

## 2. BEGINNING OF THE PROGRAM: “MONTERREY, INTERNATIONAL KNOWLEDGE CITY” (MIKC)

### 2.1 *Conceptual model: the Triple Helix*

Knowledge, encompassing the use of science, technology and innovation, is a fundamental part of excellence and competitiveness, and these are, at the same time, the essence of integral development in any given region. The use of knowledge, however –particularly the activities concerning innovation-, has become an interactive process, where different actors participate by generating and realizing ideas<sup>1</sup>.

**For knowledge related activities to occur systematically and in agreement with regional development plans and strategies, it is essential to rely on a political and economic scheme that favors this practice; a scheme which will, at the same time, promote coordinated interaction and participation of the most important actors and leaders in the process.**

Based on this reality, after considering generic models used to foster knowledge cities and regions in countries of different regions of the world, which have been fully recognized for their results, **the institutionalization of the Triple Helix conceptual model was promoted for the MIKC Program.** The basis for this model is an **alliance of dynamic, coordinated and committed participation between the government, the productive sector and the academic sector,** given that these are the main actors in the innovation process.

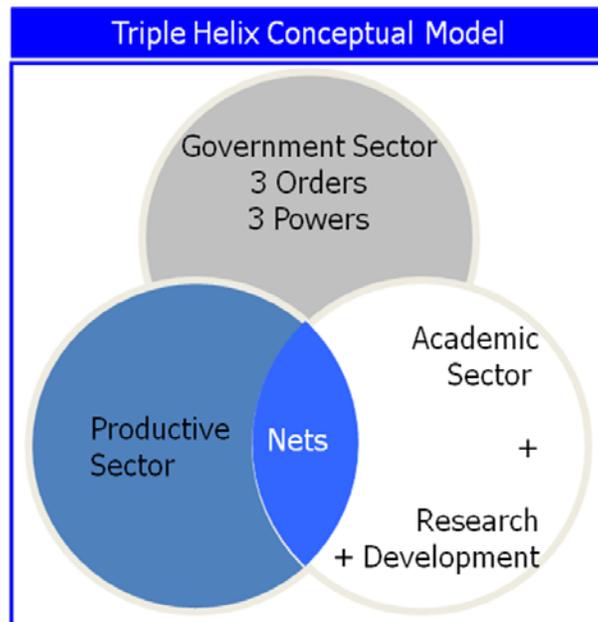


Figure: Triple Helix Conceptual Model<sup>1</sup>

<sup>1</sup> In some publications, Prof. Henry Etzkowitz is known as the original autor of this conceptual model.

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As mentioned by Dr. Juan Pedro Laclette, in April 2008, President of the Mexican Academy of Sciences at the time: *"...scientific development requires not only financing, it also the joint effort toward shared objectives; it requires planning and coordination; it requires the identification of concrete goals in order to focalize those efforts; it requires participation from academy, government, industry and society..."*<sup>2</sup>.

In the Triple Helix model, the three main actors in the region's development become strategic partners, and co-responsible actors, who generate a process in the way of a virtuous circle, under the concept of integral and systemic collaboration networks.

- **The academy, by way of universities and higher education institutes**, generate and spread knowledge, especially through quality education relevant to the region's economy, as well as through R+D+i activities, all of which should be linked to their environment to the greatest possible degree. Additionally, the model promotes that academic researchers become entrepreneurs of their own inventions and technologies or develop alliances with the private sectors, taking advantage of the opportunities of agreement with the regulative framework and existing financial incentives offered by the state<sup>3</sup>.
- **The productive sector**, on the other hand, in coordination with the academic sector, it uses the knowledge generated to explore new business opportunities, and performs its own R+D+i and innovation activities or other actions leading to improve its competitiveness by applying innovation and technology to their products and services.
- **The government**, in turn, assumes an active role designing and applying public policies that support innovation, thus providing the appropriate regulating framework, and generating support and incentives to enable growing environments and conditions that drive the region towards a sustainable and progressive growth.

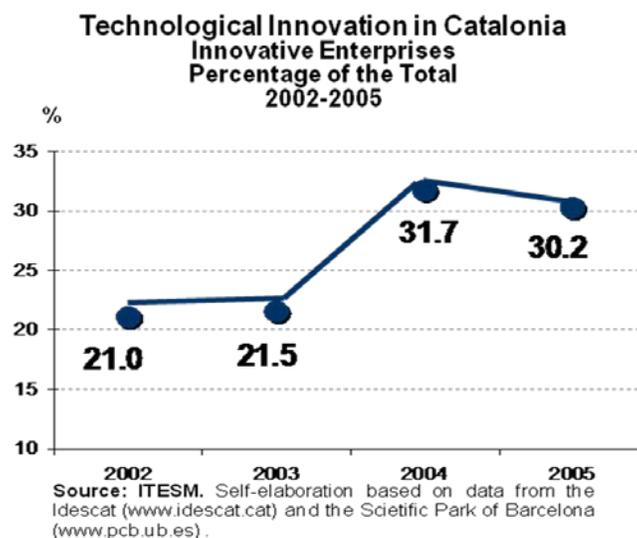
As described in Chapter 1, the state of Nuevo Leon, since 2004, fully engaged in the knowledge economy to significantly increase its society's well-being<sup>4</sup>. What became necessary, thus, was a great alliance between the academic sector, the business sector and the government (state, federal and municipal); an alliance which would enable working under a network framework with a high degree of co-responsibility among those involved in the region's economic and social development.

For the MIKC Program, it was considered that the Triple Helix conceptual model was adequate to institutionalize the collaboration between the different actors above mentioned. Thus, together with government programs, valuable components would be supplied under the premise of searching for public policies, strategies, programs, and support instruments and quantitative and

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qualitative incentives that would enable a successful promotion of the program. The result would be an ecosystem which would promote knowledge creation, its application and innovation as a strategy for development and culture of Nuevo Leon's society.

One of the most outstanding examples of the Triple Helix's effectiveness on increasing the number of enterprises that incorporate innovation and technology to their processes and products is the one developed within the ecosystem of Barcelona's Scientific Park (PCB), in the Catalonia region, Spain. The PCB is committed to the universities being well connected to the economic and social world; that researchers from the University of Barcelona (and other universities in the region) have an entrepreneur vision in the development of their patents and research; that the government drive the project with its economic and legislative support and, finally, that institutions, such as business incubators, be created to boost market incorporations of technology. This model's application enabled 1 out of 3 businesses (30.2%) in Catalonia, during 2005, to be catalogued as innovative, while in 2002, that same ratio was 1 out of 5 (21.0%)



Another region (state) that evolved toward a knowledge economy under the Triple Helix model is Massachusetts, in the United States<sup>5</sup>. The leadership for this transformation was headed by the Massachusetts Institute of Technology (MIT), and it has allowed this region to be ranked and recognized as one of the main knowledge economies and societies in the world. In 2007, the Kauffman Foundation, through its New Economy Index methodology, **ranked the state of Massachusetts as number 1, nationally (global index) and for the categories:**

- **Knowledge jobs**, which includes indicators such as professionals in the fields of information technology; foreign talents; workers' education; manufacturing added value.

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- **Technological Innovation Capability**, which measures the population with Internet access; webpage domains; use of technology in schools and government offices; wide-band coverage for telecommunications, among other variables.

The 2007 State New Economy Index  
State of Massachusetts  
United States  
Ranking

Categories	Score Massachusetts	Average Score US	Rank Massachusetts
Knowledge jobs	17.44	10.00	1 <sup>st</sup>
Globalization (foreign trade)	12.25	10.00	4 <sup>th</sup>
Economy dynamics	11.04	10.00	11 <sup>th</sup>
Transformation to digital economy	12.40	10.00	2 <sup>nd</sup>
Technological innovation capability	17.28	10.00	1 <sup>st</sup>
Global	96.10	62.10	1 <sup>st</sup>

Source: ITESM. Elaborated with data from The 2007 State New Economy Index. Benchmarking Economic Transformation in the States. Kauffman Foundation.

These international experiences set the standards to realize that the state of Nuevo Leon (particularly the city of Monterrey and its Metropolitan Area) had important foundations and advances to promote the MIKC Program through the Triple Helix conceptual model, among which we can mention:

- **Excellent high education institutions nationally and internationally recognized.**
- **Successful local companies, with national and international presence, as well as business networks, which have enabled the state economy to become one of the strongest and most prosperous in Latin America.**
- **Several advances in collaborative work among universities, companies, government and society.**
- **Clearly identified productive activities to be promoted under the precepts of innovation and knowledge, as well as the main technological areas –even though their presences were not overwhelming- to support their growth.**

When institutionalizing the Triple Helix conceptual model, great importance was given to integrating society, for the MIKC Program is strongly oriented towards humanistic growth, which means advancing not only at the economic, social and cultural development fronts, but also with the inclusion and true participation of the civil society in the development and consolidation of the MIKC Program. **The advantage of this integration is to enable the work among the three sectors**

**proposed in the model, strengthened by the active participation of society, all of which may derive in a holistic, integral, inclusive and systemic collaboration.**

On the other hand, because of society integration, the knowledge generated by and around MIKC can also translate into benefits for the society with the development of an infrastructure based on the efficient use of information and communication technologies. This will allow greater economic and social development to be more inclusive.

## ***2.2 Mission, vision and objectives***

### **Mission:**

To increase the state of Nuevo Leon's ability to attract investment and human talent to produce high added value goods and services<sup>6</sup> is the mission of the MIKC Program. With this in mind, the purpose is to promote the generation, transmission or transfer of knowledge and its profitable application, oriented towards the sustainable and harmonic development of the region, through adequate research, design and administration of knowledge alliances and the creation of precise governing strategies<sup>7</sup>.

### **Vision:**

The MIKC Program pursues the vision of transforming Nuevo Leon into one of the most internationally competitive regions, capable of attracting and retaining human capital and talent, to produce high added value goods and services based on knowledge and innovation, and offer quality of life to its inhabitants<sup>8</sup>.

With this vision, the MIKC Program intends, on the one hand, to foster the innovation culture in each and every one of its State inhabitants and, on the other, to increase the state GDP per capita through knowledge industries and activities<sup>9</sup>.

### **Objectives:**

The program to consolidate and promote the State of Nuevo Leon as an international knowledge region was defined, from its beginnings, as one of the five strategic programs included in the 2004-2009 State Development Plan of Nuevo Leon. In the agreement signed in 2004 to promote the MIKC Program, four objectives were ascribed which were to be pursued by the government, as well as by the productive and academic sectors. These objectives are the following:<sup>10</sup>

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- **Promote technological development and the establishment of knowledge enterprises.**
- **Internationally project the quality education offered in the state.**
- **Develop the urban infrastructure required.**
- **Ensure high competitiveness in the government and private sectors as the guiding principle for economic development.**

Additional to the objectives defined for the MIKC Program, there was an agreement to distinguish the following profiles and characteristics in the region (Monterrey, MMA and Nuevo Leon)<sup>11</sup>:

- **Consider its inhabitants as Creators.**
- **Be attractive to Creators from other cities/regions and facilitate their stay.**
- **Be a node of knowledge networks and have high level resources for the training of Creators.**
- **Have instruments to make knowledge accessible to its Creators.**
- **Consider each one of its resources and spaces as opportunities to inspire and generate new knowledge.**
- **Connect its institutions to new urban infrastructure to create a network of innovation generators.**

With this redefinition of the region, the intention was to have transformation surface “...from the ability of association and innovation within each of the citizens, each institution, each organization, each company, each family...”<sup>12</sup>, as mentioned by the Mexican Academy of Science Board of Directors ex-President, Dr. Juan Pedro Laclette, to have a positive impact on the economic and social progress of the whole of Nuevo Leon society.

### **2.3 The initial driving actions**

Ever since the design of the proposal to promote Monterrey as “International Knowledge City”, its advocate, Governor Gonzalez-Paras, has reiterated his commitment to strongly support the scientific and technological development of Nuevo Leon through constant and active participation, in order to make technology innovation a permanent everyday practice, the key element to competitiveness<sup>13</sup>.

In this context, three additional elements were defined as being required and essential for a city or region to be sustainable. These elements are cultural,

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economic and social development<sup>14</sup>. Through these, the goal is to develop the local economy based on innovation and knowledge. As aforementioned, from the beginning of the MIKC Program, the State government has displayed a strong commitment to promote these three elements. Therefore, after incorporating the MIKC Program as a strategic project in the **2004-2009 State Development Plan, the following concrete driving actions were implemented**, designed under the Triple Helix conceptual model.

The participation of society is given an essential value in these actions<sup>15-16</sup>.

**Monterrey: International Knowledge City  
The 14 Promoting Actions  
Phase 1**

#	Promoting Actions
1	Law for the Promotion of Knowledge-Based Development
2	Institutionalization of the Triple Helix Model
3	Creation of I <sup>2</sup> T <sup>2</sup> and COCyTE
4	Strengthening the public budget for Science and Technology
5	Expenditure increase (public/private) for R+D+i as a percentage of the State GDP
6	Definition of the 5 strategic technological areas
7	Support for the New Business Incubators network
8	Creation of Technological Research and Development Centers
9	Technological Research and Innovation Park (PIIT)
10	Foreign investment promotion in technology and innovation areas
11	Collaboration in competence ( <i>Coopetence</i> )
12	Seed capital and risk capital funds
13	Intellectual Property Promotion
14	Boosting education at all levels

Source: Technological Innovation and Transfer Institute.

- 1. Conceive, formulate and enact the first State Law for Promoting Knowledge-Based Development** (*Ley Estatal para el Fomento del Desarrollo Basado en el Conocimiento*) **on 19 March 2004.**
- 2. Institutionalize the alliance under the concept Triple Helix to develop the MIKC Program.**
- 3. Create the Innovation and Technology Transfer Institute** (*Instituto de Innovación y Transferencia de Tecnología, I<sup>2</sup>T<sup>2</sup>*), constituted by a citizen council to guide the development of the MIKC Program. Additionally, to constitute the Science and Technology Coordination of Nuevo Leon (*Coordinación de Ciencia y Tecnología de Nuevo León, COCyTE*).
- 4. Prioritize the science and technology budget, which was achieved by committing more than \$2 billion Mexican pesos of tax funds from 2004 to April 2008 for this purpose.** Additionally, to take advantage of the

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Mixed Funds offered by the National Council of Science and Technology (*Consejo Nacional de Ciencia y Tecnología*), which is a federal program for those states that decide to subscribe to this option.

5. **Decide and commit to fostering an investment of more than 1% of the state GDP in science and technology over the next five years**, beginning at the end of 2004, and establish the goal of exceeding 2% over the next 25 years.
6. **Establish five strategic technological knowledge areas: Biotechnology, Mechatronics, High Information and Communication Technologies (software), Health Sciences and Nanotechnology; and align Nuevo Leon's educational system to these areas**, by means of incorporating growing incentives, so that these knowledge areas be preferably developed in compulsory education, middle-technical, higher and graduate levels. Through these actions, the number of technological professions may increase, which is one of the great attractions in Nuevo Leon.
7. **Create and support a large network of technology-based business incubators**, especially oriented towards supporting entrepreneurs in the micro and small enterprises of knowledge.
8. **Create more Technological Research and Development Centers.**
9. **Create the first Technological Research and Innovation Park (*Parque de Investigación e Innovación Tecnológica PIIT*) of Nuevo Leon, the first in Latin America to concentrate public and private universities, companies and research centers in a single area. The PIIT focuses on main technological areas: Health; Mechatronics; Information Technologies; Biotechnology and Nanotechnology, though they are not exclusive.**
10. **Promote and attract foreign investment from technology-based companies and research and development centers from global corporations.**
11. **Promote a new concept, that of "coopetition", -which means collaboration within competition- to establish strategic activity "clusters", those of which also give a high priority to the training of intellectual capital and the practice of technological innovation.**
12. **Encourage the creation of seed capital and venture capital funds for technology-based projects, with the participation of the private sector.**
13. **Encourage accreditation of innovative projects and inventions, giving special attention to the capital of intellectual property and patents.**

**14. Foster education from basic to higher levels, by strengthening the teaching of science in elementary school, with the collaboration of the main state universities at the higher levels.**

**2.4 First public policies**

After unanimous approval by the representatives of Congress in Nuevo Leon, on 19 March 2004, the Law known as Law for Promoting Knowledge-Based Development, non-existent until then, was enacted. On publication of the law, the MIKC Program began to take shape. Additionally, this judicial support gave birth to an agreement of collaboration between the Nuevo Leon State Government, the *Universidad Autonoma de Nuevo Leon* (UANL), the *Instituto Tecnologico y de Estudios Superiores de Monterrey* (ITESM), the *Universidad de Monterrey* (UEM) and the National Council of Science and Technology (CONACYT); this agreement was signed 19 November 2004. Subsequently, in September 2006, the *Universidad Regiomontana* (UR) joined the initiative<sup>17</sup>.

The objective of the Law is to establish the basis for promotion of knowledge-based development in the region; coordinate actions between the public, private and academic sectors to foster, promote and consolidate scientific-technological development, and encourage the development of a knowledge culture in all arenas of Nuevo Leon society; as well as organize and regulate the function and structure of the Science and Technology Council of the State of Nuevo Leon (*Consejo de Ciencia y Tecnologia del Estado de Nuevo Leon*)<sup>18</sup>.

**This Law is mainly characterized by the following aspects:**

- **Visualizing a planning horizon of up to 25 years, with periodic revisions and updates.**
- **Creating a Strategic Program to Promote Knowledge and Technological Innovation**, which encloses the axes of public policy, priority actions and strategic projects to be carried out in the short, medium and long terms, contemplating a revision and update every three years.
- **Creating the General Council for the Promotion of Knowledge and Technological Innovation** (*Consejo General para el Impulso al Conocimiento y a la Innovación Tecnológica*), with the participation of the official and private sectors.
- **Including, in an innovative and important way, those concerns related to financing the promotion of knowledge and generation of innovations.** In this aspect, several provisions are proposed to strengthen the Mixed Fund created by CONACYT in coordination with the Government of Nuevo Leon and the Ministry of Economic Development (SEDEC); and the creation of a

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new fund, integrated by other local and third party (private) resources to foster knowledge and technological innovation.

- **Setting the goal to be achieved over the next 5 years where the investment in science, technology and innovation in the State of Nuevo Leon will reach 1% of the state GDP;** this will also equal, in subsequent periods, the GDP percentages observed in developed countries regarding this indicator.
- **Including, in the strategic program, an analysis of the situation of Nuevo Leon regarding the main indicators for technological research, development and innovation observed in international organizations of more developed countries, such as OECD; and using the results of these analyses to establish goals, measures, actions and resources necessary for the State to reach, gradually and progressively, the development levels of those knowledge countries and regions.**
- **Creating the Civic Academic Council of Sciences (*Consejo Academico Ciudadano de las Ciencias*), as a body of liaison and consultancy,** so that, more than anything, it may revise and elaborate proposals of inclusion of scientific and technological content in educational programs; and analyze, consider and propose updates for educational programs according to new scientific and technological advances considered a priority for development of the state.
- **Creating the State Information System for the Promotion of Knowledge and Technological Innovation (*Sistema Estatal de Informacion para Impulsar el Conocimiento y la Innovación Tecnológica*).**

Publication of the Law for Promoting Knowledge-Based Development was one of the actions of greatest importance to launch the development and consolidation processes of “Monterrey: International Knowledge City”, for this Law guarantees a long term vision.

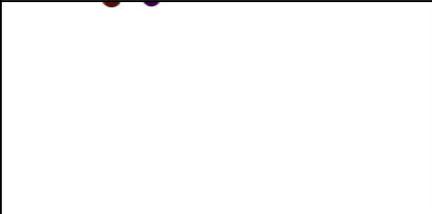
The law transcends the constant changes of the three levels of government – executive, legislative and judicial- and favors the realization of the strategic planning of the next phases of the MIKC Program oriented on a solid, integral and agreed basis. This has proven to be one of the decisive strategies at the international level for the success in the development of Knowledge Cities/Regions, for it enables the achievement of objectives outlined according to a strategic vision.

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## 2.5 First institutions to strengthen the process

The development of a competent, successful and globally recognized knowledge city or region requires a sustained leadership to foster it systematically; the creation of fundamental alliances between government, universities and companies and which integrates society to the actions planned and already performed; and finally, the quick transfer of knowledge from scientific research to the market and the community, which is one of the great challenges.

For these reasons, the most successful cities or regions, which developed based on knowledge, created specialized entities or institutions (in most cases, public-private) in charge of coordinating these efforts and to strengthen collaboration networks among the different agents interacting within the knowledge city or region. Among the most outstanding, we can mention:

Knowledge City/Region (Institution)	Description
	<p><b>Manchester. Knowledge Capital:</b> A strategic association integrated by four universities; 10 local authorities; Manchester business leaders; the Northeast Regional Development Agency. It was created to foster the region's investment and growth through three programs: i) Science City; ii) Manchester is my planet; and iii) An Innovation Investment Fund. <b>Website:</b> <a href="http://www.manchesterknowledge.com">www.manchesterknowledge.com</a></p>
	<p><b>Montreal International:</b> Private organization, non-profit, with the mission to contribute to the economic development of Metropolitan Montreal, and increase the region's international ranking. Its mandates are: i) Increase its FDI; ii) Enable the distribution of strategic talents and human resources throughout the region; iii) Accelerate the development of strategic clusters; and iv) Support innovation development. <b>Website:</b> <a href="http://www.montrealinternational.ca">www.montrealinternational.ca</a></p>
	<p><b>Joint Venture. Silicon Valley Network:</b> A non-profit institution dedicated to analyzing and implementing actions to foster the economy and quality of life of the Silicon Valley region. Its objective is to build a globally successful sustainable region through the cooperation among entrepreneurs, workers, government, schools, and the community. <b>Website:</b> <a href="http://www.jointventure.org">www.jointventure.org</a></p>
	<p><b>The Future Melbourne Reference Group:</b> A group of outstanding Melbourne citizens in charge of directing the project. It is constituted by an heterogeneous group of intellectuals, civil and social leaders and entrepreneurs. Each member is strongly committed to the administration and boosting of Future Melbourne. <b>Website:</b> <a href="http://www.futuremelbourne.com">www.futuremelbourne.com</a></p>

Source: ITESM. Self-elaboration from each Website consulted.

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Through a modification to the Law for Promoting Knowledge-Based Development, in 2005, the **Innovation and Technology Transfer Institute (I<sup>2</sup>T<sup>2</sup>)** was created, an organization which, from that date, rules as General Executive Board for the MIKC Program.

The I<sup>2</sup>T<sup>2</sup> is a decentralized public organization, with its own legal personality and resources, the purpose of which is to organize, manage and operate the MIKC Program. Its mission is to foster and transfer applied research and technological development to fulfill the market needs in order to generate economic growth in the state of Nuevo Leon <sup>19</sup>.

There are models in the world similar to that of I<sup>2</sup>T<sup>2</sup>, such as the *Red Española de Oficinas de Transferencia de Resultados de la Investigación* (OTRI's), the Federal Laboratory Consortium for Technology Transfer, Harvard University's Office for Technology and Trademark Licensing (OTTL) and Rice University Office of Technology Transfer, the last three located in the United States. <sup>20</sup>.

The I<sup>2</sup>T<sup>2</sup>'s main objective is to encourage scientific and technologic research focused on market needs by:

- **Supporting the creation of technological development enterprises**, through incubation, safeguard of industrial property, access to venture capital (or other funds), and help to commercialize new technologies.
- **Creating the Regional Innovation System (*Sistema Regional de Innovación*) with the support of universities and research centers; SME's and their clusters; technological research and innovation parks, and university parks.**
- **Encouraging the creation of intellectual capital** by articulating programs between the academy and knowledge enterprises, and design and research centers; and promoting graduate programs and intellectual seed capital.
- **Managing strategic alliances with national and international organizations from the private and academic sectors.**

**Additionally, the I<sup>2</sup>T<sup>2</sup> seeks to foster the transfer and generation of new products, processes and services by promoting and linking interdisciplinary participation of academy, research centers and productive sectors; as well as encourage and strengthen research and consortia networks with the productive sectors in the strategic areas of Knowledge.** On the other hand, part of its main goals is to encourage a culture of innovation within the society in general and, in particular, in the productive sectors of the State.

The I<sup>2</sup>T<sup>2</sup> functional and operative structure comprises the different managerial and operational fields, and includes an area especially dedicated to the strategic cluster of Information and Communication Technologies (Software).

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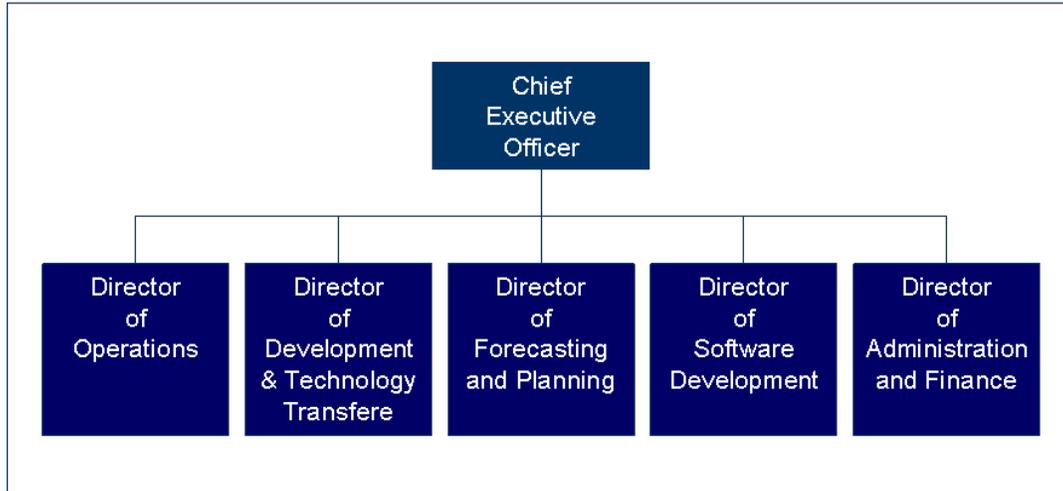


Figure: I<sup>2</sup>T<sup>2</sup> Organizational Chart <sup>21</sup>

**The organic structure of I<sup>2</sup>T<sup>2</sup> consists of a Governing Board (*Junta de Gobierno*) and a Citizen Consulting Council (*Consejo Consultivo Ciudadano*), which includes representatives from the 3 main universities of Nuevo Leon, the Science and Technology Coordination of Nuevo Leon (COCyTE), the National Council of Science and Technology (CONACYT), the Mexican Employer's Confederation of Nuevo Leon (*Confederacion Patronal de la Reuública Mexicana de NL*, COPARMEX) and the Transformation Industry Chamber of Nuevo Leon (*Camara de la Industria de la Transformacion de Nuevo Leon CAINTRA*) through the Competitiveness Center of Monterrey (*Centro de Competitividad de Monterrey CMM*).**

The creation of the I<sup>2</sup>T<sup>2</sup> is a highlight among the main institutional actions performed for the consolidation of the program. It is important to mention that, for the MIKC Program, establishing this institutional mechanism (created as a decentralized organization with sustained leadership), represents one of the most important factors to ensure the success of the program. Because of its main function, guiding and linking research, development and innovation efforts performed by the state government, universities and enterprises to generate new knowledge and capitalize them in the commercial sector, it has the capability and the power to contribute significantly to the advancement of competitiveness, therefore, fostering the development of the region.

Considering that one of the main objectives pointed out by the government of the State of Nuevo Leon for the MIKC Program is to offer Nuevo Leon citizens a quality public administration, which efficiently and integrally supports and promotes the development of the State towards a knowledge-based economy, **additional to the creation of the I<sup>2</sup>T<sup>2</sup>, there have been other decentralized organizations created through the years with citizen participation that**

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**contribute to the development of the MIKC Program.** With its essential purpose –social strengthening- the institutions consolidate and transform Nuevo Leon into a more humanistic, competitive and democratic region, to continue with its development.

The main organizations in this category are the following:<sup>22</sup>

- **Strategic Projects Corporation** (*Corporacion de Proyectos Estrategicos, CORPES*), the creation of which resulted from a citizen poll; its main objective is to transform Nuevo Leon. This corporation's mission is to contribute to the achievement of goals established by the Government of Nuevo Leon in its 2004-2009 State Development Plan.
- **Labor and Productivity Relations Council** (*Consejo de Relaciones Laborales y Productividad*), an organization that concentrates –in a single organization- the State government actions related to the promotion of employment, training of manpower, job safety and health, and labor justice. It gathers the Nuevo Leon National Employment Service (*Servicio Nacional de Empleo Nuevo León*), the Training and Competitiveness Board (*Direccion de Capacitación y Competitividad*), the Labor Inspection Board (*Direccion de Inspección del Trabajo*), the Labor Training and Education Institute (*Instituto de Capacitacion y Educacion para el Trabajo*), the Local Conciliation and Arbitration Board (*Junta Local de Conciliación y Arbitraje*), the Arbitration Court (*Tribunal de Arbitraje*) and the Labor Legal Defense Office (*Procuraduría de la Defensa del Trabajo*). Its mission is to encourage the development of harmonic labor relationships, based on the respect for dispositions in force by the labor policies; and promote a balance between the labor market and productivity growth, in order to favor the competitiveness of production agents.
- **State Citizen Participation for Education Consulting Council** (*Consejo Consultivo Estatal de Participacion Ciudadana para la Educacion*). To channel citizen participation towards education, reconcile their voices into actions and plans to support fundamental topics and strategic projects of educational interest for Nuevo Leon, the Council emerges and functions based on four established guidelines: Teacher Development, Education in English, Digital Education and Educational Evaluation, all of which are directed by commissions integrated by experts in each field. Among its main achievements are the creation of the Educational Evaluation Institute of the State of Nuevo Leon (*Instituto de Evaluacion Educativa del Estado de Nuevo Leon*); the development of the First International Workshop for the Transfer of Educational Best Practices in coordination with the UANL in February 2006; as well as participation with the Latin American Educational Communication Institute (*Instituto Latinoamericano de Comunicacion Educativa*) for the development of the International Encounter on Technology and Knowledge (November 2006).

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**Monterrey: International Knowledge City  
Decentralized Organizations in Nuevo Leon  
Aligned to the MIKC Program**

#	Decentralized Organizations
1	Strategic Projects Corporation
2	Labor Relations and Productivity Council
3	State Citizen Participation for Education Consulting Council
4	Urban Development Agency of Nuevo Leon
5	Agency for the Rationalization and Modernization of Public Transportation Systems
6	Social Development Council
7	Housing Institute
8	State Institute of Physical Culture and Sports
9	State Institute for Women
10	State Youth Institute
11	Environmental Protection and Natural Resources Agency
12	Parks and Wild Life of Nuevo Leon
13	Tourist Development Corporation of Nuevo Leon
14	Agricultural Development Corporation of Nuevo Leon
15	Border Zone Development Corporation of Nuevo Leon

Source: ITESM. Self-elaboration with data from the Technological Innovation and Transfer Institute.

- **Urban Development Agency of Nuevo Leon (*Agencia para el Desarrollo Urbano de Nuevo Leon*) DUNL**, created with the object of designing and applying plans and programs for urban development, considering urban and sustainable development criteria.
- **Agency for the Rationalization and Modernization of Public Transportation Systems of Nuevo Leon (*Agencia para la Racionalización y Modernización del Sistema de Transporte Público de Nuevo Leon*)**, previously known as Sub-Ministry of Transportation (*Subsecretaría del Transporte*), dependent on the Ministry of Urban Development and Public Work of the State of Nuevo Leon (*Secretaría de Desarrollo Urbano y Obras Públicas del Estado de Nuevo Leon*). This agency's mission is to supply the community with an efficient, comfortable, safe and trustworthy world-class public transportation service which can promote the use of this transportation system and foster a decrease in automobile use, enabling a sustainable urban development.
- **Social Development Council (*Consejo de Desarrollo Social*)**, its mission is to ensure every citizen has access to a full life by exercising his/her

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economic, social, educational and cultural rights; and at the same time, to fight against poverty, reduce inequality and promote social justice among the most vulnerable groups.

- **Housing Institute of Nuevo Leon** (*Instituto de la Vivienda de Nuevo Leon*), its mission is to create the necessary conditions and actions to facilitate and offer the population access to dignified and proper housing, accessible to a greater number of families in the State, especially for the most unprotected population and those who can least afford it.
- **State Institute of Physical Culture and Sports** (*Instituto Estatal de Cultura Física y Deporte*), its main objective is to plan, develop, foster and coordinate sports and physical culture programs in the State, as well as promote the participation of society, in coordination with the public, social and private sectors, in the design of a policy which will allow the population, in general, to practice sports.
- **State Institute for Women** (*Instituto Estatal de las Mujeres*), its mission is to create, foster and carry out public policies that enable non-discrimination, equality and fairness of opportunities, of treatment among genders, of decision-making and of access to all development benefits, as well as actions to guarantee full exercise of all women's rights. Avoid violence as a priority and offer alternatives for education, health and employment are actions necessary to evolve in this area.
- **State Youth Institute** (*Instituto Estatal de la Juventud*), its mission is to analyze, plan, design and implement public policies by linking, coordinating and creating programs and actions to increase the degree of competence, quality and scope of the young by identifying and boosting their social and productive development; therefore, it contributes with public, private and social organizations to encourage the integral development of the young in the State of Nuevo Leon.
- **Environmental Protection and Natural Resources Agency** (*Agencia de Protección al Medio Ambiente y Recursos Naturales*, APMARN), The objective of this agency is to safeguard the environment and natural resources through instruments of regulation, plans, programs and projects that will ensure the prevention and control of pollution, as well as the sustainable use of the state's natural resources. It is essential to live in the most favorable conditions for the development of the people: the growth of the city and its population, climate changes, pollution, drought and deforestation are factors which need to be continuously monitored for analysis, control and, ultimately, counteraction. The Agency monitors air quality, among other activities to keep the population informed and reeducate in the commitment of society towards nature, undertaking recycling programs and environmental circles.

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- **Parks and Wild Life of Nuevo Leon** (*Parques y Vida Silvestre de Nuevo Leon*), its mission is to preserve, protect and administer the natural resources and biodiversity, and the flora and fauna resources in Nuevo Leon, through policies and programs that generate income alternatives, recreation and environmental awareness through schemas of sustainable use of wild life, recreational sport fishing, state parks, reforestation and state systems of protected natural areas, for the benefit of society, with an emphasis on the rural areas in the State; and offer quality services, with efficiency and professionalism, which guarantee the preservation of the environment for the present and future generations.
- **Tourist Development Corporation of Nuevo Leon** (*Corporacion para el Desarrollo Turistico de Nuevo Leon*), its mission is to position the city of Monterrey and the State of Nuevo Leon as a venue for events, conventions and exhibits through promotion strategies, investment encouragement and development of tourist service providers, in order to increase the flow and stay of visitors, and generate a greater economic spillover and, consequently, new employment sources for the population.
- **Agricultural Development Corporation of Nuevo Leon** (*Corporacion para el Desarrollo Agropecuario de Nuevo Leon*), its objective is to support agricultural programs with effective actions that will consolidate the State agricultural sector as one in constant progress, in order to raise its added value and improve life conditions in the rural area.
- **Border Zone Development Corporation of Nuevo Leon** (*Corporacion para el Desarrollo de la Zona Fronteriza de Nuevo Leon*, CODEFRONT), its objective is to take advantage of Nuevo Leon's potential and promote the border region as the new gateway between Mexico and the rest of North America by establishing strategies, projects and programs convenient to enable and implement development integrally, in accordance to a logical and priority order. To decentralize the economic activity of Monterrey's Metropolitan Area and enable the State's international trade through the Colombia Border Port, the **CODEFRONT** fosters the development and strengthening of the downtown area of Colombia-Anahuac as an important gateway and customs agency between Mexico and the rest of North America, to foster the development of projects and investments which will have repercussions on the growth of the State and the country.

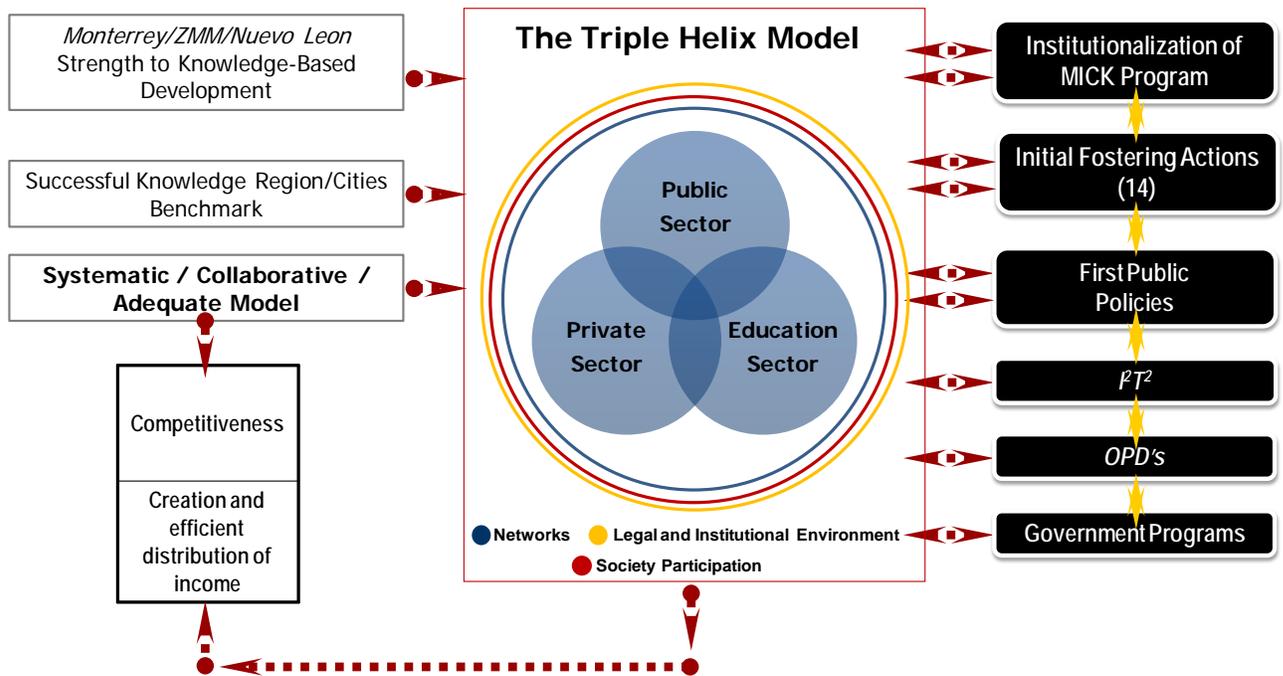
Furthermore, a new route is being promoted to enable access to Colombia from Sabinas-Hidalgo (Nuevo Leon) to improve freight and passenger transport on the Monterrey-San Antonio route, making it easier and faster to cross the boarder through a free access, free of charge, road which will hold a greater number of freight transports and be a new gateway through a model customs agency which will intensify foreign trade between Nuevo Leon and Texas.

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Nowadays, the first 13 Km stretch of highway is being built in the northern area of Colombia. The Corporation will continue its support of the different state and federal entities in the development of this project, as well as with the negotiations needed by the State before the Ministry of Communication and Transportation (SCT). Likewise, it will actively participate in the planning and negotiations to obtain the rights of way. A program of exhaustive promotion has implemented and, therefore, has encouraged industrial and commercial activity at the Colombia Border Port.

2.6 Summary chart

To conclude this chapter, the following chart synthesizes the topics addressed.



<sup>1</sup> The Knowledge-Based Economy. OECD (1996). Available at: <http://www.oecd.org/dataoecd/51/8/1913021.pdf>

<sup>2</sup> Portal del Gobierno de Nuevo León. Mensaje del C. Presidente de la Academia Mexicana de Ciencias, Dr. Juan Pedro Lacleste, durante la Ceremonia de Entrega de Reconocimiento que hace la Academia Mexicana de la Available at: <http://www.nl.gob.mx/?P=leerarticulo&ArtOrder=ReadArt&Article=61379>

<sup>3</sup> Castaños, G (2007, April 30). El modelo Triple Hélice Available at: [http://www.emprendedoresnews.com/notaR/el\\_modelo\\_triple\\_helice-3348-8.html](http://www.emprendedoresnews.com/notaR/el_modelo_triple_helice-3348-8.html)

<sup>4</sup> Monterrey Ciudad Internacional del Conocimiento (2008). Informe de Avances. Available at: <http://www.mtycic.com.mx/avances.html>

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<sup>5</sup> Cooke, Phil. Systemic Innovation: Triple Helix, Scalar Envelopes, or Regional Knowledge Capabilities, an Overview. Prepared for International Conference on Regionalization of Innovation Policy – Options & Experiences, Berlin, June 4-5, 2004

<sup>6</sup> Información obtenida del I<sup>2</sup>T<sup>2</sup>

<sup>7</sup> Ibídem.

<sup>8</sup> Ibídem.

<sup>9</sup> Ibídem.

<sup>10</sup> Convenio que celebran el Gobierno del estado de Nuevo León, representado por la Corporación de Proyectos Estratégicos, y la Universidad Autónoma de Nuevo León, el Instituto Tecnológico y de Estudios Superiores de Monterrey y la Universidad de Monterrey, para impulsar el Programa: Ciudad Internacional del Conocimiento(2004).

<sup>11</sup> Monterrey Ciudad Internacional del Conocimiento (2008). Definición de la Ciudad del Conocimiento. Available at: <http://www.mtycic.com.mx/acercade.html>

<sup>12</sup> Portal del Gobierno de Nuevo León (2007, August 28). Mensaje del C. Presidente de la Academia Mexicana de Ciencias, Dr. Juan Pedro Lalette, durante la Ceremonia de Entrega de Reconocimiento que hace la Academia Mexicana de la Ciencia al Lic. José Natividad González Parás. Available at:

<http://preportal.nl.gob.mx/?Article=58478&ArtOrder=ReadArt&P=leerarticulo&Page=1>

<sup>13</sup> Portal del Gobierno de Nuevo León (2008, April 30). Distinguen al Gobernador José Natividad González Parás como el Gobernador de la Ciencia, el Conocimiento y la Innovación (30.04.08). Available at: <http://www.nl.gob.mx/?P=leerarticulo&ArtOrder=ReadArt&Article=61380>

<sup>14</sup> Monterrey Ciudad Internacional del Conocimiento (2008). Acerca de MTYCIC, Propuesta. Available at: [http://www.mtycic.com.mx/acercade\\_lapropuesta.html](http://www.mtycic.com.mx/acercade_lapropuesta.html)

<sup>15</sup> Portal del Gobierno de Nuevo León (2008, April 30). Distinguen al Gobernador José Natividad González Parás como el Gobernador de la Ciencia, el Conocimiento y la Innovación (30.04.08). Available at: <http://www.nl.gob.mx/?P=leerarticulo&ArtOrder=ReadArt&Article=61380>

<sup>16</sup> Information obtained from I<sup>2</sup>T<sup>2</sup>

<sup>17</sup> Monterrey Ciudad Internacional del Conocimiento (2006, agosto 16). Un proyecto que todos estamos construyendo. Available at:

[http://www.mtycic.com.mx/avances\\_quesehahecho.html](http://www.mtycic.com.mx/avances_quesehahecho.html)

<sup>18</sup> Ley para el Fomento del Desarrollo Basado en el Conocimiento, Decreto Núm. 80 (2004, marzo 19). Publicada en el Periódico Oficial del Estado No. 40

<sup>19</sup> Monterrey Ciudad Internacional del Conocimiento (2008). Instituto de Innovación y Transferencia de Tecnología I<sup>2</sup>T<sup>2</sup>: Objetivos. Available at: [http://www.mtycic.com.mx/i2t2\\_objetivos.html](http://www.mtycic.com.mx/i2t2_objetivos.html)

<sup>20</sup> Presentation I<sup>2</sup>T<sup>2</sup> (15.08.2005)

<sup>21</sup> [http://www.mtycic.com.mx/i2t2\\_organigrama.html](http://www.mtycic.com.mx/i2t2_organigrama.html)

<sup>22</sup> Portal del Gobierno de Nuevo León (2008). Organismos Descentralizados de Participación Ciudadana. Available at: [http://nl.gob.mx/?P=participacion\\_ciudadana](http://nl.gob.mx/?P=participacion_ciudadana)