

Responsibility of the University in the University-Company-State Triad

Responsabilidad de la universidad en la trilogía Universidad-Empresa-Estado

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Abstract

This text is the result of the research project “Strengthening Relationships in the University-Company-State Committees of Cauca and Nariño,” carried out using knowledge management strategies that enabled coordination between businesspeople, researchers, government agencies, and interface institutions. It is divided into three parts to permit an analysis of relationships in the University-Company-State triad and the responsibility of these entities in regional progress based on improving the population’s quality of life.

The social responsibility of the university is addressed in terms of its connection with the environment. Currently, the relationship between the university and society is undergoing a transformation; the university’s mission focuses on training professionals and developing knowledge, making the university relevant to society’s needs. For companies, social responsibility is a requirement of context. It represents an added value and, at the same time, a competitive advantage that allows companies to position themselves in their field. There, the company is surrounded by active and reactive stakeholders that determine the interrelationships needed to evolve, and is supported by the State through public policy strategies in this area.

Keywords: knowledge, competitiveness, regional development, University-Company-State relationship, social responsibility.

Resumen

Este texto es resultado de la investigación “Fortalecimiento de las relaciones de los Comités Universidad Empresa Estado de Cauca y Nariño”, desarrollado a través de las estrategias de gestión de conocimiento que posibilitaron la articulación de empresarios, investigadores, entidades gubernamentales e instituciones interfaz. Se divide en tres apartes que permiten analizar las relaciones en la trilogía Universidad-Empresa-Estado y la responsabilidad de estos organismos en el avance regional a partir del mejoramiento de calidad de vida de la población.

La *responsabilidad social de la universidad* se asume desde su vinculación con el entorno. En la actualidad, las relaciones entre universidad y sociedad se transforman; la misión de la universidad se centra en la formación de profesionales y en el desarrollo del conocimiento, hecho que procura la pertinencia con las necesidades de la sociedad. Por su parte, la responsabilidad social de la empresa es una exigencia del contexto. Se constituye en valor agregado, y, a la vez, en ventaja competitiva que le permite posicionarse en su campo; allí está rodeada de agentes activos y reactivos que determinan las interrelaciones necesarias para su evolución, apoyados por el Estado mediante estrategias de política pública sobre el tema.

Palabras clave: conocimiento, competitividad, desarrollo regional, relación Universidad-Empresa-Estado, responsabilidad social.

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Introduction

It is a priority for 21st-century universities that they be seen, by promoting and undertaking actions to fulfill their social responsibility. For this to occur they must embrace the concept of the university as an organization that, through its substantive functions, provides the conditions for comprehensive training of the person, the citizen, and the professional, and that in terms of research orients the creation, development, and innovation¹ of knowledge to generate specific impacts on society that are different from those created by other organizations such as the company or the State.

Promoting the University-Company-State (UCS) relationship must be a commitment of all sides for the development of the region and the country. The academic community, the business sector and the government at the municipal, departmental and national levels, play the leading roles in giving life to and strengthening this relationship. Its interdisciplinary and inter-institutional nature brings researchers into contact with knowledge about business realities so that, in conjunction with this sector, they can put forward innovative proposals that increase regional competitive capacity and improve the population's quality of life.

This chapter is a conscious reflection on the definition of social responsibility, particularly the responsibility that must currently be fulfilled by both the university and the company. At the same time, it shows the importance of the University-Company-State relationship as a strategy for encouraging the development of innovation through associativity between education, business, and government sectors. This promotes the creation of competitive capacity and the forming of relationships that help advance science, technology, and production processes, thereby generating innovation directed towards increasing productivity and competitiveness through applied research work that has an impact on the progress of society.

The text is organized into five parts:

- The first refers to the concept of Social Responsibility (SR) as a fundamental element in the relationship between any type of organization and the society it belongs to.
- The second presents, from different points of view, the responsibility that the university must assume towards society. It points out that as well as

¹ Innovation: the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization, or external relations (Organization for Economic Co-operation and Development, OECD, 2005, p. 33).

training people, citizens, and professionals who provide quality services, the university's mission is to create and re-create knowledge through research processes relevant to the development of communities, the region, and the country.

- Part three analyzes the responsibility that should be assumed by the company as an organization that undertakes processes of innovation to achieve competitiveness.
- The fourth part identifies the university's responsibility in the face of rapid change in the productive sector, as part of a strategy of regional development; in other words, strengthening the University-Company-State relationship means influencing society's living conditions.
- The fifth part describes the establishing of UCS relationships as a strategy that facilitates the dynamic needed to create an atmosphere of trust between these three sectors, and that allows inter-institutional work for the benefit of society.

Since the first ten years of the 21st century, the UCS interrelation has aimed to bring higher education closer to its social, economic, and cultural context so that it can fully meet its responsibility to the society it belongs to. Today's university, as an educational institution par excellence for the training of human talent, has a social commitment linked to the duty of creating knowledge and innovation. This is part of a coordinated effort with the productive sector in the region and the country that adds value to both processes and services.

What is implied by the concept of social responsibility?

In the globalized world it is common to speak about social responsibility. The State, the Company, and the University naturally approach this concept from their own points of view and with their own interests. Countless definitions link social responsibility directly and indirectly with the concept and practice of sustainable development, with an awareness that the current model of development is unsustainable. Since the last twenty years of the 20th century, the concept of social responsibility has been a work in progress. During its development, multiple ideas and practices have sought to establish relationships and links between different organizations, among which the University-Company-State triad stands out. This relationship requires a new and dynamic set of rules to regulate it, as well as innovation in management processes, new and more flexible financial models, and standards and indicators of social impact.

As Cortés (2011) states in his ethical and rational dual definition, social responsibility demands that different organizations answer for their actions and the consequences for society, groups and individuals affected. It can be clearly seen that 21st-century society presses for organizations to change and assume responsibility for the problems that exist in the different sectors of the social environment.

Obviously, the concept of social responsibility and its practices are governed by certain approaches and processes of organizational management self-regulation that, according to Vallaeys (2007), help the organization locate itself in the society that it forms part of, and assume responsibility for the problems that exist there.

University Social Responsibility (USR)

University Social Responsibility (USR) is now generally accepted in the university community as an important part of their academic reflections and discussions, in relation to their connections with the community and environment. In this context, the relationship between university and society is undergoing a transformation. As Martí (2008) states, the university, through its mission and substantive functions that are focused on training and research to develop knowledge, attempts to make its actions more relevant to the needs of society. Meanwhile, Domínguez (2009) describes USR as the university's capacity to disseminate and put into practice a set of principles and general and specific values aimed at transforming its environment. According to the author, the subsequent impacts can be grouped into four categories: organizational performance, educational performance, epistemologically cognitive performance, and social performance. These categories represent the lines which orient the university mission towards socially responsible management.

Social responsibility is an ethical quality management policy of the University that seeks to align its four processes (management, teaching, research, extension) with the university's mission, values, and social commitment. This is achieved through institutional consistency, transparency, and by involving the entire university community (authorities, students, teachers, administrative staff) in dialogue with the numerous social stakeholders who have an interest in the university performing well, and who need it to effectively transform society so that its problems of exclusion, inequality, and lack of sustainability are solved (Vallaeys, 2007, p. 11).

Vallaeys, De la Cruz, and Sasia (n.d.) maintain that social responsibility seeks to situate the university in society, aligning its substantive roles of management, teaching, research, and extension with its mission, values, and social commitment. According to these authors, this responsibility arises from deep and transparent institutional self-reflection, with committed involvement of the educational community

and all social stakeholders interested in the relevance of the university in an effective transformation of society, examining viable solutions to macro problems in the areas of exclusion, inequality, and lack of sustainability.

Today's university retains the same objective as its 20th-century counterpart, the role of which historically centered on training professionals to raise the education level of the population and improve the results of scientific research. But it must additionally fulfill its commitment to adapt research to concrete economic and social goals that significantly boost the economic and social development that the region needs. Ramírez and García (2010) show that the first university institutions of the Middle Ages conceived the university's roles, roles which are still valid today: "First, research to promote science; second, training to comprehensively develop people; and third, plan the transformation of society" (p. 114). Throughout the ages, the university's mission demonstrates the need for it to contribute, through its work, to the economic and social development of communities and nations.

As one of the organizations in which knowledge is created and re-created, the university is a place where solutions to problems should be put forward and proposals made to optimize existing strengths and potentials. Olachea (2011) argues that as society has become more immersed in the culture of globalization, the university (and systems of higher education in general) has been impelled to connect itself and participate in regional development based on specific strategies linked to the fields of economics, science, and technology with the aim of opening spaces and creating settings for establishing fruitful relationships with the company and the State. And that it is through these relationships that these institutions can realize their potential to contribute to regional development. It should be noted that this contribution cannot and should not be restricted only to economic development, but should also include social, cultural, and environmental aspects.

Now the social responsibility of the university is considered to be something that corresponds to its very nature. The *World Declaration on Higher Education for the Twenty-first Century: Vision and Action*, promoted by UNESCO (1998), stresses that the university's prime objectives include being a factor of development, critical orientation, and transformation for the society it coexists with. It thus has the obligation to connect with its social context to consciously study the problems that affect it and propose knowledge-based solutions operatively and across disciplines. Additionally, through the implementation of appropriate alternative strategies, it must contribute responsibly to the transformation of society.

On this subject, Remolina (2007) puts forward three premises: First, higher education is a social good which rises out of and explains itself in relation to society; in this sense the university belongs to society. The author points out that

the university must not only act with the good of society in mind, but should also be held accountable by society for its work. Second, the university has a political function that translates into the search for harmony between social forces and powers to achieve better conditions for the common good through the knowledge it generates. Third, the university should perform this role of responsibility towards society based on its own identity; that is, based on knowledge. Only in this way can it contribute effectively to the ordering of society, a macro-space that demands relationships with the diverse sectors it consists of.

For Hernández (2010), the university of the 21st century is responsible for shaping men and women with solid ethical and humanistic criteria of solidarity and excellence in service to others; based on research it should develop scientific as well as technical knowledge which can then be used to achieve greater quality of life, a highly social conception of university responsibility. But beyond this generic responsibility, the university should respond to concrete and specific situations in the society it belongs to—it can no longer be indifferent to the real world around it.

According to Restrepo (2008), the university is responsible for situating itself in society and also for getting to know first-hand its needs and identifying with its problems in order to study it from within and make responsible proposals for intervention. Rojas (2008) states that the university must devote its best efforts to the search for knowledge through research and by establishing appropriate sciences and methods, both in social and labor terms; that is, sciences and methods that address the country's actual situation in order to help transform it intelligently and effectively.

Society's demands as to the substantive functions to be fulfilled by the university repeatedly indicate that work conducted inside the university campus should be reflected and projected outside it, in the society it belongs to. In this way, linking itself completely with its environment, it is possible to include the added value that is necessary to the institutional mission, with a dynamic that combines the commitment and effort of academics, researchers, administrators, and the entire university community in order to improve the local population's quality of life. Hernandez (2009) specifies that the degree to which the university opens the doors of knowledge and crosses the lines that separate it from its context to involve itself in the daily life of society, will be the degree to which it contributes to regional development.

In his ongoing reflections on the role of the university, the Jesuit priest Borrero (2002) refers to this institution as a group of teachers and students in a single body, gathered around science and knowledge to serve society. Using a firm epistemological, scientific, and academic approach, he contemplates the university's

responsibility in the process of transforming society. He vehemently asserts that in line with the globalizing trends currently making the world more dynamic, the university must mold professionals with minds open to change and to the progress of an enterprising culture based on principles of association and solidarity. In this culture, the university considers itself, and indeed is, a leading figure in processes of human evolution, implementing strategies that influence the creation of a fair, equitable, participative, and democratic society.

The university's process of development is, to a large degree, the history of the evolution of human thinking. For Bueno (2007), the development of professions out of the courses that the university has offered over time is an example of this change: from Bologna in the 11th century to the university of the 21st century, diverse programs have aimed at improving the economy, markets, and finance sectors, as well as developing technology and knowledge transfer, and, in recent years, satisfying society's needs for applied research, in order to secure better living conditions for people in relation to the environment.

For this reason the university's direct responsibility is to society; the end goal of its academic activity is to comprehensively train men and women so that they can provide a quality service to society. In relation to this idea, Vallaeys (2007) argues that this social responsibility corresponds to a new philosophy in university management that at the same time seeks innovative solutions to the challenges facing higher education in a globalized context with unsustainable development patterns.

In this new social context, the university has a historic opportunity. Its demands have become more sophisticated, there are new conditions in the training of professionals, and it must assume significant responsibility in generating new knowledge that is useful to society. For Arroyave (2009), fulfilling these tasks is a *sine qua non* for a successful university in a knowledge society.

Corporate Social Responsibility (CSR)

When considering the concept of *USR*, a related concept that precedes it must also be addressed: Corporate Social Responsibility (*CSR*). This is defined by De Armas (2001) as the set of obligations and commitments that arise from the impact that corporate activity has on society and the environment. It is the role that the company should play in promoting sustainable development, that is, a balance between economic growth, social well-being, and exploiting natural resources and the environment. For Flores (2009), this requires the company to adopt a responsible stance on the impact of its operations, which guarantees sustainability and economic growth; it must play an active role in overcoming the challenges facing society. Additionally, it must set up socially responsible production chains and, at the same time,

connect itself with sectorial development plans at the municipal, departmental, and national levels. This allows the company to find its place in the country's agenda for developing production and also integrate itself into State policy² in this field.

According to Villalobos (2004), CSR today represents added value and a competitive advantage for companies. Those that start to incorporate or reinforce social responsibility activities now will do so at their own pace and in line with their capabilities; tomorrow they will be forced to do so by their environment. In any case, it is imperative for business, and it becomes a competitive advantage.

Corporate Social Responsibility is the conscious and consistent commitment to comprehensively fulfill the company's purpose, both internally and externally. It takes into consideration the economic, social, and environmental expectations of all participants, and shows respect for people, ethical values, the community, and the environment, thereby contributing to the common good (Cajiga, 2009, p. 4).

CSR is thus the commitment to respond to events or situations. It is the obligation to be accountable to society in general and to interest groups specifically. It is the ability the company must demonstrate to know, comprehend, understand, and provide answers to the range of requests from diverse groups and social classes that make up its environment.

This responsibility, as Rangel (2002) states, is inherent to fomenting the creation, development, dissemination, and innovation of knowledge and technology. Companies are therefore urged to investigate the use and development of environmentally-friendly technologies that also allow improved efficiency and productivity. In this sense the global pact of the company is to combine wealth creation and environmental protection, a goal also set by the university, which acts a meeting point for different sectors and offers the possibility to create and promote strategic support partnerships for large-scale projects with major consequences and impacts. The author asserts that there is no single route for CSR. It involves a long road which must be constantly travelled, these days inevitably in company; that is, inter-institutionally with organizations that have common interests, making it possible to manage knowledge innovation jointly.

² The term "policy" is inclusive and refers to both State policies at national, regional, and local levels, and institutional policy. In this particular case, it encompasses the university's and the company's own policies for obtaining products and results, as well as carrying out their economic activity. Countries with significant experience in developing programs of scientific and technological innovation are by necessity based on State policy.

González & Monleón (2010) state that in an advanced knowledge society, the company does not operate in a passive setting; rather, it is surrounded by active and reactive environments and stakeholders, critical analysts who examine every aspect of the company's performance, and, of course, its CSR compliance. These are communicators who spread information, whether it be beneficial or detrimental to the company. According to the authors, if the company operates in an active environment, this context determines the web of interrelationships needed for its growth and development.

University-Company Relationship (UC)

This link confirms the mission of the university when confronted by rapid changes in the different regional settings, as part of a strategy for national prosperity. The strengthening of the University-Company relationship supports local development, thereby driving the country to improve society's living conditions, which represents the primary objective of the State.

Faced with processes of change, the university identifies itself as a center for knowledge production, development, and innovation. As Fundación CyD (2005) points out, it is an organization capable of responding to the challenges of an economy involved in globalization processes. Among the university's connections with its environment, the link with the business sector stands out as a means of facing the challenges of an economy that is unstable, uncertain, and in constant crisis. The linking of these two sectors is a process that contributes to bilateral development and, specifically, stimulates scientific development.

The relationship between the university and the productive sector takes on worldwide importance insofar as the ability to compete depends on scientific, technical, and technological strengths. Carayol and Matt (2006) point to this as the reason for adopting open models that require effective investment of economic resources in markets that are increasingly global and competitive. The sector's success lies in learning to use knowledge effectively.

The relationship between the university and its socioeconomic setting is more productive when the former has prestige and recognition in its area of influence. According to Fernández de Lucio, Castro, Conesa, and Gutiérrez (2000), the relationship develops due to the quality of professional training and a demonstrated capacity to meet the demands of different sections of surrounding society in scientific and technical fields. From this position the university can stimulate research and development (R&D) and the transfer of knowledge to the socioeconomic environment.

Hernández (2008) points out that the exogenous vision of the 21st century university expresses, among other things, the need for better coordinated activity between higher education and civil society entities and organizations, companies, industry, and government bodies. This must be translated into appropriate and suitable incentives, indicators, and monitoring of results. The endogenous vision of the university's current work, on the other hand, argues that there is a pressing need for a comprehensive transformation of institutional culture including the administrative, academic, curricular, research, and social outreach processes, a transformation that promotes the value of an excellent educational service and its impact on regional development as an inclusive action and commitment.

Development and innovation are key elements for surviving in a globalized context.

The University-Company relationship is established and maintained as an essential part of the social and business network that supports the production of goods and services; in this network the university is a crucial innovative force that contributes to the emergence of a net value added. As an essential institution that creates and transmits knowledge in society, the university does not stand at the fringes while the socioeconomic environment evolves and develops; rather, it interacts with and participates in this environment. In its training role, the university contributes to development in the economic sectors of the society it belongs to and supports training in this environment to achieve optimal production. The University-Company relationship is not unilateral, that is, it is not only the university that contributes to its environment. The environment itself also transfers knowledge and experience to the university as a response to this institution joining its social and economic network (López & González, 2009, p. 36).

The authors point out that University-Company collaboration is positive when each organization preserves its identity. The novel aspect of this partnership lies in the implementation of knowledge and technology that contribute to the relationship and allow the objective to be achieved: quality in the resulting products and services.

A new role attributed to the university in the current world economic order and the evolution of society is that of establishing the University-Company relationship. On this subject, Araújo (2002) states that in assuming this commitment, these two organizations must work hand in hand for the benefit of society in general, through systematic and constant interaction. It represents an alternative for increasing development of knowledge and technology, as well as for adapting professional training curricula and the teaching-learning process to new conditions, and for making scientific research more productive and applied research more relevant.

In this context, the university must modify its activities to facilitate the University-Company relationship, taking into account emergent perspectives in academia and business. Araújo (2002) describes this as an enterprising and competitive university, integrated with the production sector and with a clear policy of research and development. In turn, the production sector must respond to government policies on economic development. This is a university committed to economic development, combining science and technology in order to strengthen its research work; in other words, a university that harmonizes theory and practice.

At the same time, the author identifies the features of the company, the product of a new techno-economic paradigm characterized by vast quantities of information, rapid changes in the mix of products, the ability to adapt, and flexible structures and production systems. This company is an organization that prioritizes the constant training of human resources, creates social wellbeing instead of products or services, and is connected to information networks and interested in sustainable development. It is a company with links to the university, with which it is possible to manage knowledge leading to innovation. In this situation, the university represents an excellent competitive tool.

The University-Company-State (UCS) triad

Globalization affects the university, prompting greater efforts to conduct research that leads to the creation and development of useful and relevant knowledge for regional production processes. The strategic partnership of University-Company-State (UCS) is a constant in focusing innovation processes aimed at the further development of society. According to Almario (2009), the establishing of a knowledge society led to a reevaluation of the model of the university as a professionalizing institution; a possessor of knowledge; a static, theoretical, linear entity; and an isolated center of thinking. Now, the task of the university is considered important insofar as its substantive functions are relevant and help solve the region's problems, providing answers through research that leads to scientific advance.

Processes of sustainable development have shaped the knowledge society in the 2010s, and here Hernández (2011) identifies three fundamental figures. The first of these, the university, unites teachers and students in the creation, development, and innovation of knowledge goods in service of society and, within it, human wellbeing. It is in this educational institution that research processes are generated, which extend human creativity and promote innovative thinking. The second figure is the State, comprising public institutions identified as the agents that orient policy, provide the regulatory framework, and secure the resources needed to enable and stimulate joint work in knowledge innovation between the university and the

productive sector. The State takes into account that its policies and regulations must provide incentives for entrepreneurs, industry, and social agents to establish stable, mutually beneficial partnerships with higher education institutions. Finally, there is the Company, in which innovation is created proactively to offer alternatives aimed at optimizing production and competitiveness in the sector, region, and country. This is done with the conviction that it is the link between university and company that makes knowledge management possible.

Sábato's Triangle, as it is known, consists of the UCS relationship and is represented by a triangle in which government is situated at the apex, and the other two at the two angles of the base. Their relationship, as defined by Vargas (2008), is characterized by interaction. The university ceases to be an isolated agent, initiating a process of innovation through basic and applied research and becoming a space with the capability and need to build relationships with its socioeconomic environment. The university's current mission is to produce knowledge and transform it into wealth through processes of innovation that must tie in with both the knowledge generated by the university and the practice undertaken by business, thus leading to the development of new technologies that drive the economic development of the region.

For this interaction to be successful, Etzkowitz & Leydesdorff (2000) state that the stakeholders must be strong and permanently interrelated. There must be solid intra-relationships among the institutions that make up the sector, as well as strong extra-relationships. Finally, the government should play the role of regulator and finance the initiatives of other innovation agents.

In this regard, the triadic UCS relationship is responsible for moving forward a joint effort in which there is a two-way interaction among stakeholders to coordinate the mission it fulfills for society. Accordingly, knowledge management; experience sharing; and participation in meetings, conferences, forums, seminars, discussions, and other spaces allow individual growth and learning and simultaneously strengthen the UCS relationship and regional development.

In the UCS triad, the forming of links is not an isolated process. It occurs in different contexts and meeting points where multiple actions activate the two-way interrelationship that flows, filters, and penetrates across geographic, cultural, ideological, conceptual, and institutional boundaries. It does this thanks to the substantive purpose of research which, according to Martínez (2004), is able to integrate science, technology, and innovation as required by the productive sector it is related to. It thus becomes an effective instrument for generating scientific, technological, economic, and cultural development for the benefit of society. Arroyave (2009) notes that knowledge is now considered the most crucial factor

in the production process, to the point where it surpasses both capital and labor in terms of importance.

In the view of Robledo (2009), UCS integration is a recent phenomenon of strategic partnering that can be explained through the common factors in University-Company-State Committee (UCSC) experiences in different regions of the country: the nature of the innovation; the commitment and capacity of business; the implementation, with government support, of science, technology, and innovation policies, fundamentally in training researchers at the doctoral level; and major changes to the way science operates through business innovation conferences, associativity, inter-institutionality, and inter- and transdisciplinarity in creating innovation programs and projects. Also very important is the change in researchers' mentality and commitment with respect to the demands of the productive sector, forcing them to provide solutions to real-world problems. The dissemination of knowledge in this field has greater impact when seen in successful experiences in other contexts, rather than in traditional theoretical discourse.

The university, as one angle of the triadic relationship, is characterized by its leading role and its mission in fostering human talent and creating knowledge. But it also seeks to gain relevance through its involvement in innovative activities that produce recognized results for the competitiveness of the productive sector. Only here will 21st-century society equally acknowledge the university's proper role in relevant scientific and technological advances that seek to improve quality of life of the people and open new research opportunities. Consequently, the university must recognize innovation as an interactive function connected to its mission in the proposed relationship.

According to Ramírez & García (2010), products that result from research initiated and conducted in the UCS partnership are slightly different because the transfer of technology requires administrative and legal dealings. It is vital to develop agreements and contracts that cover the commitments and arrangements among participants in the triad studied here. The problem is that the university lacks the regulatory mechanisms to operationalize these relationships and minimize the inherent risk for researchers and knowledge. Researchers indicate that this could become an obstacle for the partnership.

In this relationship, the University-Company-State Committee (UCSC) is particularly relevant. The country requires quality training for professionals and relevant applied research³ that meets the needs of the region and the business

³ Applied research also consists of original work carried out to acquire new knowledge; however, it targets a practical and specific goal (Ramírez & García, 2010).

sector. Strengthening the UCS link is a vitally important strategy for promoting competitiveness. In this relationship, the UCSCs are formed in regional spaces and entities created and organized according to interests and agreements between the universities, their research groups, companies from the productive sector, and State organizations. Their goal is to think about and plan for the region, creating and promoting applied research projects aimed at studying and addressing the technological issues and needs affecting regional companies.

On this subject, Parra (2012) points out that the UCSCs are partnerships between public and private organizations that coordinate their missions to collaboratively promote activities in science, technology, and innovation, and that contribute to the region's competitive capacity. They do this with the understanding that, according to González (2007), the region is able to analyze itself from different points of view, clearly demonstrating that social responsibility is a matter of competitiveness and that regional development is subject to factors of both human and territorial capability.

Here it is vital to highlight that the regions' importance goes beyond the central government's dependence on them to build competitiveness in the country. The UCSCs must make a commitment to help establish autonomy and abilities in the regions, thereby overcoming the obvious historical and legitimized dependencies.

The UCSCs are spaces for organizing a working group with businesspeople, universities, and Government representatives to make the relationship between educational institutions and the productive sector more dynamic and strengthen activities of social responsibility, both in business and university contexts, thereby stimulating enterprise, innovation, creativity, and associativity. This is how the National Ministry of Education sets out and defines the UCSC concept (Arraut, 2010).

As presented in the Colombia Aprende portal (n.d.), the UCSCs have three functions. First, they build relational capital through the Business Innovation Conferences⁴. These are considered to be institutional channels that allow coordinated actions and collaboration among the various stakeholders involved in the UCS relationship within an atmosphere of trust that facilitates processes of collaboration and innovation at the regional level. Second, they transfer technology based on research outcomes from the work of university research groups. And third, it is predicted that in the future they will promote the consolidation of regional innovation systems.

⁴ A business innovation conference is the best example of the interdisciplinary and inter-institutional relationships that arise from the UCS relationship.

Through its actions, the UCSC marks out the road that lies ahead for this triadic relationship. Some of the actions that stand out are: Conducting an inventory of actual applied research capacity in the region in the areas of human resources, science and technology, research groups, projects, laboratories, research equipment, and infrastructure; characterizing the business sector and prioritizing the region's needs; organizing and conducting business innovation conferences to create meeting spaces of supply and demand between existing research groups and the business sector in the region; establishing new partnerships and incorporating key stakeholders from both academia and business to strengthen participative processes in the Regional System of Science, Technology, and Innovation (SRCTI); and relevant human resources training to develop science, technology, and innovation that improve development processes, as well as the implementation of association strategies that create trust between the University, the State, and the Company.

Over the past five years, the UCSC's importance and leadership has continued to grow in the region, as it positions itself as a key player in coordinating different sectors of society, mainly in the relationship between higher education and the company. The definition of the regional profile grants it local knowledge and allows it to accurately identify training and research needs. Likewise, the systemizing of significant experiences is an example of coordinated efforts for the sector, and the recognition of its role in the region's economic development allows it to direct the work of the company, highlighting its leading role in the nation's economy.

The committee looks to promote the research abilities of research groups affiliated with the universities in order to appropriately respond to the needs of the productive sector and create spaces and settings that enable innovation. It does this by combining the efforts of researchers and businesspeople who work together with shared thinking, discourse, and objectives. The end result is the ability to generate ideas and convert them into projects and programs with a focus on innovation.

The UCSC is oriented towards achieving a productive model based on science and innovation. It is anticipated to become the regional entity that drives innovation and knowledge management and enables strategic partnerships for economic development of the regions. The idea is that they contribute to the social appropriation of science and technology, given that it is a current and successful example of applied research, collaborative work, and effective coordination among sectors. It is also anticipated that the UCSC will promote researcher training in order to place company resources and infrastructure at the service of research to find solutions to real-world problems.

Conclusion

In a globalized world characterized by uncertainty, university social responsibility should have a mobilizing quality that brings together the different sectors of society and causes them to converge. It should contribute to the creation of a new point of view in reflections that identify key problems in society, and it should exhort the university to transform its work, beginning with an appropriate curriculum in terms of competence-based training.

The 21st-century university is characterized by: the comprehensive, high-quality training of professionals needed by society and the globalized world; an academic community motivated by the search for knowledge, its creation, development, dissemination, and innovation; the opening of learning spaces based on the quality, commitment, and responsibility of professionals contributing to development in their region and country; national and international recognition and prestige as well as the capacity to adapt to the pace of trends in education and globalization; and a determined contribution to the solving of urgent problems for people in their environment.

With regards to the University-Company-State triad, the conclusion reached in recent times is that for the country and its regions to achieve greater levels of development, the divide between the business and academic worlds must be bridged, and different stakeholders must promote coordinated policies for scientific and technological development. Such development is the greatest generator of wealth and highly trained human capital, and it leads to great leaps forward in development.

Although relationships have historically existed between University and Company, these partnerships must be renewed and strengthened to maintain the level of competitiveness needed for an age in crisis. This will only be possible with healthy coexistence and understanding between the academic and business worlds. Experience shows that mistakes have been made in the University-Company relationship, mainly due to internal administrative processes, the lack of highly trained human resources to conduct relevant applied research, and physical and technological infrastructure that is unable to efficiently respond to the productive sector's needs.

The strategy considered encompasses trained human capital that supports the development of innovation, excellent administration that is open to change, quality services and products, efficient use of technology, and a comprehensive social responsibility strategy. What is missing, however, is a culture of integration among sectors; it is common to find businesspeople lacking any real interest in

forming links with academia. Comprehensive policies must therefore be created and implemented to enable this relationship with the end goal of innovation. The State plays a fundamental role in this process by integrating and orienting, while both the university and the company must visualize the benefits and strengths of this relationship. The matter is open to discussion, taking into account the great complexity surrounding the UCS relationship, a social phenomenon that is in a state of constant transformation and, simultaneously, subject to the circumstances of historical, cultural, political, and economic events occurring at local, regional, national, and global levels.

References

- Almario, F. (2009). Relaciones Universidad-Empresa-Estado: experiencias y visiones desde la Universidad y el Estado. In: A. Guerrero. (Comp.), *Universidad-Empresa-Estado*. Bucaramanga: Universidad Industrial de Santander.
- Araújo, A. J. (2002). Interacción Universidad-Empresa: la nueva función de la institución universitaria. *Revista Ágora* 10, 79-99.
- Arraut, L. C. (2010, December 3). Columna Empresarial. CUEE: Espacios de innovación. *El Universal*. Retrieved from <http://www.eluniversal.com.co/columna/cuee-espacios-de-innovacion>.
- Arroyave, C. E. (2009). La empresa y la universidad en la sociedad del conocimiento. In: Guerrero, A. (Comp.), *Universidad-Empresa-Estado*. Bucaramanga: Universidad Industrial de Santander.
- Borrero, A. (2002). *Simpósio permanente sobre la Universidad*. Bogotá: Icfes, Pontificia Universidad Javeriana.
- Bueno, E. (2007). La tercera misión de la universidad. El reto de la transferencia de conocimiento. *Revista de Investigación en Gestión de la Innovación y la Tecnología. La Universidad del Futuro*, 41, 13-24.
- Cajjga, J. F. (2009). *El concepto de Responsabilidad Social Empresarial (RSE)*. Mexico: Centro Mexicano para la Filantropía Cemefi. Empresa Socialmente Responsable (ESR).
- Carayol, N. & Matt, M. (2006). Individual and collective determinants of academic scientists' productivity. *Information Economics and Policy*, 18, 55-72.
- Colombia Aprende. (n.d.). CUEE: Comité Universidad Empresa Estado. ¿Qué son los CUEE? Retrieved from <http://www.colombiaaprende.edu.co/html>
- Cortés, M. (2011). *La Responsabilidad Social Empresarial en el ámbito de la Discapacidad (RSE-D)*. Dimensión, contenido y tendencias en época de crisis. Colección Barclays Diversidad e Inclusión. Madrid: Grupo Editorial Cinca.
- De Armas, R. (2001). Estrategias para el fortalecimiento del vínculo de la universidad con los sectores productivos y de servicios: caso de la Unidad Docente Nazareno de la Universidad Agraria de la Habana. (Doctoral dissertation). Universidad de La Habana, Cuba.

- Retrieved from <http://www.monografias.com/trabajos75/relacion-universidad-empresa/relacion-universidad-empresa2>
- Domínguez, M. J. (2009). Responsabilidad social universitaria. *Humanismo y trabajo social*, 8, 37-67.
- Etzkowitz, H. & Leydesdorff, L. (2000). The dynamics of innovation: from National Systems and "Mode 2" to a triple helix of university-industry-government relations. *Research Policy*, 29, 109-123.
- Fernández de Lucio, I., Castro, E., Conesa, F. & Gutiérrez, A. (2000). *Una visión crítica de las relaciones Universidad Empresa: el papel de las estructuras de interrelación*. Valencia: Instituto de Gestión de la Innovación y del Conocimiento - INGENIO.
- Flores, J. (2009). *Responsabilidad social y competitiva*. Tercer Congreso Internacional sobre RSE. Universidad Santiago de Cali.
- Fundación CyD. (2005). *Informe CyD. La contribución de las universidades españolas al desarrollo*. Barcelona: Fundación CyD.
- González, C. H. (2007). Desarrollo regional sostenible con responsabilidad social. In: *Universidad-Empresa-Estado. Construyendo región en el Eje Cafetero. Memorias Foro Itinerante*. Manizales, Colombia.
- González, C. & Monleón, P. (2010). La Responsabilidad Social Empresarial (RSE), es posible. *Revista Construcción Valencia*, 13, 34-35.
- Hernández, I. (2008). Tendencias actuales de la educación superior y exigencias al docente universitario en el siglo xxi. *Revista Hechos y Proyecciones del Lenguaje*, 16/17, 234-267.
- Hernández, I. (2009). El docente investigador como creador de conocimiento. *Revista Tumbaga*, 4, 185-198.
- Hernández, I. (2010). *La formación del ethos investigador docente*. (Doctoral dissertation). Doctorado en Ciencias de la Educación. Universidad de Nariño y Rudecolombia.
- Hernández, I. (2011). Prólogo. *Cauca y Nariño frente al desafío de las regiones del conocimiento. Estrategia de innovación en el marco del relacionamiento Universidad, Empresa, Estado*. Universidad del Cauca: Crepic.
- López, R. & González, C. (2009). Universidad y Empresa: ¿Condenadas a entenderse? *Revista Construcción Valencia*, 9, 36-37.
- Martí, J. J. (2008). Responsabilidad social universitaria: acción aplicada de valoración del bienestar psicológico en personas adultas mayores institucionalizadas. *Polis: Revista Académica de la Universidad Bolivariana*, 18, 1-13. Retrieved from www.dialnet.unirioja.es/descarga/articulo/2508265.pdf
- Martínez, E. (2004). *Fundamentos de administración pública del Estado. Organización al Estado en acción*. Ibagué: Universidad del Tolima.
- Olachea, L. F. (2011). *La nueva responsabilidad de la universidad en el desarrollo regional*. Foro Académico IASON. Retrieved from www.foroactivo.com
- Organization for Economic Co-operation and Development (OECD). (2005). *Oslo Manual: Guidelines for Collecting and Interpreting Innovation* (3rd. ed). Paris: OECD Publications.

- Parra, J. H. (2012). *La relación Universidad-Empresa-Estado: una estrategia exitosa en el país. Dirección de Desarrollo Tecnológico e Innovación*. [Slides]. Departamento Administrativo de Ciencia, Tecnología e Innovación, Colciencias.
- Ramírez, M. & García, M. (2010). La alianza Universidad-Empresa-Estado: una estrategia para promover innovación. *Revista EAN*, 8(68), 112-133.
- Rangel, H. (2002). *El empresario debe ser promotor de la Responsabilidad Social Empresarial dentro y fuera de la empresa. Segunda Ceremonia de Presentación de las Empresas Socialmente Responsables en México*. AliARSE, Cemefi. Asociación de Banqueros de México.
- Remolina, G. (2007). *La responsabilidad social de la educación superior. Palabras de inauguración del Observatorio sobre Responsabilidad Social de la Educación Superior*. Bogotá: Pontificia Universidad Javeriana.
- Restrepo, B. (2008). *Política pública sobre calidad de la educación superior y retos de la educación superior hoy*. Medellín: Asiesda.
- Robledo, J. (2009). Las relaciones Universidad-Empresa-Estado: una reflexión sobre la experiencia antioqueña. In: A. Guerrero (Comp.), *Universidad-Empresa-Estado*. Bucaramanga: Universidad Industrial de Santander.
- Rojas, H. (2008). La importancia de las políticas públicas de formación en investigación de niños, niñas y jóvenes en Colombia, para el desarrollo social. *Revista Latinoamericana de Ciencias Sociales: Niñez y Juventud*, 6 (2), 885-906.
- Unesco. (1998). *Declaración mundial sobre la educación superior en el siglo xxi: visión y acción. Marco de acción prioritaria para el cambio y el desarrollo de la educación superior*. Conferencia Mundial sobre la Educación Superior.
- Vallaeys, F. (2007). *Responsabilidad social universitaria. Propuesta para una definición madura y eficiente. Programa para la formación en humanidades*. Mexico: Tecnológico de Monterrey.
- Vallaeys, F., De la Cruz, C. & Sasia, P. (n.d.). *Manual de primeros pasos en responsabilidad social universitaria. Construyendo ciudadanía en universidades responsables*. Red Ética y Desarrollo.
- Vargas, M. (2008). *Enfoque conceptual y metodológico. Alianza Universidad-Empresa-Estado (UEE)*. Bogotá: CUEE-Bogotá.
- Villalobos, J. (2004). *II Conferencia Interamericana de Responsabilidad Social Empresarial. "Del Dicho al Hecho"*. Mexico: BID, Cemefi.