

# The San Antonio Port Authority: Becoming a Leader of Innovation

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**ABSTRACT:** The San Antonio Port Authority aims to develop and implement one of the foremost hubs for innovation in the United States. Once a part of Kelly Air Force Base, which closed in 2001, the San Antonio Port Authority took over and decided to become an innovation hub. Innovation is the development of new technologies such as automation, robotics, and communications, to name a few areas this new technology has influenced. Innovation is at the heart of the Fourth Industrial Revolution that the world is undergoing, which has transformed the world we live in and continues to change how we interact with the world around us (Philbeck and Davis 2019). Innovation is a vital part of growth in a country's GDP; with the rise of broadband internet service as an example, the U.S.'s GDP has increased by over 1.3% for each 10% increase in penetration (West 2011). The Port Authority is building a potential haven for innovation but needs to address some potential issues to maximize innovation. Tech Port SA, the Port Authority's innovation hub, must address the potential conflict between innovators and non-innovator industries. Additionally, it is critical to maintain the balance between different types of innovation and ensure there is not an emphasis on one, which will potentially stifle the other types of innovation even though they have aerospace, applied technology, and more types being added. This paper examines the issues the Port Authority will have so that solutions may be implemented accordingly.

**KEYWORDS:** San Antonio Port Authority, innovation, Kelly Air Force Base, Fourth Industrial Revolution, new technologies, automation, robotics, communications, collaboration, digital, biological, Internet of Things, digital platforms

## Introduction

The world is currently experiencing what Ndung'u and Signe (2020) refer to as the Fourth Industrial Revolution. This revolution is characterized by the fusion of the digital, biological, and physical worlds through the growth and use of new technologies such as artificial intelligence, robotics, the Internet of Things (IoT), digital platforms, wireless technology, etc. (Ndung'u and Signe 2020). Klaus Schwab first termed the Fourth Industrial Revolution to understand how new technology affects the world's population from the start of the 21st century, from social norms to economic development (Philbeck and Davis 2019). The fourth industrial revolution is further used to explain how new technology drives the transformation of all industries and each part of society (Philbeck and Davis 2019).

This boom in technology presents both significant opportunities and challenges for companies as they strive to become leaders in technological innovation or to integrate the latest advancements into their operations. New technology like IoT is crucial to companies as it allows for analyzing various data to get important information quickly. For example, Amazon is streamlining its search function online for users so that they see recommended items they would want and not necessarily realize they want them until the recommendation is put in front of their faces (Marr 2021). This illustrates the dynamics of the Fourth Industrial Revolution, where the biological element (the customer), the physical element (their phone or computer), and the digital element (the Amazon website) converge seamlessly to produce a cohesive outcome. One such company is the San Antonio Port Authority. The San Antonio Port Authority aims to create an innovation hub that will be one of the cornerstones of this revolution. It is called the Tech Port SA (Port San Antonio 2020a). Tech Port SA is heading towards becoming a beacon, enabling many innovators and companies to create even better

technology. To this end, Port San Antonio has the challenge of threading its existing industry with the new campus to become a central innovation hub. Port San Antonio will also have an issue getting the disparate groups to collaborate rather than just focusing on their agendas.

### **The Port Authority's History**

Since its inception, the San Antonio Port Authority has been looking toward the future and has attempted to make its name synonymous with innovation. To understand the underlying reason for this, one must look at the roots behind the company, which started with Kelly Air Force Base, established in 1917 (Port San Antonio 2020c). The San Antonio Port Authority started when Kelly Air Force Base closed its doors in August 2001.

#### ***Kelly Air Force Base Origins***

Kelly Air Force Base started in 1909 when Lieutenant Benjamin D. Foulois took a few men and an aircraft designated "Aeroplane Number 1" to San Antonio to conduct test flights. Lieutenant Foulois was trained by the Wright Brothers when the Army saw the potential of the new "Aeroplane" and was tasked with making it his own (Port San Antonio 2020b). The problem with the early test flights of airplanes was the many crashes. One incident resulted in another of Foulois's group, an Army flyboy named George E. M. Kelly, dying. Consequently, the budding flying school they were building was put on hold until January 11th, 1917, which resulted in the formation of Kelly Field (Port San Antonio 2020b). Shortly after the formation of the field, the U.S. joined World War 1, and the field grew from just four "airplanes" to 326 squadrons (Port San Antonio 2020b). Kelly Field was not just a flying school for the army but expanded, becoming a central economic and labor hub for the area until 1995, when it was scheduled to be shut down.

#### ***The Transition Period***

In 1995, the decision was made to close the large Air Force base and flight school due to the Base Realignment and Closure Commission (Port San Antonio 2020c). This was unfortunate news for the thousands of employees who worked at the base, as their time there was limited. There was also a need to ensure the base's legacy was kept, as it was one of the largest employers in the area and an economic powerhouse. As a result of this concern, Port San Antonio was created as the base's redevelopment authority. One of the first actions of the Port Authority was to bring in companies to supply jobs for the people being displaced. Thus, Lockheed Martin, Boeing, Chromalloy, and more were brought in (Port San Antonio 2020c). This was perhaps the most significant move the Port Authority could do as it provided the desperately needed transition for the former employees without breaking its economic power during the transition.

#### ***The Tech Port and More***

The Port Authority has contributed over \$5 billion yearly to the local economy in the past two decades. The Port Authority created a complex of over 750,000 square feet to bring in new contractors, tech companies, and innovation in 2008 (Port San Antonio 2020b). A part of this massive project is the Tech Port SA, which is to become a new hub for technological innovation. Tech Port SA is the vision of the Port Authority to promote innovative technology solutions to many different industries, including aerospace, energy, defense, cybersecurity, and more (Port San Antonio 2020a). The new campus will also include a museum showroom, co-working spaces, and a conference center to allow companies and individuals to collaborate to produce innovations. This makes the Port Authority a unique mix of direct and indirect innovation.

### ***The Port Authority and Innovation***

As mentioned, the San Antonio Port Authority is developing an innovation hub to become a center for innovation in the country. According to Katz and Wagner (2014), an innovation center is essential to a community for a few reasons:

1. Innovation districts further cities' and metropolitan areas' ability to grow jobs in ways that align with disruptive economic forces and leverage their distinct economic position.
2. Innovation districts can specifically empower entrepreneurs as a critical vehicle for economic growth and job creation.
3. Innovation districts can grow better and more accessible jobs during rising poverty and social inequality.
4. Innovation districts can reduce carbon emissions and drive denser residential and employment patterns, as there is growing concern about environmentally unsustainable development.
5. Innovation districts can help cities and metropolitan areas raise revenues and repair their balance sheets at a time when federal resources are diminishing and many state governments are adrift.

For these reasons, the San Antonio Port Authority has shifted to use the vacated landscape when the Kelly Air Force Base closed. The Port Authority council used its foresight to realize that replacing the area with the highest bidder companies would limit future growth potential. Thus, the Port Authority council has started to develop the innovation center and bring in companies that focus on innovation to boost jobs and economic growth and make an innovation mecca that will continue to inspire innovations for years to come (Progress Report, 2020). This also pays homage to the Kelly Air Force Base, which, over its storied history, stood at the forefront of several different types of aviation innovations, from training, new components, and aircraft design to testing innovations (Port San Antonio 2020b).

### **The Industry for Innovation**

It should be mentioned that innovation is a booming industry. To prove this, look at a few facts from Purcell (2019), “look at the facts:

- 90 percent of the world’s data has been created recently.
- More than 570 new websites are created every minute.
- 8 billion devices were connected to the Internet in 2020.”

Looking at these numbers of a couple of new technologies, these are significant numbers; thus, new technology is essential. By looking at the fact that 8 billion different devices will be attached to the internet for users to stream videos, make calls, surf the internet, utilize social media, play games, and more, there must be a booming industry of innovation to keep up with the demand (Purcell 2019). This is something that Tech Port SA is trying to capture as they are promoting collaboration, education, and exposure to different innovations to keep the fourth industrial revolution progressing. Another example to be pointed out would be a study from 1980 to 2006 that showed an increase of 10% in broadband, with 1.3% to a high-income country’s gross domestic product (GDP) and 1.21% to other countries’ GDP (West 2011). Considering that the GDP of the United States is over \$20 trillion, the increase would be approximately \$260 billion, which is an enormous market for companies to take advantage of (West 2011). The Port Authority not only wants to increase its market share but also wants to increase the speed and quality of innovation, which presents its problems.

### ***The Success of Project Tech***

The San Antonio Port Authority has already created a campus to house the new tech center and has recently finished a building called Project Tech – Building 1. The council did a great

job scouting the various innovation groups that applied for space in the building and bound it to the overall cybersecurity theme. The innovation that will take place in this building will revolve around the cyber security theme and be led by Lockheed Martin, Consolidated Analysis Center (CACI), Cyber Net Force (CNF) Technologies, and Northrup Grumman (Port San Antonio 2020d). These companies are a great fit as they all have backgrounds in cyber security, innovation, and defense contracts, allowing for a synergy that will only make their achievements more remarkable. These are not the only companies sharing the collaborative space, but they are the leaders of the building and provide an overall goal and example for the other companies to utilize. Building 1 was a significant first step in the Port Authority's project, but they faced more significant challenges.

Of the following two areas for development, the new tech center and building two have been completed (TECH PORT SA 2024). The problem here lies in the mixing of different innovators with different goals that could potentially cause issues to the utopian society that is currently in place as more areas are sectioned off. This would result in having different groups with different goals trying to access the same resources that the campus will provide, such as conference space, meeting rooms, building spaces, parking, and even personnel. How does one control all these variables to prevent the conflict that can potentially arise? What happens if non-innovation companies are added in? The simple answer is that it could be difficult for the Port Authority to do so. While Tech Port SA is still in the early stages of growth, there are enough areas to give rise to conflict that have already been filled, such as Buildings 1 and 2, the Roberson Building, the lab, and the tech center (TECH PORT SA 2024). These buildings are considered cybersecurity, DOD, and applied technology innovation centers. The innovation center should encompass a technology area, museum, food court, showroom, and collaboration space. This area is meant to draw individual innovators and expose students and children to the new technology (Port San Antonio 2020d).

### ***The Problems of Tech Port SA***

The main issue for the Port Authority and Tech Port SA is managing the disparate groups for non-innovative industry and innovators so that everything flows smoothly. As the project stands, an area for innovation has already been established where the new center and buildings are going up. The problem is that it is intermixed with other disciplines and types of groups, as shown in Figures 1 and 2. When looking at the two layouts for the Port Authority, the layout was done haphazardly, fitting the innovation buildings wherever they could rather than establishing an area to locate similar discipline groups together so that collaboration is more effective (Port San Antonio 2019). The mix of different groups could also cause all the previously stated issues, resulting in a conflict that must be managed carefully. The aerospace and innovation groups would inevitably have some cross-over, being in such proximity that something needs to be done to put actions in place to head off the oncoming issues (Port San Antonio 2020e).

The next issue for the Port Authority is ensuring that they keep innovations growing. Tech Port SA is doing a great job adding more structures to the area to house new groups of innovators, specifically in cybersecurity. However, Tech Port SA is not focusing enough on other types of innovation even though it is claiming to be an all-inclusive innovation hub (Port San Antonio 2020d). They say this is because the innovation center is built for collaboration and showcasing. The Port Authority has also brought in multiple companies for applied technology and aerospace. Still, it has not developed a building to serve as a collaboration hub like they have for cybersecurity (Port San Antonio 2020d). This is an issue as, to be an innovation hub, Tech Port SA needs to have more collaboration buildings to allow for the mingling of ideas and designs.



Figure 1. Layout of Port San Antonio (Innovation)

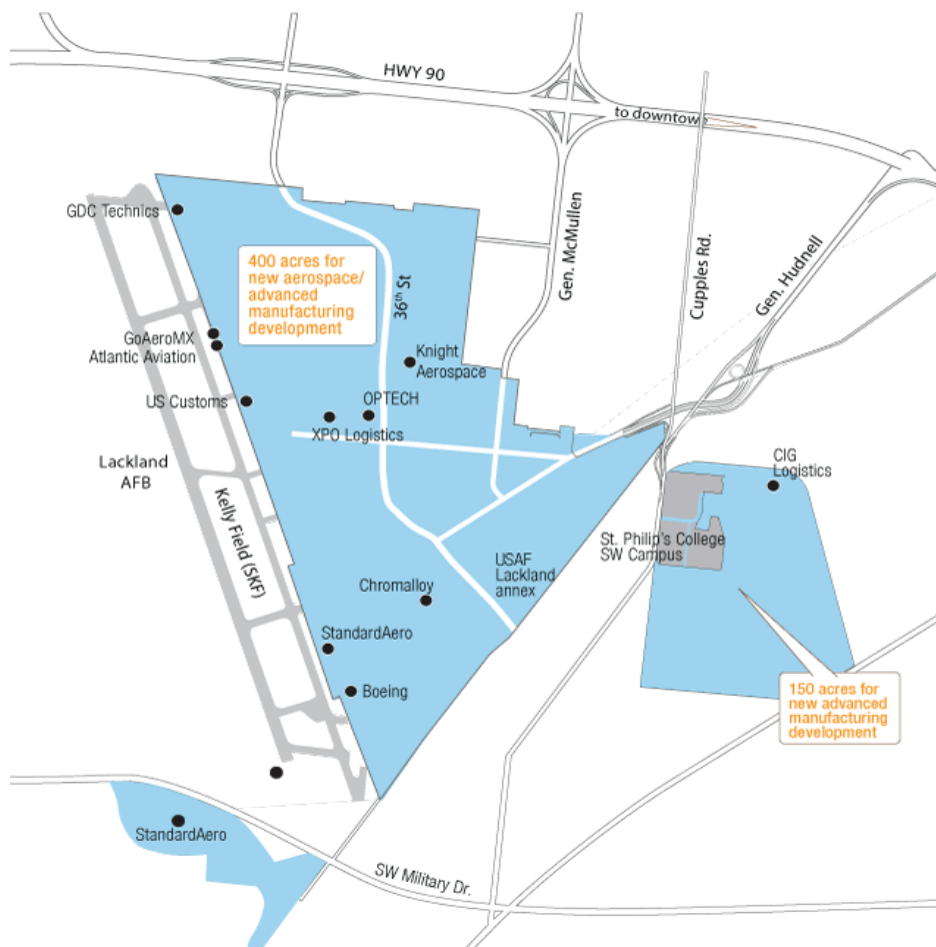


Figure 2. Layout of Port San Antonio (Aerospace)

## Conclusions

In conclusion, the San Antonio Port Authority has taken significant strides in becoming a leader in innovation. Its focus on technology and sustainability, as well as its partnerships with academic institutions and private companies, have positioned it well for continued success in the future. By embracing innovation, the Port Authority is improving its operations and contributing to the San Antonio region's economic growth and development. The Port Authority needs to continue being watchful of any potential issues outlined in this article so they can address them before they become problems.

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