-OLIVER, J.L. (2014): Cluster evolution: a capabilities-based framework, Paper presented at Utrecht Geography of Innovation Conference. Utrecht, January 24th, 2014, The Netherlands.

HERVÁS-OLIVER, J.L. y ALBORS-GARRIGOS, J. (2009): The role of the firm's internal and relational capabilities in clusters: when distance and embeddedness are not enough to explain innovation, *Journal of Economic Geography*, nº 9, 2 pp. 63-283.

HERVÁS-OLIVER, J.L. y ALBORS-GARRIGOS, J. (2014): Are technology gatekeepers renewing clusters ? Understanding gatekeepers and their dynamics across cluster life cycles, *Entrepreneurship and Regional Development*, forthcoming

<http://cuentame.inegi.org.mx/economia/secundario/construccion/default.aspx?tema=E>

http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US36F&re=1&ee=1

INEGI. (2009). Economía/Actividades económicas/Construcción . Recuperado el 2 de Noviembre de 2010, de INEGI:

JACOBS, D., & DE MAN, A. P. (1996). Clusters, Industrial Policy and Firm Strategy: A Menu Approach. *Technology Analysis and Strategic Management*, 8(4), 425-437.

James, D. (2002). How to Kick Global Goals. *Business Review Weekly*, Thursday 28 March 2002.

JENS KLESSMANN, Strategic Economic Development: Possible Links between Cluster Policy and Local Economy. A Study in the Cities of Dortmund and Manchester, 2000

JOHNSON (ED.), Wine Tourism Around the World Development, Management and Markets (pp. 226-252). Boston: Butterworth-Heinemann

KLEPPER, S. (1996): Entry, exit, growth and innovation over the product life cycle, *American Economic Review*, nº 86, pp. 562-583.

KLEPPER, S. (1997): Industry life cycles. *Industrial and Corporate Change*, nº 6, pp. 145-182.

KLEPPER, S. (2002); The capabilities of new firms and the evolution of the US automobile industry. *Industrial and Corporate Change*, n° 11, pp. 645- 666.

KLEPPER, S. (2007): Disagreements, spinoffs, and the evolution of Detroit as the capital of the U.S. automobile industry. *Management Science*, n° 53, pp. 616-631.

LEIPER, N. (1995). *Tourism Management*. Collingwood, Melbourne: RMIT Press, TAFE Publications.

MACIAS (1999): El tequila en tiempos de la mundialización. *Revista del Gobierno Mexicano para el fomento industrial*.

MACIONIS, N., & CAMBOURNE, B. (2000). Towards a National wine tourism Plan : wine tourism organisations and development in Australia.

MADDISON, A. (2001), *The World Economy: a Millennial Perspective*, Paris, OECD.

MARJOLEIN C.J. CANIELS AND HENNY A. ROMIJN, *Agglomeration Advantages and Capability Building in Industrial Clusters: The Missing Link*, February 2003

MARTIN R. y SUNLEY P. (2006): Path Dependence And Regional Economic Evolution, *Journal of Economic Geography*, n° 6, pp. 395-437.

MARTIN, R. y SUNELY, P. (2003): Deconstructing clusters: chaotic concept or policy panacea? *Journal of Economic Geography*, n° 3, pp. 5-35.

MARTIN, R. y SUNLEY, P. (2011): Conceptualizing cluster evolution: beyond the life cycle model? *Regional Studies*, vol. 45 n° 10, pp. 1299-131.

MENZEL, M.P. y FORNAHL, D. (2010): Cluster life cycles: dimensions and rationales of cluster development. *Industrial and Corporate Change*, n° 19, pp. 205-238.

Michael E. Porter, *The Competitive Advantage of Regions*, May 13th 2003

MICHAEL STORPER AND RICHARD WALKER: *The Capitalist Imperative* (1989)

MINISTRY OF FINANCE (2012) The production of the Tequila as benefic for the industrialization of the region. *Revista del Gobierno para el Fomento Industrial*.

MOORE, G. (1991): *Crossing the chasm*. Harper Business Essentials, New York, NY.

North Carolina State University. (3 de Agosto de 2010). Federal Incentives/Policies for Renewables & Efficiency. Recuperado el 7 de Noviembre de 2010, de DSIRE - Database of State Incentives for Renewables & Efficiency:

ORGANIZATION FOR ECONOMIC CO-OPERATION “Local partnership, and development clusters and SME Globalization”. Bologna, Italy, June 2000

ORSENIGO, L. (2001): The (failed) development of a biotechnology cluster: the case of Lombardy, *Small Business Economics*, n° 17, pp. 77-92.

ORSENIGO, L.; PAMMOLLI, F. y RICCABONI, M. (1998): The evolution of knowledge and the dynamics of industry network. *Journal of Management and Governance*, nº 1, pp. 147-175

PORTER, (1998(; Swann, Prevezer and Stout, 1998; Cooke, 2000; Feser y Bergman, 2000

PORTER, M. (1990): The competitive advantage of nations. Macmillan, London, UK.

PORTER, M. (1991): Towards a dynamic theory of strategy. *Strategic Management Journal*, nº 12, pp. 95-117.

PORTER, M. (1998). Clusters and the new Economics of Competition. *Harvard Business Review* , 77- 90.

PORTER, M. E., & SÖLVELL, Ö. (1999). The role of geography in the process of innovation and the sustainable competitive advantage of firms. The dynamic firm: the role of technology, strategy, organization and regions , Oxford University Press

ROSENFELD, S. A. (1997). Bringing Business Clusters into the Mainstream of Economic Development. *European Planning Studies*, 5(1), 3-23.

ROSENFELD, S. A. (2001). Backing into Clusters: Retrofitting Public Policies. Paper presented at the Integrating Pressures: Lessons from Around the World, John F. Kennedy School Symposium, Harvard University.

ROSENFELD, S. A. (2001a, March 29-30, 2001 Downloaded 12th March, 2002). Backing into Clusters: Retrofitting Public Policies. Paper presented at the Integrating Pressures: Lessons from Around the World, John F. Kennedy School Symposium, Harvard University.

ROSENFELD, S. A. (2001b). Networks and Clusters: The Yin and Yan of Rural Development, Exploring Policy Options for a New Rural America Federal Reserve Bank of Kansas City (pp. 1-24): Regional Technology Strategies, Inc

SAKURAMOTO & SERIO, 2000: Automotive Cluster in Brazil Second World Conference on POM and 15th Annual POM Conference, Cancun, Mexico, April 30 – may

SAXENIAN, A.L (1994): Regional advantage. Harvard University Press, Cambridge, MA.

SCHEEL, C. (2008). Dinámica de ecosistemas industriales. Mexico: Trillas S.A.

Scheel, C. (2003). Key Success Factors and Strategies for industrial clusterization in the Latin American region. Monterrey, Mexico: UNIDO WORKSHOP.

SCHEEL, C., & Gomez, G. (2007). Why the Latin American region has not succeeded in building world-class industrial clusters. Monterrey, Mexico: EGADE, Tecnológico de Monterrey. Scheel, C., & Pineda, L. (2008). Building Industrial Clusters in Latin America, Paddling Upstream. Cape Town: 11th. TCI Global Conference.

SCHEEL, C., & Ross, C. (2007). Strategies for building competitive clusters in Latin America. Monterrey, Mexico: EGADE. 159

SCHEEL, C., GALEANO, N., & CHARRIS, T. (2010). Investigación sobre la Cadena de Valor de la Vivienda Sustentable y las Alternativas de Participación de Cemex. Monterrey, N.L.: Cátedra de Investigación Cemex-ITESM. Scorsone, 2002

SCHEEL, D. BRETONES. The impact of technology based clusters on holistic regional development: The case of the Grand Poitiers Futuroscope Technopole. Dec. 2011. Revista Universidad & Empresa, Universidad del Rosario, Bogotá; Vol. 20. ISSN: 0124-4639. Bogotá, Colombia.

SCHEEL, L. PINEDA. Why clusters have not succeeded in Latin America? How to reverse this trend. Febrero 2009. Clústeres Urbanos 2009; Vol. III; pp.64-81. ISBN: 978-84-9850-214-5. Barcelona, España.

SCHEEL, M. VÁZQUEZ. The role of innovation and technology on industrial ecology systems for the sustainable development of emergent countries. Dec. 2011. Journal of Sustainable Development. Vol. 4 No. 6; pp 197-210. ISSN: 1913-9063. Canadá.

SCHEEL. Modelo para el ensamble de ecosistemas de innovación para regiones emergentes. Noviembre 2010. El Futuro de la Educación en Ingeniería. Red Cartagena de Ingeniería; pp. 13-28. ISBN: 978-2-9534170-1-5. Francia

SECRETARÍA DE DESARROLLO ECONÓMICO, (2004), “Jalisco: La política de desarrollo económico y sus avances 1998-2004”, Aguascalientes, Talleres Gráficos del Gobierno del Estado.

SÖLVELL ÖRJAN,. (2003) “The Clúster Initiative Greenbook” Bromma Trick AB, Stockholm

STEVENS, JEFF, (2005), “Competency Clúster Validation Model an Empirical Study”, the Journal of American Academy of Business, Cambridge, N° 2, (Base de datos “EBSCOHOST” Biblioteca Digital de la UAA)

TER WAL, A. y BOSCHMA, R. (2011): Co-evolution of firms, industries and networks in space. Regional Studies, n° 45, pp. 919-933.

THE GREEN BOOK Appraisal and Evaluation in Central Government. Treasury Guidance LONDON:TSO

VERBEEK, H. (1999). Innovative Clusters: Identification of value-adding production chains and their networks of innovation, an international study. Unpublished doctoral, Erasmus University, Rotterdam.

VILLARREAL, RENÉ Y VILLARREAL, ROCÍO, de. (2002), “México Competitivo 2020: Un modelo de competitividad sistémica para el desarrollo”, México, DF., Océano de México.

WANG, L.; MADHOK, A. y LI, S. (2013): Agglomeration and clustering over the industry life cycle: toward a dynamic model of geographic concentration. Strategic Management Journal, forthcomingWelch 2014

WORLD BANK (2002). World Development Report: Building Institutions for Markets, Oxford: Oxford University Press.

WORLD BANK GROUP. (2006). The Impact of Intel in Costa Rica. Washington, D.C.: The World Bank Group / mIgA

YAMAWAKI HIDEKI. (2002), “The Evolution and Structure of Industrial Clusters in Japan”, Small Business Economics 18: 121–140. Kluwer Academic publishers, Printed in the Netherlands, (Base de datos “EBSCOHOST” Biblioteca Digital de la UAA).

WEBSITES CONSULTED

Banco Nacional de Comercio exterior <http://www.bancomext.com/>

Center for research and digital information <http://www.cerdi.edu.au/>

Chamber of the Tequila Industry <http://www.tequileros.org/>

High Impact Business Incubator <http://www.ciebt.ipn.mx/>

Jalisco State Government <http://www.jalisco.gob.mx/>

Ministry of Economy <http://www.economia.gob.mx/>

Ministry of Finance <http://www.shcp.gob.mx/>

Monterrey Tech <http://www.itesm.mx/>

Municipal Government of Tequila <http://www.tequilajalisco.gob.mx/>

Napa Valley Vintners <http://www.napavintners.com/>

Napa Work Force <http://www.napaworkforce.org/>

National University Autonomous of Mexico <http://www.unam.mx/>

SMEs project by the Ministry of Economy <http://www.proyecto-pyme.com/>

Tequila Regulatory Council <https://www.crt.org.mx/>

United Nations Development Organizations <http://www.unido.org/>

ANNEX I

QUESTIONNAIRE FORMAT

Clarification Note: This questionnaire is part of the investigation that was performed in the Municipality of Tequila, Jalisco, Mexico. The author interviewed 50 persons, 35 were experts from the private initiative (producers of tequila in the region and members of the Tequila Regulatory Council), 10 experts from the Government (the government experts correspond to the Economic Development Department of the State of Jalisco and the Direction of Industrial Competitiveness of the Municipality of Tequila, Jalisco, Mexico) and 5 academics of the Tecnológico de Monterrey Campus Guadalajara; Business School. The questionnaire was conducted in Spanish language, this annex is the translated version into English language.

University of Economics in Bratislava

Department of Public Administration and Regional Development

"CLUSTERS AS STRATEGY OF COMPETITIVE ADVANTAGE; THE CASE OF THE TEQUILA INDUSTRY IN MEXICO"

Personal Information

Name:

E-mail:

Institution name:

Expert Type:



Experts from the private initiative



Experts from the government



Academic experts

Instructions: Below are presented the 8 sections, to answer the questions it is necessary to order the intervals of 1 to 5, with 5 being the most important and 1 the least important also exist the possibility of close questions, the answer is YES or Not

SECTION 1: Market Conditions

INDICATOR	METRICS	QUESTION
High demand for the products generated by the industry	INDUSTRY: Increased production of Tequila.	According to your experience, have been increases in the amount of tequila production? <div><input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5</div>
Access to global markets	CLUSTERING CAPABILITIES: Regional capacity to export tequila.	How do you rate the ability of the industry to export tequila? <div><input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5</div>

SECTION 2: Structural Enablers

INDICATOR	METRICS	QUESTION
Academic structure and HR / Training	INDUSTRY: Quality of academic programs related with the production of tequila or similar products	¿ How do you rate academic programs related to the production of Tequila in Jalisco or similar products? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/>
Planeación Urbana	INDUSTRY: Infrastructure of the city in order to stimulate the tequila industry.	How do you rate the physical infrastructure of the city for the tequila industry? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/>
Accessibility to centers of highly specialized human resources (technology parks and research centers)	CLUSTERING CAPABILITIES: Competitiveness level of research and development in the industry.	How do you rate the competitiveness of the research for the tequila industry? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/>
Intelligence industrial capabilities, trends and complementary products and systems Decision Support.	Clustering CAPABILITIES: Planning for the implementation of information and intelligence systems in the cluster of tequila.	Does tequila Cluster includes the development and implementation of a system of information and intelligence? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/>
Infrastructure for E-readiness, world-class connectivity broad coverage and easy access to sources of information and knowledge	Clustering CAPABILITIES: World class technology infrastructure broadband connectivity in public spaces, smart buildings)	How do you rate the technological infrastructure that provides Jalisco (broadband connectivity in public places, etc.) in relation to the tequila industry? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/>

SECTION 3: Economic and Financial Factors

INDICATOR	METRICS	QUESTION
<p>Economical Government support</p> <p>Joint ventures focused on finance all levels of business development by forming strategic alliances investors</p>	<p>INDUSTRY: Fund specific research projects for the tequila production and the industry development.</p> <p>INDUSTRY: Industry Capacity for joint ventures or strategic alliances..</p>	<p>Do you know of any specific government funding for projects to support the industry?</p> <p>Yes: <input type="radio"/> No: <input type="radio"/></p> <p>Are you aware of Joint Ventures or partnerships?</p> <p>Yes: <input type="radio"/> No: <input type="radio"/></p> <p>How would you rate the ability of the industry to establish joint ventures?</p> <p>1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/></p>
Existence of local and national industry investments.	CLUSTERING CAPABILITIES: Government programs to encourage business partnerships	<p>Do you know of a program of the governmental that drives the association?</p> <p>Yes: <input type="radio"/> No: <input type="radio"/></p>

SECTION 4: Conditions for Public Policy

INDICATOR	METRICS	QUESTION
<p>Legislation, regulation and standardization</p> <p>National and state policies that encourage industry</p>	INDUSTRY: Public policy that clearly encourages the tequila industry.	<p>How do you rate the impact of the public policy regarding tequila industry?</p> <p>1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/></p>

	INDUSTRY: Commitment and vision from the part of government to promote the industry	<p>How do you rate the commitment and vision from government to promote the industry?</p> <p>1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/></p>
Government investment in partnership with the private sector.	CLUSTERING CAPABILITIES: public-private partnership to develop the industry investment.	<p>Have been conducted joint investment between government and private actors to develop industry?</p> <p>1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/></p>
Support the associative of the three levels (municipal, state and national) government	CLUSTERING CAPABILITIES: Programs for forming networks and large enterprises SMEs competitiveness in key sectors in the region.	<p>How do you rate the degree of priority that the government gives to programs for the creation of networks of SMEs and large enterprises in key sectors for the competitiveness of the region (cooperation agreements)</p> <p>1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/></p>
Existence of strict law the rule of law.	CLUSTERING CAPABILITIES: regional regulatory mechanisms to require the application of standards related industry.	<p>How does the law level of enforcement in Jalisco?</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p> <p>1 2 3 4 5</p>
Aligning strategies for industrial-public policy	CLUSTERING CAPABILITIES: Exercise studies conducted by the government to determine interest from companies in the region to form a cluster	<p>Have there been studies done by government to determine the interest of companies in the region to support the cluster?</p> <p>Yes: <input type="radio"/> No: <input type="radio"/></p>

SECTION 5: Social and Cultural Drivers

INDICATOR	METRICS	QUESTION
Diffusion Awareness	INDUSTRY: Existence of foundations or institutions dedicated to the development and dissemination of industry INDUSTRY: Existence of technological advancement in the region	Are there any foundations or institutions dedicated to the development and dissemination of industry? Yes: <input type="radio"/> No: <input type="radio"/> How do you rate their impact: 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> Do you know models of technological advancement in the region? Yes: <input type="radio"/> No: <input type="radio"/> How do you rate their impact: 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/>
Existence of a shared vision among companies in the region. Culture industrial association (inter- and intra-industrial supply chains) International Networking and local partnerships (government, academia, financial institutions, etc.)	CLUSTERING CAPABILITIES: Preparation of the strategic vision and brand development jointly by the cluster participants CLUSTERING CAPABILITIES: Collaboration between companies emerged naturally CLUSTERING CAPABILITIES: Developing intercollegiate programs that are running or inter centre support the development of the tequila	¿ What is the degree of participation in the strategic vision and brand development jointly by participating in the cluster? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> How do you rate collaboration arose between companies in the tequila industry in Jalisco? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> Are there inter-centre, intercollegiate or programs that are running to support the development of the tequila

	industry.	industry? Yes: <input type="radio"/> No: <input type="radio"/> How would you rate the ease of emergence? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/>
--	-----------	---

SECTION 6: Regional Attractiveness

INDICATOR	METRICS	QUESTION
Pulse programs Certifications	INDUSTRY: impact of the implementation of programs to promote improvements in the industry. INDUSTRY: Degree of mandatory certification of the companies in the industry.	How do you rate the impact of the implementation of programs that promote improvements in the tequila industry? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> What certifications currently exist in Jalisco for tequila company? _____ How do you rate the impact? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> Are there any plans to make them mandatory? Yes: <input type="radio"/> No: <input type="radio"/>
Interrelationship between technology centers and the industry target Relationships between specialized service providers and the industry	CLUSTERING CAPABILITIES: transfer of knowledge from universities and knowledge centers to the industry companies CLUSTERING CAPABILITIES: Services specialized in the production of tequila	How do you rate the transfer of knowledge from universities and knowledge centers to the industry? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> It is still accessible or it reserves for large companies? Yes: <input type="radio"/> No: <input type="radio"/> Are there specialized services in the tequila production and

Ability to create an effective, inclusive and collaborative (research repository of value transfer and integration) Regional Innovation System	CLUSTERING CAPABILITIES: cluster development level of knowledge of the industry, management and governance.	support to the industry? Yes: <input type="radio"/> No: <input type="radio"/> How do you rate the development in the region? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/>
Availability of human resources with skills specialized in topics related to the main activities of the cluster	CLUSTERING CAPABILITIES: Attractiveness of experts with reputation for the region relative to the industry	There is a cluster of knowledge management and governance in the region? Yes: <input type="radio"/> No: <input type="radio"/> How do you rate it easier of emergence? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> How do you rate the ability of the region to attract experts with reputation for the region relative to the industry? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/>

SECCIÓN 7: Competitividad Industrial

INDICATOR	METRICS	QUESTION
Drivers of industrial competitiveness.	INDUSTRY: Strong capacity of Industry associations, flexible system to generate value added (Chambers, associations related to the tequila industry).	How do you rate the participation of the industry associations to generate added value to the industry (Chambers, associations related to the tequila industry)? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/>
Extended Structures System Value.	INDUSTRY: Degree of implementation of programs of industrial ecology recycling.	How do you rate the degree of implementation of programs of industrial ecology and recycling materials? 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/>
Ability to relate an effective complementary industries	CLUSTERING CAPABILITIES: Ability to	How do you rate the ability to establish partnerships

<p>Extended Value System and Value Added Chains more</p> <p>Existence of Global Production Networks globally and ability to insert local clusters in such networks</p> <p>World class players (global firms) with best practice, the presence of market leaders, innovative and successful companies.</p> <p>Access to networks of specialized services and supply services to companies (knowledge-intensive business services KIBS)</p> <p>Acceso a redes de servicios especializados y suministro de servicios a empresas (knowledge-intensive business services KIBS)</p>	<p>establish partnerships between companies in the target industries and companies from industry to generate additional value added</p> <p>CLUSTERING CAPABILITIES: Ability to establish partnerships with international clusters of complementary industries.</p> <p>CLUSTERING CAPABILITIES: Companies established in the region related to the tequila industry.</p> <p>CAPABILITIES clustering: Impact of activities of the Tequila Regulatory Council.</p>	<p>between companies in the target industries and supporting industries to generate added value?</p> <p>1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/></p> <p>How do you rate the ability to establish partnerships with international clusters of complementary industries?</p> <p>1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/></p> <p>How would you rate your performance shafts competitiveness in relation to the best companies in the world engaged in the production of alcoholic beverages?</p> <p>1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/></p> <p>How do you rate the impact of the actions of the Tequila Regulatory Council?</p> <p>1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/></p>
---	---	---

SECTION 8: Entrepreneurial Culture

INDICATOR	METRICS	QUESTION
Key competencies and world class processes	INDUSTRY: Impact awards for the best practices and innovation in the industry.	<p>The state has recognized the efforts of venture companies?</p> <p>Yes <input type="radio"/> No: <input type="radio"/></p> <p>¿ How do you rate the level of awards that the companies</p>

New technologies and international transfer of best practices	INDUSTRY: Degree of development of key technology differentiators and world-class skills	<p>received?</p> <p>1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/></p> <p>How do you rate the level of existence of key technology differentiators and world-class expertise in the region in the tequila industry?</p> <p>1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/></p>
Entrepreneurial culture and support business development	CLUSTERING CAPABILITIES: Degree of stimulation based cleantech venture construction	<p>How would you rate the degree of stimulation for the entrepreneurship?</p> <p>1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/></p> <p>Could you consider that there is sufficient support?</p> <p>1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/></p>

ANNEX II

PROFILE OF THE COMPANIES WHO PARTICIPATED IN THIS RESEARCH

- Destiladora Rubio, S.A. de C.V. “Rubio Family has approximately 50 years to obtain tequila. Destiladora Rubio was founded on July 13, 2000, with 100% Mexican capital and Tequilense. It has an area of 18,500 m²; adding a surface area of 7,000 m²; where a productive old-style extension is installed. The company has the necessary authorization for production of tequila 100% Agave tequila, has oversight of CRT. Destiladora Rubio open de doors for society and tourism to know the techniques of making tequila. He has contributed to the creation of 3 hotels. This Destiladora Rubio has sales with Asia to China and Japan. The brands of tequila produced in this Destiladora Rubio include: “Tequila La Rienda” class (Blanco, Reposado), “Tequila La Rienda Edición Especial” (Blanco, Reposado, Añejo y Extra Añejo), “Tequila El Carguero” (Reposado), “Tequila La Carroza” class (Añejo, Blanco y Reposado), “Tequila El Calorón” (Reposado), “Tequila La Invencible” (Blanco, Joven y Reposado), “Tequila El Estibador” (Reposado), “Tequila Querer es poder” (Reposado), “Tequila Los Talpeños” (Blanco y Reposado) y “Tequila El Tequilense” (Reposado).

Address: Carretera Internacional No. 200, Colonia Santa Cruz, C.P. 46400, Tequila, Jalisco, México. Phone: (+52) 374-742-1304 y (+52) 374-742-2830

Web site: www.destiladorarubio.com

- Tequila D'Reyes: “The heart of the appellation of Origin”

The mission is to convey to visitors the history of the Sauza family and cultural traditions of Tequila, positioning its brand in the highest level of quality. It is responsible for educating the public about the Tequila and history, as well as achievements and recognitions granted to tequila in different countries, including the gold cup found in the museum. And all this was through the efforts of the three generations

of the Sauza family (1873 - 1985). “Our great-great-grandfather, Don Cenobio, founded his first distillery La Perseverancia in 1873, in the town of Tequila, Jalisco.” His son, Eladio, took over the family business in 1909 when Don Cenobio had passed away. Eladio helped to establish tequila as the national drink of Mexico. He also founded the distillery, La Constancia. Don Eladio died in 1946, and left the family business to his son, Francisco Javier who brought about more changes to the industry and made our family’s tequila the most well-known brand in the world. While on a business trip to Japan in the late 1960’s, Don Javier came across a bottle of Japanese Tequila. Angered by this, he stated that tequila can only be made in Mexico, specifically, in the area around Tequila. A group of tequila producers, led by Don Javier, filed an application for an appellation of origin in 1973, but it wasn’t until 1996 when the world officially recognized the Denomination of Origin for Tequila. Don Javier bought a piece of land in the town of Tequila so he could build a hacienda on the highest point of town, On this land sat a small distillery, which Don Javier named La Fortaleza. With a small brick oven, a tahona pit, a few wood fermentation vats, and 2 small copper pot stills, our family produced tequila here until 1968. The distillery was not as efficient as they had to close and became a museum, but the family sold continued to live there after some time Don Guillemos achieving one of the grandchildren star again Destileria La Fortaleza, making tequila in the same way it was made over 100 years ago. For this story the name Grandparents Museum where it exposes the whole process that has led the development of Tequila from before the conquest to the present. The evolution of the instruments for the production of tequila.

For tourism in Destileria La Fortaleza offers Grandparents Tequila Tours where a journey is made by the Museum Grand parents and Destileria La Fortaleza, It includes tequila and Mexican dishes to enjoy the candlelight in the Cava Fortaleza.

Address: Vicente Albino Rojas No. 22, CP 46400 Tequila, Jalisco, Mexico.

Phone: (+52) 374-742-0247, (+52) 374-742-0154 and (+52) 374-742-0032

Web site: www.museolosabuelos.com

- Tequila José Cuervo de Jalisco S.A de C.V:

It started in 1840 when blood Orendain established links with leading families at the time the made the tequila. Founded in 1926 by Don Eduardo Orendain with the

acquisition of a small, rudimentary distillery. Ultimately this distillery would become what is now known as “The Mexican” is still owned by the Orendain family conquering palates in Mexico and various part of the world. The different products they offer are: “Tequila Gran Orendain” (Blanco, Reposado y Añejo), “Tequila Orendain Ollitas” (Blanco, Reposado), “Tequila Orendain” (Blanco, Extra Reposado y Extra Añejo), “Tequila Orendain Anniversario” (Reposado), “Tequila Puerto Vallarta” (Blanco, Reposado, Añejo y Extra Añejo), “Tequila Celebración” (Reposado), as well as production has Liquors as: “Crema de Membrillo, “Crema de Almendrado” y “Karole” (Licor de Café).

Address: Vallarta No. 6230, CP 46400 Tequila, Jalisco, Mexico.

Phone: (+52) 333-777-1818, (+52) 333-777-1841 and (+52) 333-777-1827

Web site: www.casaorendain.com

- Tequila Ofendían

It is beginnings are linked to Tequila Orendain to found the first distillery later Don Roberto, create “Tequila Virreyes”. In 1995 Don Roberto established “La Purisima”, one of the largest factories. Come with your friends and family to see one of the factories Tequila world’s largest and live the experience Don Roberto. Founded in 1924, we remain 100% Mexican, with over 80 years of experience and tradition. Tequila Don Roberto has a Spanish innovation relying on advanced technology in extracting honey agave, unique machinery. The products they have are: “La Arenita”, “Belsanto”, “Don Roberto” y “Tequi-shot”.

Address: Carretera Internacional 100 Oriente, C.P. 46400 Tequila, Jalisco, México

Phone: (+52) 374-742-2321

Web site: www.tequiladonroberto.com

- Tequila Ópalo Azul

His distillery “El llano”, is one of the oldest in the región that still produce tequila, it is located in the heart of the magic town on the shore of the volcano of Tequila and is managed by the owners Orendain offspring of one of the most recognized families in the Tequila industry. “In our distillery we used the extraordinary water from the spring of the volcano of Tequila” Tequila Arette export to countries like Norway, Sweden,

Denmark, Poland, Italy, Germany, Holland, France, Belgium, England, Guatemala and USA. The products that have are: “Tequila Arette Gran Clase” (Extra Añejo), “Tequila Arette Suave” (Blanco, Reposado y Añejo), “Tequila Arette” (Blanco, Reposado y Añejo), “Tequila Unique” (Blanco, Reposado, Añejo y Extra Añejo) y “Tequila Agave de Oro” (Reposado).

Address: Silverio Nuñez No. 100, C.P.46400, Tequila, Jalisco, México

Phone: (+ 52) 333-615- 0192 and (+ 52) 333-615- 1646

Web site: www.tequilaarette.com

- Tequila Sauza “Tequila is the spirit of Mexico, and since 1873 Casa Sauza has been the spirit of tequila.”

In 1753 Mexican entrepreneurs installed "La Antigua Cruz", the first commercial distillery in the land. The construction of this facility, the same one Don Cenobio Sauza later purchased when he founded Casa Sauza, further established this Jalisco village as this fine spirit's production center. Spain's efforts to thwart the spread of tequila continued. In the 19th century, Mexico won her independence from Spain allowing a new Mexican-run tequila industry to take shape. During this important hundred year period, Casa Sauza made its first appearance in the person of Don Cenobio Sauza. In 1873, Don Cenobio purchased La Antigua Cruz, the oldest distillery in Mexico, founded Casa Sauza and began reshaping the tequila industry. His visionary leadership introduced many advances in tequila making-each resulting in a more consistently delicious and complex tequila. His persevering spirit continues to guide us in everything we do at Casa Sauza. This is the Casa Sauza passion-an unyielding drive to make the world's best tequila and an absolute faith in the beauty and integrity of its source, the Agave Tequilana Weber, blue variety. It has its own museum and is located in the town of Tequila. It produces over twelve varieties (aging and brand) of tequila. It offers tasting on their premises and has received numerous awards such as the “National Quality Award” and the other on technological innovation.

The products are divided into:

”Tequilla Sauza”: Conmemorativo (Añejo), Blue (Reposado y Silver) y Gold.

“Tequila 100 años” (Blanco, Reposado y Añejo)

“Tequila Hornitos” (Plata, Reposado y Añejo)

“Tequila Tres Generaciones” (Plata, Reposado y Añejo)

“Tequila Extra XA Añejo” (Edición Especial)

Sauza has tours for tourists so the tour follows Destileria La Perseverancia and Quinta Sauza. Monday to Saturday have a schedule of 9:30- 11:00 and 12:30- 15:00 hrs. The cost of entry is for general public \$100 and students \$70.

Address: Navarro # 70 Col. Centro, CP 46400 Tequila, Jalisco, Mexico.

Phone: (+52) 374-742-4140

Web site: www.casasauza.com and www.facebook.com/CasaSauza

- Tequila Tequileño

In the XXI century Destiladora Leyros born with an elaboration process according to our time. This Destiladora Leyros is concerned about the risk they may have their employees so deployed machines to reduce the heavy work to which workers are exposed, plus it is an ecologicall friendly process uses hands of 50% of energy and less than 60% of the water used by traditional processes in making tequila. The products provide the Destiladora Leyros include: ”Tequila Leyros”(Plata 35% , Plata 40% y Oro 35%, Oro 40%),”Tequila Opalo Azul” (Reposado),” Tequila Don Fermin”(Blanco ,Reposado,Añejo y Extra Añejo),” Tequila Los Azules Oro” y” Tequila Los Azules Plata “

Address: Carretera Internacional Guadalajara –Tepic No. 394, C.P.46400, Tequila, Jalisco ,México.

Phone: (+52) 374- 742- 1553 y (+52) 374- 742 -2065

Web site: www.leyrostequila.com

- Tequila Tres Mujeres

For over 65 years, Jesus Sergio Partida has been growing millions of their renowned blue agave plants for well-known tequila manufacturers. Over the years, the family decided to create Tres Mujeres Tequila using their most select blue agave. Their mission is to fill a void in the premium tequila market for a 100% blue agave, 100% natural, quality tequila that is affordably priced. Today, the family is one of the largest growers of blue agave with over 8 million agave plants. Tres Mujeres, unlike most mass brand

tequilas, never adds color, flavors or chemicals and is made only from the best blue agave. In addition, our current production capacity is equal to 5,000 liters of tequila per day. All our processes are certified and guaranteed by the CRT. For tourists this factory offers a walkthrough the corridors and cobbled ways to visit different areas, such as: cooking, grinding, fermentation, distillation, aging, and bottling and enjoy the beautiful country landscape and the delicious aroma from the whole process. The product offered are: “Tequila Tres Mujeres Paper Label” (Blanco y Reposado),”Tequila Tres Mujeres Metal Label”(Blanco, Reposado y Añejo),”Tequila Tres Mujeres Anfora-Leather Case” (Reposado), “Tequila Teki Lady’s” (Reposado), “Tequila Art Nouveau” (Blanco, Reposado y Añejo), “Tequila El Arco del Cabo” (Blanco y Reposado), “Tequila El Arco Tequila” (Reposado).

Address: Carretera Internacional Guadalajara - Nogales, Tequila, Jalisco, México

Phone: (+52) 374-745-0840

Web site: www.tresmujerestequila.com

- Tierra de Agaves

It is 5 kilometers from the city of Tequila, Jalisco, in the area called Agave Landscape World Heritage of UNESCO. Agaves are selected for the production of premium quality tequila.

Francisco Beckman Vidal and his brother were owners of Casa Cuervo Tequila, having inherited the company from his father Don Juan Beckman Gallardo, who was the great nephew of marriage Jose Cuervo and Ana Gonzalez Rubio, owners of the largest tequila factory in the year 1900.

In the 1992 he decided to sell his share of the company to engage with their children to their own businesses including Tierra de Agaves.

The products that count are: “Tequila Luna Azul”(Blanco y Reposado), “Tequila La Certeza “ (Añejo , Blanco y Reposado), “Tequila 3 Josés” (Reposado y Silver), “Tequila Barrica Antigua” (Reposado y Silver), “Tequila Amorosa” (Reposado y Silver).

Address: Carretera 15 Internacional Guadalajara ,Nogales km.52.5 C. P 46400 , Tequila Jalisco, México

Phone: (+52) 374- 742- 2591

Web site: www.tierradeagaves.com

- Tequilas Finos de Jalisco

Fabrica de Tequilas Finos, started its operation in the year 2000 as sole owners Mr. Federico Cabo and Mrs. Luz Maria Cabo and before that, since the year 1984 they owned Tequila Eucario Gonzalez S.A. de C.V. as a result of this they have a broad experience and as know the production and marketing of Tequila. In the year 1999 they had the opportunity to acquire several pieces of land adjacent to the old Colonial Building dated from 1923, and now this building is used as the aging cava. They star the construction of the Distillery with the ultimate and the State of the Art Technology. In the year 2001 Fabrica de Tequilas Finos started producing Tenoch Tequila, and latter in Station, Tonalá, Don Camilo, Zapopan and Santos. Recently the came out with new brands have been marketed with great success in the USA.

Tequilaa Finos Factory products are: “Tequila Zapopan” (Blanco y Reposado), “Tequila Zapopan Silver”, “Tequila Zapopan Gold”, ”Tequila Tenoch”, ”Tequila Tonalá”, ”Tequila Tonalá Reposado”, ”Tequila Tonalá Añejo”, “Tequila Don Camilo” (Reposado y Añejo), “Tequila Don Camilo Barrica”, “Tequila Stallion” (Añejo), “Tequila Pancho Pistolas” (Reposado), “Tequila La prima de Pancho” (Reposado),”Tequila Agave 99” (Silver, Reposado y Añejo).

Address: Heroe de Nacozari #5, Col. La Estacion, C.P. 46400, Tequila, Jalisco

Phone: (+52) 374- 742- 1811

Web site: www.fabricadetequilasfinos.com

**SUPPLEMENTAL VERSION OF THE
DISSERTATION IN SLOVAK LANGUAGE**

EKONOMICKÁ UNIVERZITA V BRATISLAVE

NÁRODOHOSPODÁRSKA FAKULTA

Mgr. Alejandro García Chaparro

„Klastre, konkurencieschopnosti a regionálny rozvoj: prípad klastra tequily“

na získanie akademického titulu "doktor"

("philosophiae doctor", v skratke "PhD.")

v študijnom odbore 3.3.5 verejná správa a regionálny rozvoj

Bratislava 2015

1. Prehľad o súčasnom stave problematiky riešenej v dizertačnej práci doma a v zahraničí

Téma dizertačnej práce bola zvolená vzhľadom na aktuálnosť a dôležitosť skúmania problematiky priemyslu tequily v obci Tequila; štát Jalisco; Mexiko práve teraz, v období plnom otázok a očakávaní ďalšieho smerovania vývoja.

Súčasný záujem o analýzu klastrov a aglomeráciu pochádza z konca devätnásteho storočia. Bolo to obdobie, v ktorom preslávení ekonómovia ako Alfred Marshall, zdôraznili pozitívne externality plynúce z umiestnenia ekonomík podľa geografickej blízkosti rôznych firiem (Karlsson, 2007). Dynamika inovačných klastrov je posilnená silnou miestnou konkurenciou medzi prepojenými firmami a prítomnosťou vysokých škôl, ktoré poháňajú podnikanie, podporu vlády a miestnych inštitúcií (M. Porter, 1998).

V nadväznosti na uvedené si predkladaná práca kladie za cieľ identifikovať, v akom štádiu životného cyklu klastrov sa nachádza cluster tequily, rovnako aj spoznať štruktúru a aktuálnu situáciu priemyslu. Práca je rozdelená do šiestich kapitol tak, aby zahŕňala všetky aspekty skúmanej problematiky. Výstupom práce je overenie situácie, v ktorej sa nachádza priemysel, ktorý je veľmi dôležitý pre Mexiko, a to nie len preto, že každý deň je prítomný na medzinárodnom trhu, ale aj preto, že tequila je symbolom, vďaka ktorému sa pozná Mexiko. V závere hodnotíme využiteľnosť údajov pre teóriu a prax a navrhujeme odporúčania pre rozvoj priemyslu.

Takto zostavená práca bude prínosom pre odborný priemysel tequily, nie len v obci Tequila Jalisco, ale aj v celej oblasti určenia pôvodu.

Vzhľadom na rozsah a obsah publikácie ako aj jej zameranie ide o oblasť, ktorá nebola doteraz v tejto podobe v Mexiku preskúmaná. Samotné overenie hypotéz a preskúmanie determinantov posúva vpred prieskum faktorov, ktoré môžu v budúcnosti určovať rast priemyslu, predovšetkým vytvoriť štruktúru, ktorá mu povolí byť na svetovej úrovni, porovnanú s najlepšimi postupmi podobných priemyslov na svete. Samotná prognóza vývoja otvára priestor pre ďalší výskum faktorov a na najbližšie roky vylučuje výrazné výkyvy s dopadom na ekonomiku krajiny ako celku.

Väčšina štúdií skúma vývoj priemyselných klastrov špičkových technológií, ale vidiecky sektor od druhej polovice deväťdesiatych rokov sa javil opustený vďaka

národným politikám industrializácie Mexika. Jeden riadok v literatúre priemyselných klastrov pozostáva zo štúdia prípadov v oblastiach, kde je koncentrácia firiem úspešná. Existuje rad príkladov, ale pre účely tejto štúdie boli analyzované iba klastre alkoholických nápojov s veľkou tradíciou v histórii svojich krajín pôvodu a ich regiónov. Porter (1999) odkazuje na túto skupinu výroby vína v Napa Valley, kde je schopnosť inovovať a zlepšovať to, čo ich urobilo úspešnými, v rozpore s intuitívnou predstavou, že sú vlastníkmí pôdy a podnebia v regióne. Inými slovami, zdroje konkurencieschopnosti nie sú porovnávacími výhodami v Napa Valley, ale súhrnom štyroch konkurenčných výhod uvedených v diamante konkurenčných výhod.

Môžeme vidieť, že vo väčšine prípadov je pre súkromnú iniciatívu nutná podpora vlády. Úloha univerzít a výskumných centier je tiež kľúčová, pretože oni sú tými, ktorí skutočne prinášajú znalosti v danom odvetví na to, aby mohli technologicky dopomôcť ku konkurencieschopnosti.

Montáž Triple Helix sa zdá byť dôležitým prvkom identity regiónu, rovnako ako v štyroch vyššie popísaných prípadoch. Región je známy ako medzinárodný referent vo vzťahu k odvetviu, v ktorom sa klaster vyvinul. Tieto príklady sú iba stručným prehľadom širokej škály príkladov v tomto aspekte literatúry.

Problém so študijným prístupom prípadov je, že okrem predloženia veľmi zvláštnych prvkov pre každý región, neuspokojivo odpovedá na otázku, ako vznikajú a ako sa vyvíjajú priemyselné klastre vo všeobecnosti. Existujú dokonca aj autori, ktorí tvrdia, že neexistujú žiadne všeobecné príčiny pre rozvoj klastrov (Isbasoiu, 2007).

Aj keď sa v literatúre dajú nájsť rôzne definície pojmu *priemyselný klaster*, najznámejší je ten, ktorý vytvoril Michael Porter (1990). Pre neho sú priemyselné klastre zbierkou geograficky medzi sebou blízkych firiem a inštitúcií, ktoré sú prepojené spoločnými záujmami a ktorých aktivity sa vzájomne dopĺňajú. V rámci klastra existujú tiež vládne inštitúcie a vysoké školy, profesijné združenia, normalizačné orgány, „think tanky“, atď. Okrem toho, existuje vzťah konkurencieschopnosti a spolupráca medzi zúčastnenými stranami.

Porterove predstavy o priemyselných klastroch sú zapísané v tradícii strategického riadenia a sú dôsledkom jeho práce vyvinutej o zmene prístupu od používania komparatívnych výhod k využívaniu konkurenčných výhod, ako determinant konkurencieschopnosti krajiny. Porter et. al. (2002) chápu konkurencieschopnosť ako niečo, čo je pripojené k zdrojom prosperity národa, a je vo

funkcii produktivity; t.j. hodnoty tovaru a služieb, ktoré národ môže vytvárať na otvorenom trhu; a účinnosti, s ktorou môžu byť vyrobené. Takže, úloha na zlepšenie konkurenčného postavenia krajiny je, aby prijali opatrenia na zvýšenie produktivity krajiny z mikroekonomickej úrovne (t.j. spoločnosti). To sa dosiahne prostredníctvom inovácie a hospodárskej súťaže medzi spoločnosťami. Konkurencia medzi spoločnosťami (ako aj väzby spolupráce medzi rôznymi podnikmi, ktoré tvoria výrobné reťazce) sú uvedené v súvislosti so štyrmi rozmermi alebo konkurenčnými výhodami:

1. podmienky dopytu;
2. súvisiace a podporujúce odvetvia;
3. faktorové podmienky a;
4. stratégia, štruktúra a rivalita firiem (Porter, 1999).

Podľa Portera (1990) sú priemyselné klastre určujúcim faktorom vo vývoji konkurenčného postavenia krajiny. Je to preto, že konkurencieschopnosť krajiny alebo regiónu je výsledkom tejto súťaživosti a inovácie prítomnej v podnikoch v rovnakej krajine alebo regióne. Porter (1999) tvrdí, že najlepším spôsobom, ako zvýšiť konkurencieschopnosť a inováciu spoločnosti je cez priemyselné klastre.

Porterove nápady mali veľký vplyv. A to preto, že vďaka existujúcim vzťahom medzi konkurencieschopnosťou spoločnosti a regiónu došlo k pokusom obnoviť podmienky potrebné pre rozvoj konkurenčných výhod a tým podporiť aj rast existujúcich klastrov.

Porter (1999) kladie dôraz na to, že pri úspechu je viac pravdepodobné to, že pôsobí na podporu rozvoja existujúcich klastrov, ako by sa ich snažil vytvoriť od nuly.

Aj cez svoju širokú distribúciu sa model konkurenčného diamantu nezaobíde bez svojich kritikov. Niektorí autori, ako napríklad Martin a Sunley (2001) považujú definíciu priemyselného klastra za nedostačujúcu na to, aby teória alebo model mohli byť testované a dôsledne hodnotené. Krugman (1994) uvádza, že Porterov diamant konkurenčných výhod je dobrou učebnou pomôckou, ale prináša ekonómom problémy s ním pracovať, pretože väzby medzi premennými sú nejasné. Buendía (2005) dodáva, že nezávisle od toho, čo chce Krugman (1994) týmto povedať, Porterov (1990) model je len zoznamom premenných, ktoré nie sú dohromady spojené na to, aby vytvorili model, ktorý môže byť empiricky meraný a slúžiť ako „vodítko“ pre rozvoj verejnej politiky.

Samo-organizačný model priemyselných klastrov

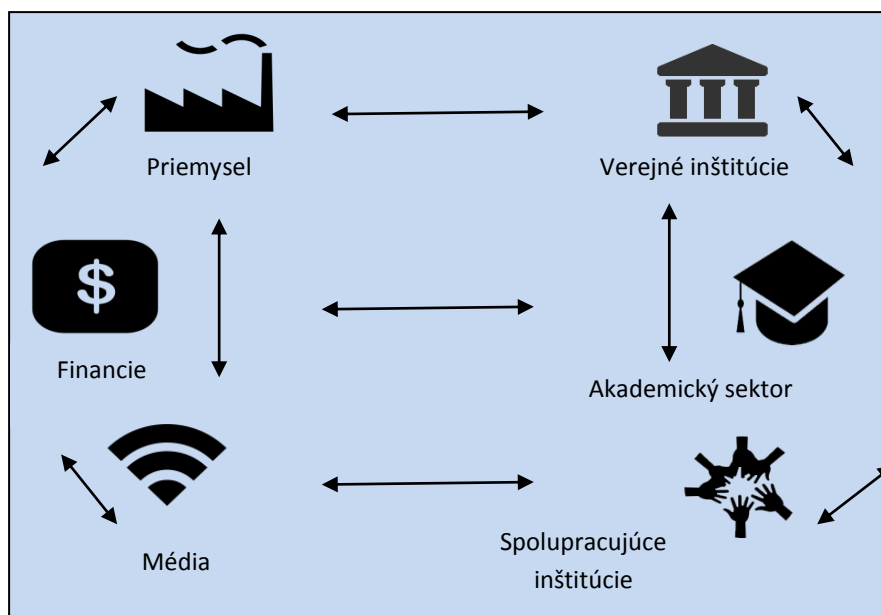
Priemyselné klastre sú zložité štruktúry, ktorých pochopenie nie je lineárne. Jedným z dôvodov, že len málo štúdií určuje presné príčiny na tvorenie klastrov je neznalosť modelu, ktorá zahŕňa rôzne faktory podliehajúce životnému cyklu týchto štruktúr.

No neznamená to neprítomnosť takého modelu. Buendía (2005) na základe systémovej dynamiky vyvinul analytický model priemyselných klastrov. Tento model vysvetľuje vzájomné pôsobenie rôznych premenných, ktoré hrajú úlohu v priemyselných klastroch. Modelované premenné sú: 1.) hospodársky rast; 2.) mestská infraštruktúra; 3.) konkurenčná výhoda a exportná pozícia krajiny; 4.) rast klastra; 5.) počet firiem; 6.) veľkosť spoločnosti; 7.) kvalifikované pracovné sily; 8.) dostupnosť zdrojov; 9.) výroba; 10.) inovácia; 11.) akumulácia vedomosti; 12.) investície do výskumu a vývoja; 13.) nástroje; 14.) konkurencieschopnosť; 15.) straty plynúce z aglomerácie; 16.) nasýtené lokality; 17.) drahé terény; a 18.) vzácne a drahé infraštruktúry. V tomto modeli možno nájsť zastúpené prvky uvedené v Porterovom diamante (1990) a prvky, ktoré uvádza Krugman (1991) ako dôležité pre rozvoj klastrov (prelievanie poznatkov, kvalifikovaná pracovná sila a špecifické vstupy pre priemysel).

Scheel (2005) zobrazuje priemyselné klastre ako komplexné systémy, ktorých premenné majú cykly spätnej väzby. Preto na vysvetlenie vývoja a teórie verejnej mienky používa systémovú dynamiku, aby zriadil formalizáciu svojho modelu. Ďalej budeme vysvetľovať pojem systémovej dynamiky a potom súbor cyklov, ktoré sú relevantné a v rámci tohto modelu sú preskúvané.

Keď sa faktory, ktoré ovplyvňujú konkurencieschopnosť podnikov chcú analyzovať, sú považované za makroekonomické premenné so sektorovým a variabilným charakterom. Vo verejnej správe existuje jasný záujem v snahe podporiť akcie, ktoré by mohli generovať zlepšenie konkurenčnej výhody podnikov, ktoré, podľa poradia, predstavuje zlepšenie konkurencieschopnosti regiónu, v ktorom sa nachádzajú. Medzi týmito opatreniami, vytváranie klastrov získalo veľmi dobré privítanie. Hlavnou výhodou klastra je odvodenie od jej príspevku na zlepšenie konkurenčnej výhody zo spoločností, ktoré ju tvoria, aby zlepšili konkurencieschopnosť regiónu, v ktorom sa nachádza. Výhody plynúce z vôle spolupráce sú dôvodom, prečo je veľmi dôležité strategické zameranie a musí byť veľmi jasné, že ide o tento typ podnikateľského prístupu.

Schéma: Rôzni aktéri zapojení do klastra



Zdroj: Sölvell, Örjan: 2008: s. 13

Životný cyklus klastra

Prvé štúdiá o vývoji klastrov sú postavené v tesnej symetrii s cyklom príslušného odvetvia, to znamená, že rast a pokles klastrov je priestorovým prejavom životného cyklu priemyslu (Klepper, 1997). V tomto zmysle, Storper a Walker (1989) tvrdia, že priemysel produkuje regióny prostredníctvom štyroch modelov - Poloha: Umiestnenie, klaster, disperzia a "centrá zmeny" (SSV-centra). Títo autori argumentujú, že v počiatočných fázach odvetví, kedy prieskum a inovácie výrobku prevládajú a ponúkajú novým priemyslom početné príležitosti na prilákanie mnohých prichádzajúcich, naopak tieto majú tendenciu byť sústredené na nemetropolitnom území, kde talent a prví užívatelia sú hojnejší. Na druhej strane, s postupnou štandardizáciou výrobku, boli vyčerpané nové príležitosti, inovácie v oblasti procesov a zníženie zisku nákladov vo význame. Tieto transformácie sú preložené do disperzie priemyslu smerom k okrajovým miestam s nižšími nákladmi. Toto vytvára priestorovú reorganizáciu vo forme pohybu od stredu k okraju.

Tieto teórie boli kritizované za to, že sú príliš rigidné a deterministické a sú postavené so silnou symetriou priemyselného životného cyklu. Avšak zmizne ten, ktorý rieši obe novšie tvrdia, že vzťah medzi vývojom priemyslu a klastra nie je jednosmerný

(Martin a Sunley, 2011). Oni tiež veria, že klastre môžu nasledovať niekoľko ciest, čo znižuje základný deterministický zmysel v poňatí životného cyklu (Martin a Sunley, 2011).

Vývoj klastra nastane ako interakcie medzi priemyselným a regionálnym rozmerom (Crespo, 2011). Preto cyklus bude mať vplyv na priemyselný životný cyklus klastra, ale nemôže riadiť priemysel a klaster, ktoré nemajú symetrické cykly (Menzel a Fornahl, 2010). Na druhú stranu, v poklese priemyslu môže klaster klesať, zatiaľ čo iné sú obnovené a transformované na začatie nového cyklu rastu. Vývoj klastra má tiež okrem priemyselných a vzťahových zložiek aj veľa regionálnych zložiek. To vysvetľuje, prečo dva klastre v rovnakom odvetví môžu sledovať rôzne cesty v tom istom časovom okamihu. V tomto scenári, Klepper (2002), a Boschma Wenting (2007) a Buenstorf a Klepper (2009) študoval demografickú logiku a schopnosti firiem vysvetliť dynamiku priestorovej koncentrácie priemyselných odvetví a úspechu určitých miest vzhľadom k ostatným. Títo autori argumentovali, že firmy s lepšími zručnosťami prispôbené požiadavkám trhu, budú mať väčší rast a produkovať viac produktov. Tieto produkty zdedili schopnosti svojho predchodcu, tie najlepšie adaptácie, ktoré sa nachádzajú v blízkosti ich "materskej spoločnosti" (Dahl a Sorenson, 2013), ktorá objaví a formuje klastre v čase (Wang 2013).

Fornahl a Menzel (2010) sú vybavené životným cyklom modelu klastra (CVC) a sú viac populárne. Autori vysvetľujú vývoj klastra pozdĺž jeho rôznych fáz analýzou každého z nich a premenou klastra z kvantitatívneho aj kvalitatívneho hľadiska. Podľa ich modelu klastra sa vyvíja z interakcie troch základných faktorov: rôznorodosti organizácií, ich rozdielnych databáz znalostí a ich študijné schopnosti.

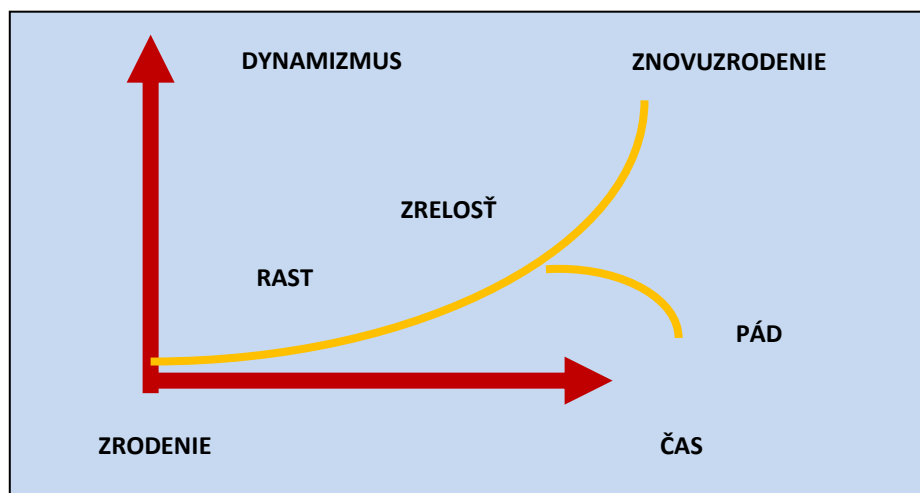
V núdzovej fáze, nebola doteraz definovaná "kontaktné miesto", takže každý prichádzajúci zvyšuje heterogenosť klastra. Keď cluster dosiahne určité kritické množstvo, heterogenita je znížená: čoraz viac firiem zdieľa rovnakú skúsenosť pred vstupom. Táto konvergencia vytvára pozitívne synergie pre firmy v klasteri s ohľadom na vonkajšie aglomeračné ekonomiky. Pretože tento proces konverencie pokračuje, konkurencia medzi spoločnosťami zvyšuje klaster a potenciál pre inovácie je znížený o silnú špecializáciu a koncentráciu v niekoľkých spoločnostiach. Klaster je v zámku, v negatívne, ktorý vedie k poklesu. Ter Wal a Boschma (2011), integrovali okrem toho aj úlohu sietí a vzťahov medzi spoločnosťami, ktoré sa spoločne vyvíjajú s cyklom priemyselného podniku a rôznorodosťou v klasteri. Autori tvrdia, že cyklus priemyselnej

siete klastrov sú nestabilný v núdzovej fáze a musí byť štruktúrovaný tak, ako je stabilný v centre / periférie vo fáze rastu. S časom rastie kódovanie, čím sa znižuje množstvo generovaného na výstupe aktérov a opakovanie v podnikoch, a stabilita sietí vedie k uzamknutiu klastra. Tento klaster postráda mechanizmy pre dosiahnutie nových poznatkov, ktoré zvýšia jeho obnovu a vyhnú sa poklesu. Crespo a kol. (2014) hovoria o "pružnosti" v klasteri a odkazuje sa na schopnosti, aby sa zabránilo poklesu klastra cez predĺženie.

Klaster je pružný, ak je schopný zdržiavať a disociovať jeho vývoj s vývojom priemyslu v každom okamihu. To bude môcť spojiť svoju cestu s cestou priemyslu vo fázach expanzie. Naproti tomu, keď cyklus vstupuje do jeho priemyselného štádia zrelosti alebo poklesu, pružný klaster bude schopný opustiť túto cestu cez vnútornú obnovu k pohybu smerom k novému príbuznému priemyslu v expanznej fáze. Napokon, Martin a Sunley (2011) predstavili alternatívu tradičného spôsobu konceptualizácie životného cyklu klastra, ktorý poskytuje model založený na komplexných adaptívnych systémoch, ktoré odmietajú existenciu jediného modelu evolúcie klastra.

Dole možno vidieť graf teoretického životného cyklu, ktorý má klaster, kde sa dá pozorovať tento nový variant regenerácie klastra po zmene vo forme fungovania.

Schéma: Graf životného cyklu klastra



Zdroj: Sölvell, Örjan, 2008: s. 18

2. Cieľ a zameranie dizertačnej práce

Cieľom práce je analyzovať v akom štádiu je klaster tequily, ktorý je založený na teórii životného cyklu a prispieva k pochopeniu fungovania klastru tequily v obci Tequila

Jalisco a jeho vplyv na konkurencieschopnosť regionálneho rozvoja v oblasti určenia pôvodu založenom na čiastočných podmienkach v mexickom kontexte.

Špecifické ciele

Pochopiť pojem klaster, jeho pôvod, vývoj, cyklus života a rozdielne súčasné modely.

Identifikovať úspešné faktory a neúspešné zo štúdia vývoju existujúcich klastrov.

Porovnať výsledky štúdia klastru tequily s analýzou svetoznámeho klastra vína v Kalifornii.

Odhalit' budúce výzvy klastra tequily.

Vydať nejaké odporúčania verejnej politiky.

Hypotézy výskumu

V dnešnej dobe globalizácia, rast priemyslov a rozvoj nových technológií robia svet menším, podľa slov Thomasa L. Friedmana: "Svet je plochý". Dynamika neustáleho zlepšovania súťaží tvrdšie a hladšie, detaily sú dôležité a musia byť uplatnené nové stratégie a nové rozhodnutia. Niektoré z týchto stratégií a rozhodnutí sú výtvory priemyselných skupín v určitých geografických oblastiach. Tieto nás nasmerujú k zlepšeniu klastra a diagnostike jednotlivých aktérov. Dané zmeny sú platné pre všetky odvetvia priemyslu, vrátane priemyslu tequily v mexickom štáte Jalisco. Priemysel má prijať opatrenia na udržanie sa vo veľkej hre, kde klaster je impulzom pre hospodársky rozvoj a rast. Dôvod, prečo sa má analyzovať tequila je zistiť, v akej fáze je odvetvie a vedieť, či sa vzťahuje na všetkých aktérov klastra.

3 Metodika práce a metódy skúmania

Metodické prístupy: COMPSTRIN (Competitive Strategy for Technological Innovation) a COMPSTRAC (Competitive Strategy for Industrial Clustering) sú súčasťou metodiky registrovanej pod COMPSTRAT (Competitive Strategy for Global Positioning of Technology Based Enterprises), prístupov na rozvoj tejto dizertačnej práce vzhľadom na jej špecifické aplikácie v konkrétnom regióne. V tomto prípade je to región Tequila v mexickom štáte Jalisco. Tieto prístupy boli vytvorené dr. Carlosom Scheel Mayenbergerom, profesorom EGADE¹² - Tecnológico de Monterrey.

¹² Graduated Business School of Tecnológico de Monterrey (ITESM 1995)

Metodologický prístup COMPSTRAC umožňuje zvyšovanie komplexnej stratégie klasterizácie, znásobiť schopnosti všetkých komponentov (zainteresovaných subjektov), jeden po druhom vytvárať synergiu a využiť výhody príležitostí na hodnotu. V industrializovaných krajinách je zhromaždenie klastrov pomerne jednoduché preto, lebo sú tam vonkajšie podmienky. V rozvojových krajinách je situácia výrazne odlišná; je potrebné vyvinúť stratégiu na skladanie podmienok a prepája komponenty kúsok po kúsok až do vyliahnutia a nakoniec štruktúry, ktoré sa môžu správať ako skutočná skupina schopná konkurovať svetovým štandardom.

Metodika je rozdelená do piatich fáz:

Stanovenie všeobecných charakteristík.

Úprava ukazovateľov pre konkrétny prípad.

Umiestnenia a identifikácia osvedčených postupov vo vzťahu k nášmu priemyslu ako takého, pokiaľ ide o regióny, ktoré úspešne rozvinuli klastre v rovnakom alebo podobnom priemysle.

Popis miestneho priemyslu a regiónu.

Porovnanie medzi najlepšími postupmi a podmienkami v regióne, ktoré určujú priemysel a študovanú oblasť.

Kritériá, podľa ktorých bola vybraná vzorka pre výskum: Na vybranie vzorky pre daný výskum bola zvolená skupina ľudí, ktorá slúžila na zber údajov a zoraďuje sa do troch kategórií. Použil sa dotazník, ktorý bol zodpovedaný digitálnou formou a to prostredníctvom e-mailu, avšak v decembri roku 2014 bola vykonaná návšteva obce Tequila v Jalisco s cieľom zhromaždiť informácie a kontakty na ľudí v rámci klastra.

Schéma: Druh odborníka odpovedajúceho na dotazník

DRUH ODBORNÍKA	MNOŽSTVO
Odborníci zo súkromného sektora	35
Vládni odborníci	10
Akademickí odborníci	5
CELKOM	50

Zdroj: Vlastná práca, 2014

4. Štruktúra dizertačnej práce

Štruktúra tohto projektu začína úvodom dizertačnej práce a cieľom, ktorým sa zaoberá. Prehľad literatúry je uvedený v kapitole I, kde sa bude diskutovať o pojme *klastre*, ako aj jeho pôvode a podobnosťami toho istého medzi rôznymi dokumentmi, ktoré boli vykonané výskumníkmi a odborníkmi v danej oblasti, ktorí vysvetľujú kedy a prečo je vhodné podporiť klastre. Okrem toho predstavíme súčasný životný cyklus klastrov. V kapitole II sa uvádzajú ciele výskumu. Tretia kapitola popisuje metodiku, ktorá sa použila pri výskume. V kapitole IV je použitá metóda v priemysle alkoholických nápojov a predstavuje sa porovnávací výskum medzi klastrom vína v Napa Valley v Kalifornii a klastrom tequily v Tequile v štáte Jalisco. Kapitola V popisuje dojmy oslovených ľudí, ktorí sú na scéne klastra tequily. V kapitole VI sú prezentované diskusie týkajúce sa výskumu a odporúčania emitované aktérmi Triple Hélix, akademického sektora, podnikateľskej sféry a štátnej správy. Nakoniec v poslednej časti sú uvedené závery výskumu.

5. Výsledky práce

V tejto dizertačnej práci bol použitý metodologický rámec COMPSTRAC ako metóda analýzy priemyslu tequily v obci Tequila v štáte Jalisco, porovnávajúc ho s úspešnými klastrami v podobnom priemysle vo svete. Ide o prípad klastra vína umiestneného v Napa Valley v Kalifornii. Napriek tomu, že obe sú si veľmi podobné, Kalifornia je zapriahnutá v poľnohospodárstve, ale s odstupom času vstúpila do procesu technického a priemyselného rozvoja, avšak ani v poľnohospodárskom sektore sa na ňu nezabudlo. No situácia v Jalisco nie je rovnaká, štát pokročil a je považovaný za celok veľkého technického a priemyselného rozvoja. Je druhým najväčším v mexickom sektore a poskytuje veľké percento HDP, no v poľnohospodárskom odvetví sa na ňo zabudlo a tequila značne zaostáva.

Konkurenčné výhody v dnešnej dobe už nie sú len o dostupnosti vstupov, ako sú prírodné zdroje, ale skôr o technológii a produktivite. Produktivita spočíva v tom, ako spoločnosti súperia, nie kde súperia. Tieto spoločnosti môžu byť veľmi produktívne v každom odvetví, ak používajú sofistikované metódy a ponúkajú najmodernejšie technológie, jedinečné produkty a služby (Porter, 1998). Sofistikovanosť, s ktorou spoločnosti v danom mieste súperia je silne ovplyvnená kvalitou miestneho podnikateľského prostredia.

Spoločnosti nemôžu využívať moderné logistické technológie bez výbornej dopravnej infraštruktúry, ani nemôžu konkurovať sofistikovaným službám bez vzdelaných ľudí. Niektoré aspekty podnikateľského prostredia, ako je napríklad právny systém alebo sadzby podnikových daní majú vplyv na všetky priemyselné odvetvia.

V Mexiku bolo niekoľko iniciatív vyvinutých pre klasterizáciu, ktoré sú najreprezentatívnejším priemyslom v tejto oblasti, softvér, biotechnológie, nanotechnológie a i. Klaster boli vyvinuté najmä v regiónoch ako Jalisco, Mexiko D.F. a Nuevo León. Tzv. *maquiladoras* sa nachádzajú najmä v pohraničných oblastiach, aj keď vytváranie dodávateľských reťazcov okolo seba nie je možné považovať za rozbušky klastrov vzhľadom na skutočnosť, že v tomto obchodnom modeli sa vo všeobecnosti využívajú zahraničné spoločnosti a nie regióny, resp. komunity.

Klaster zlepšuje stav spoločnosti so silným obchodným vedením cez obchodné združenia založené na klastry. Na základe skúseností z Emilia Romagna v Taliansku, čo je región textilného klastru, bolo zistené, že technologické strediská neustále vyžadujú štátne dotácie na udržanie sa vo vedúcej pozícii v rámci odvetvia a musia byť umiestnené v rámci klastra a spolupracovať s inými podobnými inštitúciami (Národná rada združenia, 2008). Teda kolektívne učenie vzniká prostredníctvom transferu technológií, inovácií, správneho riadenia nevyslovenej vedomosti a transferu "Know-how", čoho dôkazom je aj analýza v prípade Oresundského biotechnologického klastra, ktorý vytvoril základ vedomostí vysoko kvalifikovaného ľudského kapitálu (Braunerhjelm & Helgesson, 2006).

Analýzou pôvodu klastra vína v Napa Valley v Kalifornii sme zistili, že jeden z prvoradých faktorov bol American's Premier Wine School, vďaka vízií a dynamike niektorých svojich vodcov a členov ju premenil na hlavného propagátora klastra. Klaster vína v Kalifornii sa drží pri živote vďaka stabilite, ktorá poskytuje vzdelávanie cez rôzne centrá vysokých škôl a univerzít. Ako už bolo povedané, prvý vynález a druhý vie ako dostať produkt na trh. Nie je preto prekvapujúce, že v štruktúre klastru tequily akademické programy sa týkajú priemyslu tequily, jej výroby, atď. Neexistujú a ako sme videli v rôznych klastroch boli a sú základným stavebným kameňom, ktorý propaguje ekonomicky založené vedomie. Z tohto dôvodu, v rámci priemyslu tequily to tak neplatí. Napriek tomu univerzitný sektor nie je stratený, pretože teoreticky existuje prepojenie medzi priemyslom a Tecnológico de Monterrey, ktoré v niektorých projektoch spolupracujú s priemyslom, ale ich podiel na trhu je stále nedostačujúci. Žiaľ, neexistuje

žiadna súvislosť s akoukoľvek štátnou univerzitou; len súkromný sektor prispieva do rozvoja tohto odvetvia. Hlavné nevýhody malých kontaktných univerzít-správcoŧ klastra, je to, že úplne prepisuje priamy vplyv, ktorý predstavujú vysoké školy v rámci klastra, ktorých účinky boli analyzované už predtým. Kľúčovým bodom priamej interakcie dopytu klastra tequily je ponúknuť univerzitám.

- Zvýšené udržanie talentu
- Prispôbiť univerzitu k potrebám aktuálneho trhu
- Priama interakcia medzi spoločnosťou a univerzitou
- Podľa aktuálnych potrieb podnikov sú vytvorené ďalšie oddelenia vyplývajúce z výskumných stredísk
- Podporovať podnikateľské aktivity v rámci klastra podľa zmien na trhu
- Keď sa vytvorí inovačné prostredie, ktoré láka zahraničný kapitál

Je zaujímavé, že opakom je nedostatočná dynamika v univerzitnom prostredí platná pre priemysel tequily s výsledkami získanými v Kalifornii, ktorá je príkladom aktívnej spolupráce. Jalisco je dynamický štát v Mexiku a v oblasti vytvárania nových ekonomických aktivít je v popredí Guadalajara (hlavné mesto štátu Jalisco) s dôležitými univerzitnými centrami, medzi ktorými je Monterrey Tech (ITESM). ITESM má veľkú kapacitu na podporu inovácií, podnikania a zamestnania. Avšak v Mexiku všetko úsilie na vytvorenie a rozvoj nových podnikov a technológií bolo orientované k odvetviu priemyselnej výroby, zanedbávajúc poľnohospodársky sektor. Vzdelávacie inštitúcie ako ITESM ponúka vzdelávacie programy pre celkovú kvalitu, zamerané na najvyššie medzinárodné úrovne; avšak Mexiko je krajina, ktorá nepodporuje verejné politiky zamerané na podporu vidieckeho odvetvia. Z tohto dôvodu sme našli v Mexiku skvelé kontrasty, a to prosperujúcu a priemyselnú krajinu, v ktorej vlastníci výrobných podnikov ťažia veľké bohatstvo a vidiecke Mexiko, opustené, ponorené v extrémnej chudobe bez možností. To je dôvod, prečo mnoho ľudí hľadá riešenie v imigrácii do Spojených štátov, aby si našli pracovné miesta a príležitosti, ktoré v Mexiku nie sú vytvorené. Je zaujímavé uviesť si, že najdôležitejšie miestne výhody pre podniky v analýze klastra vína v Kalifornii boli v blízkosti univerzít a to nad ostatnými ako napríklad dostupnosť personálu, blízkosť k príbuzným spoločnostiam, komunikácie, kvalita života a pod.

Čo sa týka štúdia s vplyvom, ktorý by mal mať každý jeden z väčšiny (vláda, podnik, univerzita) v priebehu vývoja klastra počas teoretického cyklu života, môžeme vidieť, že na univerzite má osobitný význam v štádiu rastu a rozširovaní, no štádiá v priemysle tequily neexistovali. Klaster tequily sa nachádza v štádiu rastu.

V klasteri vína v Napa Valley bola dôležitým faktorom skutočnosť, že nedošlo k žiadnej priemyselnej tradícii, pretože by zablokovala otvorenie regiónu smerom k hospodárskej činnosti. No v prípade klastra tequily sa vytvorila zmena ekonomického modelu, pretože ak je pravda, že aj táto priemyselná tradícia bezodkladne zmení model v tom istom čase, z týchto priemyselných dôvodov by to bolo tým impulzom na zmenu paradigmy.

Čo v prípade, že nebolo v klasteri tequily financovanie od rôznych vládnych agentúr s cieľom podporiť vytvorenie klastra, ktoré existuje, bolo by to zvýšilo svoje technologické centrá. Každý výrobca tequily je zodpovedný za financovanie svojich nákladov na výrobu, existujú aj prekážky a to vtedy, keď spoločnosť už dosiahne určitú úroveň, ale domácnosť nie je vybavená žiadnym druhom podpory.

Podľa názoru odborníkov, Tequila, Jalisco stále nie je na úrovni najlepších priemyselných odvetví vo svete vo vzťahu k alkoholickým nápojom. No je však možné vytvoriť konkrétne opatrenia na zlepšenie podmienok vzhľadom na to, že región má veľmi pozitívne aspekty, ako sú priemyselné kapacity vo všeobecnosti a existenciu klastrov, ktoré už pracujú v tejto oblasti, ako napr. klaster elektroniky alebo klaster informačných technológií, z ktorých sa dajú odstrániť skúsenosti na uplatnenie v priemysle tequily.

Čo sa týka akademického sektora v regióne, neexistujú žiadne programy na špecializáciu (štúdijné odbory) so zameraním na výrobu alkoholických nápojov ako v iných krajinách, napríklad v Kalifornii, takže ešte sa nejedná o kritické množstvo odborníkov vo výrobe alkoholických nápojov.

Podnikanie je základom pre inovačné klastre, kde táto inovácia rastie a urýchljuje sa prostredníctvom vytvorenia nových spoločností, a tam kde je vždy nejaká naliehavosť výsledkov vzhľadom na konkurenciu a obmedzené zdroje. Táto kultúra inovácie a nové modely rozvoja klastrov založených na mobilite zvyšuje využiteľnosť podnikových prostredí, kde je mobilný prechod regionálnych bariér na vyhľadávanie medzinárodných spoluprác pred pádom do cyklu.

6. Záver

Metodika zoskupenia riadená Michaelom Porterom, predstavuje zaujímavý spôsob ako sa vysporiadať so štúdiom hospodárskych sektorov, ktoré sa nachádzajú v niektorých regiónoch. Úspech klastrov závisí na jej schopnosti transformovať komparatívne výhody vyplývajúce z ich geografickej polohy a hospodárskych a technologických vlastností, ktoré sa nachádzajú v tejto oblasti, v dynamických konkurenčných výhodách, ktoré sú schopné udržať sa v čase. Je potrebné uznať nedostatky, a to, že metodológia klastrov analyzuje ekonomické sektory a ich umiestnenie, ako aj príliš veľký význam na trhu v oblasti vývoja klastra a odchod do druhého funkčného pracovného obdobia štátu ako subjekt, ktorý podporuje a koordinuje úsilie alebo len povrchne považuje aspekty za rovnako dôležité ako dôvera vzťahov, ktoré sú vytvorené okolo reťazca, vznikajúce z neosobného trhu.

Avšak, táto metodika poskytuje spolu s diamantom konkurencieschopnosti definovanej takisto Porterom, za nástroj na identifikovanie vytvárania určitej skupiny príbuzných odvetví, aby sa točila okolo, vrátane priemyslu, ako aj o solventnosti alebo vzťahoch, ktoré vytvárame vertikálne a horizontálne.

Toto všetko slúži ako základ pre podporu verejných politík, ktoré budú posilňovať tieto odvetvia priemyslu v prospech geografickej oblasti, v ktorej sa nachádzajú. Vytvorenie Regulačnej rady tequily, označenia pôvodu, oficiálnej mexickej normy bolo úsilím spoločností ponúknuť nápoj viac diverzifikovaný s najvyššími štandardmi kvality, v rámci rôznych vrstiev na trhu, stratégie, ktoré boli povolené na nepretržitý rast dopytu aj v roku 2008, ktorý bol rokom krízy. Táto výroba tequily sa nachádzala v poslednej fáze 20. storočia, čo bolo zaujímavé pre rôznych investorov. Hoci, súčasne s týmto zjavným obdobím rozkvetu, situáciou, ktorá existovala už od roku 1999, bol koncom rozkvetu a bez využitia všetkých možných výhod z dynamiky dopytu. Tieto súvisiace body s nedostatočným plánovaním výroby agave a nedostatkom koordinácie a podpory medzi farmármi a priemyselnými výrobcami môže spôsobiť nestabilitu v cene nerastných surovín a v niekoľko po sebe nasledujúcich obdobiach nadprodukcii nasledovanú ostatnými nedostatkami. Toto vytvára nestabilitu v oblasti výrobných nákladov preto, že je to rizikový faktor pre upevňovanie tequilového medzinárodného dopytu. Ďalší horúci bod (hot spot) vzniká vtedy, keď v neprítomnosti väčších kontrol, produkovanie nepravé produkty tequil vysokou škodia zdraviu v tuzemsku i v zahraničí. Toto diskredituje tequilu a obmedzuje jej možnosti pre rozšírenie.

Ostatné externé faktory ohrozujú pád všetkého vybudovaného v posledných rokoch v okolí klastra. Hospodárska recesia, ktorá je od roku 2009, ako aj nedávna daňová reforma schválená mexickým kongresom spomalila trend v priemysle. To naznačuje budúcu spotrebu, ak sa vnútroštátna a medzinárodná ekonomická situácia nezlepší, a ak nie je porozumenie medzi aktérmi v klastri a vládnyimi orgánmi pri hľadaní riešenia problému daní z tequily.

Na záver treba poznamenať, že klaster tequily, dokonca aj s veľkým pokrokom za posledných desať rokov, stále musí vynakladať veľké úsilie v organizácii medzi rôznymi aktérmi na zabránenie vnútorných a vonkajších faktorov, ako sú tie, ktoré boli za posledné roky ovplyvnené ich životaschopnosťou.

Je potrebné sa zamerať na znižovanie cien a zvyšovanie kvality tequily prostredníctvom stratégií, ktoré zvyšujú kvalitu a diferenciáciu nápoja, ako aj vývoz tequily balenej s vyššou pridanou hodnotou, ktorá sa predáva vo veľkom množstve, často pochybnej kvality. Okrem toho je nevyhnutné znížiť opakované výkyvy v dodávkach suroviny pre plánovanú výrobu agave dlhodobo a za stabilnú cenu. Ak je možné zdolať tieto výzvy, upevniť pokrok a korigovať nedostatky, je možné nakopnúť klaster na udržanie si robustných a dynamických konkurenčných výhod v prospech všetkých jeho členov a mexického priemyslu.

7. Použitá literatúra

- 1 ASERCA (Agencia de servicios a la comercialización y desarrollo de mercados agropecuarios) Gobierno Federal 2000
- 2 BRETONES, C. SCHEEL. Transforming an Industrial District into a high-Tech cluster: Assessing the Cosmetic Valley's readiness and benefits, France. Oct. 2011. International Business Research. Vol. 4, No. 4; pp. 3-14. ISSN: 1913-9004. Canadá.
- 3 CRESPO, J. (2011): How emergence conditions of technological clusters affect their viability? Theoretical perspectives on cluster life cycles. European Planning Studies, n° 19, pp. 2025-2046.
- 4 CRESPO, J.; SUIRE, R. y VICENTE, J., (2014): Lock-in or lockout? How structural properties of knowledge networks affect regional resilience. Journal of Economic Geography, n° 14, pp. 199-219.

- 5 MACIAS (1999): El tequila en tiempos de la mundialización. Revista del Gobierno Mexicano para el fomento industrial.
- 6 MINISTRY OF FINANCE (2012) The production of the Tequila as benefic for the industrialization of the region. Revista del Gobierno para el Fomento Industrial.
- 7 PORTER, (1998(; Swann, Prevezer and Stout, 1998; Cooke, 2000; Feser y Bergman, 2000
- 8 PORTER, M. (1990): The competitive advantage of nations. Macmillan, London, UK.
- 9 PORTER, M. (1991): Towards a dynamic theory of strategy. Strategic Management Journal, nº 12, pp. 95-117.
- 10 PORTER, M. (1998). Clusters and the new Economics of Competition. Harvard Business Review , 77- 90.
- 11 PORTER, M. E., & SÖLVELL, Ö. (1999). The role of geography in the process of innovation and the sustainable competitive advantage of firms. The dynamic firm: the role of technology, strategy, organization and regions , Oxford University Press
- 12 SCHEEL, C. (2008). Dinámica de ecosistemas industriales. Mexico: Trillas S.A.
- Scheel, C. (2003). Key Success Factors and Strategies for industrial clusterization in the Latin American region. Monterrey, Mexico: UNIDO WORKSHOP.
- 13 SCHEEL, C., & Gomez, G. (2007). Why the Latin American region has not succeeded in building world-class industrial clusters. Monterrey, Mexico: EGADE, Tecnológico de Monterrey.
- Scheel, C., & Pineda, L. (2008). Building Industrial Clusters in Latin America, Paddling Upstream. Cape Town: 11th. TCI Global Conference.
- 14 SCHEEL, C., & Ross, C. (2007). Strategies for building competitive clusters in Latin America. Monterrey, Mexico: EGADE. 159
- 15 SCHEEL, C., GALEANO, N., & CHARRIS, T. (2010). Investigación sobre la Cadena de Valor de la Vivienda Sustentable y las Alternativas de Participación de Cemex. Monterrey, N.L.: Cátedra de Investigación Cemex-ITESM. Scorsone, 2002
- 16 SCHEEL, D. BRETONES. The impact of technology based clusters on holistic regional development: The case of the Grand Poitiers Futuroscope Technopole. Dec. 2011. Revista Universidad & Empresa, Universidad del Rosario, Bogotá; Vol. 20. ISSN: 0124-4639. Bogotá, Colombia.
- 17 SCHEEL, L. PINEDA. Why clusters have not succeeded in Latin America? How to reverse this trend. Febrero 2009. Clústeres Urbanos 2009; Vol. III; pp.64-81. ISBN: 978-84-9850-214-5. Barcelona, España.

- 18 SCHEEL, M. VÁZQUEZ. The role of innovation and technology on industrial ecology systems for the sustainable development of emergent countries. Dec. 2011. Journal of Sustainable Development. Vol. 4 No. 6; pp 197-210. ISSN: 1913-9063. Canadá.
- 19 SCHEEL. Modelo para el ensamble de ecosistemas de innovación para regiones emergentes. Noviembre 2010. El Futuro de la Educación en Ingeniería. Red Cartagena de Ingeniería; pp. 13-28. ISBN: 978-2-9534170-1-5. Francia
- 20 SECRETARÍA DE DESARROLLO ECONÓMICO, (2004), “Jalisco: La política de desarrollo económico y sus avances 1998-2004”, Aguascalientes, Talleres Gráficos del Gobierno del Estado.
- 21 SÖLVELL ÖRJAN,. (2003) “The Clúster Initiative Greenbook” Bromma Trick AB, Stockholm
- 22 THE GREEN BOOK Appraisal and Evaluation in Central Government. Treasury Guidance LONDON:TSO
- 23 WORLD BANK (2002). World Development Report: Building Institutions for Markets, Oxford: Oxford University Press.

Internetové zdroje:

- 24 Banco Nacional de Comercio exterior <http://www.bancomext.com/>
- 25 Center for research and digital information <http://www.cerdi.edu.au/>
- 26 Chamber of the Tequila Industry <http://www.tequileros.org/>
- 27 High Impact Business Incubator <http://www.ciebt.ipn.mx/>
- 28 Jalisco State Government <http://www.jalisco.gob.mx/>
- 29 Ministry of Economy <http://www.economia.gob.mx/>
- 30 Ministry of Finance <http://www.shcp.gob.mx/>
- 31 Monterrey Tech <http://www.itesm.mx/>
- 32 Municipal Government of Tequila <http://www.tequilajalisco.gob.mx/>
- 33 Napa Valley Vintners <http://www.napavintners.com/>
- 34 Napa Work Force <http://www.napaworkforce.org/>
- 35 National University Autonomous of Mexico <http://www.unam.mx/>
- 36 SMEs project by the Ministry of Economy <http://www.proyecto-pyme.com/>
- 37 Tequila Regulatory Council <https://www.crt.org.mx/>
- 38 United Nations Development Organizations <http://www.unido.org/>

8. Zoznam publikovaných výstupov predkladateľa

BDE Creative cities : the new concept in the economic / Alejandro Chaparro. In Revista Jurídica. - Toluca, Mexico : Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Toluca, 2012. - (2012), [s. 1-5].

AFD Clusters, competitiveness and regional development; the case of Tequila cluster / Alejandro García Chaparro. In Regional economics in new perspectives [elektronický zdroj] : reviewed proceedings : the 3rd winter seminar of regional science 2013, march 20 - 23, High Tatras, Slovakia / editors Štefan Rehák, Miroslav Šipikal, Valéria Szitásiová, Tomáš Černěňko. - Bratislava : Publishing house EKONÓM, 2013. - ISBN 978-80-225-3607-3. - S. 1-15.

AFD Samostatne zárobková činnosť vo vidieckom Mexiku po NAFTA. Odporúčania verejných politík = Self-employment in rural México after NAFTA. Public policy recommendations / Alejandro Chaparro. In Verejná správa v 21. storočí [elektronický zdroj] : recenzovaný zborník príspevkov z medzinárodnej vedeckej konferencie : Bratislava, 21. 11. 2013 / editori Tomáš Černěňko, Veronika Ferčíková, Elena Žárska ; recenzenti Mária Blašková, Tomáš Jacko, Viera Vlčková. - Bratislava : Vydavateľstvo EKONÓM, 2013. - ISBN 978-80-225-3779-7. - S. 1-7 CD-ROM.

BEF Clusters as strategic of competitive advantage / Alejandro Chaparro. - VEGA 1/0207/13. In 4th winter seminar of regional science 2014 [elektronický zdroj] : proceedings : High Tatras, Slovakia, 29th january - 1st february 2014 / editors: Tomáš Černěňko, Veronika Ferčíková, Valéria Szitásiová. - Bratislava : Vydavateľstvo EKONÓM, 2014. - ISBN 978-80-225-3833-6. - S. 1-10 CD-ROM.

BDF The International role of the Euro / Alejandro Chaparro. - Spôsob prístupu: http://www.derivat.sk/files/2014casopisforfin/FF_2014_Jun_Alejandro%20Garcia%20Chaparro.pdf. - Popis urobený: 18. 6. 2014. - Názov z titulnej obrazovky. In For fin [elektronický zdroj] : odborný mesačník pre financie a investovanie. - Bratislava: Fin Star, 2014. - ISSN 1339-5416. - Č. Jún (2014), s. 1-13 online.

BDF The importance of intellectual capital as a primordial factor to success in the new economy/Alejandro Chaparro. – Spôsob prístupu: http://www.derivat.sk/files/2014%20financne%20trhy/Okt_2014_FT_The%20importan

c %20of%20intellectual.pdf. - Popis urobený: 21.10.2014. In Finančné trhy [elektronický zdroj] : vedecký časopis = scientific journal. - Bratislava : Derivát, 2014. - ISSN 1336-5711. - Č. 4 (2014), s. 1-12 online.

9. Summary

The generation of clusters has formed part of the development strategy of first world countries from long time ago (Scheel & Gomez, 2007), in which amply has been demonstrated its multiplier effect for the economic and social development of the regions. According to Porter *"The development of a cluster represents a new and complementary way to understand an economy, organize the economic development and define the public policy"* (Porter. 1998). The technological activities, economic and entrepreneurial tend to be in a specific geographic area which generates patterns of specialization at the national and regional level. On the other hand, the performance of organizations is affected continuously by the conditions that prevail in the environment (Porter & Sölvell, 1999). One of the characteristics of wealth and prosperity of the industrialized countries is the existence of a well-structured industrial system, capable of converting the value of technological innovation in high competitiveness, industrial productivity, attractivity and regional wealth (Scheel. 2003). After observe many attempts of clusterization in different countries, it has been able to determine that the presence of regional industrial conditions, necessary and sufficient for clusterization is vital to the successful generation of clusters. If there are no such conditions, it is necessary to work in the areas of opportunity that offers the region and which are relevant to the development of a cluster in a specific industry. Throughout these last decades, several researchers and critics have been contemplating why some companies, especially those established in nations, regions, or circles of private businesses, have been able to achieve leadership positions at the global level, while at other independent companies developed strategies less innovative. The trigger for these studies was that, some companies located in regions with similar levels of development obtained considerable differences with respect to successful business. Among other things, the companies were differentiated by their ability to improve productive and innovative capacity, but especially in terms of competitiveness. Therefore, the economic development based on clustering has become an increasingly popular for researchers and professionals in this field.

It is important to respond to the following question before analyzing in which stage the cluster is: *How is the current situation of the region in which the cluster is located? And what is necessary to arrange in order to have a successful cluster?*

In Mexico, the Municipality of Tequila in the State of Jalisco and its surroundings denominated *designation region of origin*, offers a great opportunity for have a global class industry related to the production of alcoholic beverages, especially for the production of tequila, symbol of the Mexican identity. One alternative for the successful develop of the industry (one of the best), is the improvement of the cluster, and its analysis in order to determine how the cluster works and its interrelation with all the actors in the industry. Cluster, as Michael Porter defined it, is a “*several formally independent firms and organizations located together that do similar things or contribute to the production of similar products*”. A cluster is a trigger for the economy development and the industry growth. A reason for make an analysis of cluster in the city and reach a gain-gain relationship for both parts (Industry and Region) and lead us to best results.

The economic recession that is live since 2009, as well as the recent tax reform approved by the Mexican Congress has slowed the upward trend in the industry. It envisions a future demanding if the domestic and international economic situation does not improve, and if there is not an understanding between the actors in the cluster and the government authorities to search for a solution to the problem of the tax to the tequila.

It should be noted that the cluster of the tequila, even with the great advances made in the last ten years, still have to make major efforts of organization among its various actors to prevent internal and external factors such as those that have been given in recent years affect their viability. Is necessary to look for decrease the price and income elasticities of the tequila through strategies that increase the quality and differentiation of the drink, as well as export of tequila packaging of higher value-added above that is sold in bulk, often of dubious quality. In addition, it is imperative decrease the cyclical ups and downs in the supply of the raw material for a planned production of agave in the long term with a stable price. If is possible to manage to overcome these challenges, the consolidate progress and corrected the deficiencies, is it possible to achieve a cluster to maintain competitive advantages robust and dynamic for the benefit of all its members and the Mexican industry.

