**Science Park Case Study:**

The traditional model of a science park is based on the concept of a “triple helix”, which was initially proposed by Etzkowitz (1993). This model assumes that in a knowledge based society, the potential for innovation and economic development is mainly in the interaction between universities, industry and government. Thus, science parks can be defined as complexes of economic and technological development that aim to promote knowledge-based economies through the meeting of scientific and technological research, business, and government organizations in one place, offering support to the relations between these players. In addition, science parks may harbor centers for scientific research, technological development, the innovation and incubation of new businesses, training, and research, and may have a formal link with (and are usually physically close to) centers of technological excellence, universities and/or research centers (ABDI, 2008). The common infrastructure and the tight integration between the actors in a science park lead to a reduction of risks and costs in the development of new technologies. This type of environment encourages the generation and sharing of the knowledge that is produced, and the aim of turning it into applications that have commercial value. According to Elisa et al. (2013), the main objective of a science park is to attract companies, create startups, foster development activities and technology transfer and act as a central hub to create internal networking, which is fundamental from a scientific point of view. Jongwanich et al. (2013) argue that science parks play a key role in the coordination of the R&D efforts of the actors involved, directly contributing to the technological development of the region, and consequently of the country, in which they are located. The establishment of technology parks is therefore recognized as a strategy for developing high-tech industries, because companies located in these environments tend to be more productive in R&D than others located outside them (Yang et al., 2009). The benefits of the creation of a science park are readily observable in successful cases such as Silicon Valley, Route 128 and the Research Triangle Park, all in the United States, Cambridge Science Park in England and the Singapore Science Park in China; however, the implementation project can be complex because of the differences in the interests of the key stakeholders involved. The interests of key stakeholders are aligned with regard to the economic and financial exploitation of the science and technology produced in the venture, but that there are important differences: for example, in universities and research centers the focuses are on stimulating scientific development and expanding the market for researchers, for financial agents and venture capitalists the objective is to obtain quick financial returns from their investment, and governments and development agencies have an interest in generating jobs and stimulating the local economy.

For Vedovello et al. (2006), the successful creation of a technology park depends on certain key factors:

• The presence of a minimum infrastructure in residential and business areas, with basic sanitation and urbanization, the availability of transport, and telecommunications;

• Universities / research institutes, with a high degree of excellence, already located in the region where the park will be founded; these will be responsible for training and human resources, such as scientists and engineers, and technical training, and for motivating these people to generate, absorb and diffuse a positive entrepreneurial spirit among their peers and students as well as to support the activities undertaken by the companies;

• The presence of companies, in particular small and medium companies, possessing a culture of innovation, with R&D activities as the main driver for their activities;

• Entrepreneurship, which emerges as a result of the combination, quality and availability of the local human resources and incorporates a special dynamism that is focused on technological and behavioral changes;

• The provision of financial resources by government, acting as a catalyst in this process through specific programs or the use of its purchasing power, and also by the private sector (companies, commercial banks and venture capitalists).

Other relevant aspects related to the success of a project to establish a science park are described by Hansson (2007). He highlights the need to stimulate the entrepreneurial culture in universities and other participants by conducting professional development courses, to provide a team with experience in management and always to seek the active involvement of researchers from these institutions in the project. Cheng et al. (2013) argue that, for a science park to be successfully created, it is very important to create formal and informal relationships of synergy between the project stakeholders, especially between high-tech companies and research centers and universities. These relationships can be fostered by the performance of the project management team. From a financial perspective, a science park should be attractive to venture investors, so success depends on identifying people and organizations (public and private) who are willing to allocate financial resources to the project, explaining the possible returns that can be obtained from its creation (Haggard & Zheng, 2013).

**Required:**

From the arguments cited in this section it can be seen that, if the creation of a science park is to be successful, there must be a balance between the interests of the key stakeholders in order to take advantage of their potential and keep them engaged in the project.

1. Identify and list down the stakeholders (Step 1)
2. Classify the stakeholders (Step 2)
3. Create a stakeholder map (Step 3)
4. Place the stakeholders in power interest grid (step 5)
5. Identify the stakeholders involvement using Onion Model (Step 6)