Increasing Airport Revenue:
an interactive tool to promote sustainable revenue streams

September 2015

Michael Toth               Ryan Houston
Joe Foster                    Leah Henderson
Increasing Airport Revenue: an interactive tool to promote sustainable revenue streams

Project Team:
Michael Toth - J.A. Watts, Inc., mtoth@jwincorporated.com, 630.379.1518
Ryan Houston - J.A. Watts, Inc., rhouston@jwincorporated.com, 773.992.7560
Joe Foster – Panther International, Inc.,jfoster@pantherinternational.com 727-556-0990
Leah Henderson – DOWL, lhenderson@dowl.com 907-746-7600

Thesis:
Provide airports a tool to assist in increasing revenue, thus becoming more self-sufficient, through non-traditional revenue generating practices.

Key Points:
• Assist airports in generating additional revenue through non-traditional revenue streams, in turn making the airport more self-sufficient.
• Encourage collaboration and create awareness of proven forms and practices of revenue generation through sharing data, and best practices of past successful projects.
• Increase airport revenues therefore lessening tenant costs and increasing desirability of tenants to establish operations at a given airport.

Abstract:
It is no secret that airports are constantly seeking to generate more revenue. By exploring alternate, non-traditional, yet sustainable forms of revenue, airports can become more self-sufficient therefore lessening their dependence on standard practices of revenue generation. Migrating away from these common practices and the reliance on tenant based revenue can alleviate the burden placed on those tenants, therefore making a particular airport more appealing to others and driving occupancy higher. It will lower the barrier of entry and open opportunities for airports and in turn local communities to grow and flourish. With growth comes the necessity for larger and newer facilities which can be achieved through the airport’s ability to utilize capital funds and state and federal grants to enhance the airport, expand terminal areas, procure capital assets, and extend the useful life of existing assets. While alternate and sustainable forms of revenue generation have many benefits, the conveyance of information and best practices in order to promote these practices is greatly lacking.

In order to implement alternate, sustainable forms of revenue generation, a great deal of guidance and collaboration needs to be established among the airport community, especially among airports of similar size. Establishing this collaboration through an online interactive tool that assists in creating awareness, providing best practices, and guiding an airport to the most effective non-traditional revenue generating stream will greatly increase airports ability
to be self-sufficient. This tool will provide a database to not only provide information, case studies, and best practices, but will guide the airport through a series of questions and prompts. This will then populate multiple solutions of generating alternate forms of revenue tailored to that unique airport with proven historical data for reference. Characteristics taken into account may include airport size, number and type of operations (passenger, air carrier, cargo, and general aviation), location, available space/land, historical data, level of revenue sought, and growing challenges in the region. Once results are generated airports can assign weighted scores to particular practices, provide comments and feedback, create custom profiles, share documents and case studies, and save and print search results.

Increasing revenue through non-traditional methods increases the self-sufficiency of the airport. Providing this interactive tool will serve as a resource for airports to collaborate, create additional streams of revenue, and decrease the burden on tenants thus making the airport more attractive and stimulate the local market promoting further growth.
Increasing Airport Revenue:

an interactive tool to promote sustainable revenue streams

Michael Toth
Ryan Houston
Joe Foster
Leah Henderson

September 2015
The Problem

In the mid-2000s nationwide airport capital needs were estimated at approximately $14.3 billion per year, according to the Capital Needs Survey conducted by Airports Council International–North America. Although the Airport Improvement Program (AIP) administered by FAA was at historically high levels, a gap of $10.8 billion in needs still existed. This gap existed prior to the recession, economic downturn, airline mergers, and pilot shortages. These factors expanded the gap in funding levels leaving airports with even less operating and capital funding. To continue to prosper in tough economic times airports have sought to diversify their revenue sources through non-aeronautical sources.

Most public use airports are owned and operated by a public entity such as a Port Authority, Airport Authority, or City/County. Airports identified in the National Plan of Integrated Airport Systems (NPIAS) receive capital funding from the Federal Aviation Administration (FAA). Airport’s typical capital funding sources include:

- Proceeds of bonds and other forms of debt
- Passenger Facility Charge (PFC) revenues
- AIP grants
- Internally generated capital resulting from retained airport revenues
- Security grants from TSA
- State grants and local financial support

The FAA spent $3.4 billion in 2000 and $3.2 billion in 2014 in AIP funds. This funding must be used for specific approved capital projects such as airfield improvements. Operating costs must be recouped through user fees, non-aeronautical revenues, and/or subsidies from the airport sponsor.

Table 1. Nationwide Airport Revenue Breakdown in 2014

<table>
<thead>
<tr>
<th></th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Aeronautical</td>
<td>$8,637,593,142</td>
</tr>
<tr>
<td>Passenger Aeronautical</td>
<td>$8,625,255,325</td>
</tr>
<tr>
<td>Non-Passenger Aeronautical</td>
<td>$1,880,082,424</td>
</tr>
</tbody>
</table>


Airports typically rely on 45% of revenue from passengers and 10% of other aeronautical sources such as non-commercial aircraft landing fees, hangars, and fuel fees. Airports receive 45% of their revenue from non-aeronautical sources. Airports frequently lease excess land for agriculture purposes and establish business parks with non-aeronautical offices to increase revenue and cover operating expenses or to fund additional capital projects.
As shown in Table 2, Airport’s operating revenue marginally exceeds expenses nationwide leaving little to reinvest in additional capital projects.

Table 2. 2014 Nationwide Airport Operating Revenue vs Expenses

<table>
<thead>
<tr>
<th>Total Operating Revenue</th>
<th>$19,142,930,891</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Operating Expenses</td>
<td>$18,667,614,088</td>
</tr>
</tbody>
</table>

Understanding the Interactive Revenue Tool

Concept:

The Airport Sustainable Revenue Tool (ASRT) is an online database that will collect facility and project information with the intent of sharing ideas and best practices for increasing non-aviation revenue. The ASRT would be an online tool accessible to any airport users who wish to submit their projects to the database, or look up ideas for projects at their facility.

NOTE: The current website is only for demonstration purposes, and is meant to show initial proof-of-concept. It is not a fully functioning website at this time.

Walkthrough:

The website is currently located at the following link: http://53k7by.axshare.com/

When you land on the website, you will be taken to the Home Page, which explains the purpose of the tool and allows you to select either the Data Entry or Lookup Tool option to get started (see Figure 1).
The **Data Entry** page allows you to input information about your facility and your project(s) so that other airports users can have access to them, and potentially get some ideas about projects for their own facility. **Data Entry** actually consists of two pages. The first page is where you will enter information related to the size and activity levels of your facility. This information will be stored in a database along with your project so that airports of similar size can query them. Information such as annual Enplanements, Operations, Passenger Volume, Cargo Tonnage, and Airport Acreage can all be entered here. When you are finished entering your facility information, select **Next (Project Information)** (see Figure 2).

![Data Entry Tool (Page 1 of 2)](image)

(Figure 2)

The second page of **Data Entry** is where you will enter information related to the project that you wish to share with other airport users. There is both qualitative and quantitative information collected on this page. Data estimates for Initial Investment amounts, Estimated Annual Revenue, Estimated ROI, and Actual Annual Revenue Growth (if known) will give other users a sense of how much the project cost to implement, and the level of return on that initial investment.

There are also text fields where more narrative information can be added. You can enter information about the approach that your facility took to implement the project, as well as lessons learned/best practices. You can use the Tag(s) field to enter specific subjects associated
with your project (terminal, environmental, concessions, fuel, etc.) These tags will allow future users to search for specific words or phrases relating to projects in the database.

There is also a document uploads section where you can upload any associated documentation that you would like to share with other users. Associated documents might include a photo of the project, a pdf copy of a study, or an excel sheet with project financials.

When you have entered all of your project information, select **Complete (Submit Project Information)** (see Figure 3). The ASRT will take you back to the Home Page, and your project will now be stored in the database for future users to search.

The **Lookup Tool** allows you to query information submitted to the database by other airport users. You can query information related to the size of the facility so that the search returns projects that have been completed by facilities of similar size to your own. On this page, you can search annual Enplanements, Operations, Passenger Volume, Cargo Tonnage, and Airport Acreage. When you are finished entering your search criteria, select **Generate Results** (see Figure 4).
The Results page displays all of the projects in the database that have been uploaded and entered by other airports users, based on the criteria you have entered related to the size of the facility. On the example site, there are results from Chicago-Midway, Tallahassee Regional, and Atlanta-Hartsfield Jackson International. To view more details about any of these projects, you would select View next to the project and the database would bring up additional information. You can also view any associated Document Uploads related to the project by selecting the .pdf or .jpg icons in the Document Download(s) column (see Figure 5). When you are finished viewing the projects, select Return to Homepage if you would like to enter or query any additional information.

These results are drawn from a master database which houses all projects and is updated with new information as soon as it is available. Please see the attached sample database.
Additional Thoughts/Future Improvements

The current version of the website is designed to show proof-of-concept. Our team came up with the most likely search criteria based on previous aviation experience. However, we know that there are other members of ACC who may wish to search for these projects using different criteria, or enter additional data to share regarding their projects. Since the ASRT would be a collaborative effort between ACC and airport users, any feedback on the use of the website, project data, or search criteria could all be added and collected as needed.

Some ideas that we had on improving the ASRT in the future would be to expand the search criteria to distinguish between terminal and airside projects, and to better define the available space for potential projects (whether measured in square feet or acres of available airport land).

Additionally, giving ACC members access to this tool using a unique login and ID would also allow for detailed contact information to be collected. This way, if an airport user found a project that they were interested in, they could contact the person in charge of the project at the original airport.

There is a lot potential to store and share project information on this type of a tool/database. It would allow airports to collaborate on, share, and store information related to non-aviation revenue-generating projects.
How the Product Solves the Problem

The ASRT will be an interactive aid to airports in increasing their revenue by accomplishing two main goals; promoting collaboration and providing guidance. Through the use of this online tool, airports from across the world are able to easily connect and share the innovative, trending, and often times unheard of methods that have proven effective in creating sustainable revenue streams.

The ability to connect with other airports on this large of a scale simply does not exist today. By providing airports this conduit to share and search for ideas they will have the latest, most cutting edge revenue generating ideas at their fingertips. With easier access to these unique revenue streams comes faster implementation. Through interviewing several airport authorities, we found that the most often utilized method of finding new and innovative ideas of revenue generation was through word of mouth. Whether it be from casual conversations or the several conferences held throughout the year, ideas that could significantly help the bottom line of any airport are not being shared on a consistent basis. The ASRT combats this idea roadblock by providing “on demand” information on a regular basis. If at any point in time a particular airport would like to explore new revenue generating ideas recently implemented, they can instantly pull up this information. We believe that this will become the new standard of expanding and improving on tired revenue generation methods thus increasing revenues through alternate means and lessening the impact on tenants. With information this readily available through the ASRT, revenue generation is now at the forefront of director’s minds. Increasing the availability and frequency of these discussions almost assuredly leads to faster implementation and realization of additional revenues.

In order to obtain the highest effectiveness of implementing a new and sustainable revenue system, the system must be tailored to the specific airport. Through the use of the ASRT, airports have the ability to sort and filter through many different selection criteria to find the most advantageous solution for their airport. In searching through airports of the same category, methods of sustainable revenue that have been proven to be effective will be displayed. Information on initial costs, impacts to current operations, and return on investment will provide airports the information necessary to make a well informed decision.

However, for those wishing to improve even further through a somewhat higher risk approach, airports can utilize this same filtering tool to explore what other categories of airports are also implementing. Rather than sticking to methods proven within their same “weight class”, airports wishing to expand their options can look to categories slightly larger than their current level to take on a more aggressive revenue approach. Albeit a riskier situation, the ASRT does not simply give false hopes to those wishing to implement a certain method. To protect against this, the ASRT provides information not only on what but also on how.

For projects both within and outside of an airports given category, by giving first hand suggestions on means, methods, and lessons learned, the new sustainable form of revenue will be set up for a much higher rate of success. This will mitigate the risk of implementing a new revenue stream rather than if the project was not supported by experience depicting the best ways to bring the project to life.
Lastly, the ASRT facilitates the growth of existing ideas into more refined, higher return sources of revenue. Using the wide spread use of the ASRT, not only will airports be creating new sources of revenue they will be refining the process of each individual method. Through sharing any adjustments that have been made to a particular model in order to enhance the performance of the new revenue stream these ideas are nurtured and encouraged to grow to their peak potential much faster. This furthers the allocation of each new form of sustainable revenue generation that is implemented thus growing the airport and surrounding community.

Conclusion

In today’s aviation industry, operational expenses for airports are on the rise. Current revenue generating mechanisms are traditional across the industry and rarely change from airport to airport. However, the costs at each airport have a wide range across the industry. An increase in costs is eventually reflected in higher operational costs for the airlines, concessions, and other tenants. By implementing innovative ways to generate revenue found through the use of the ASRT, airport operators have the potential to create a larger profit margin lowering overall costs for all. Airport operators can also accurately budget for new ventures with historical data found through this tool. This will ultimately keep airline fares competitive in that region, it will increase desirability for new tenants and future growth while at the same time using the profit and investing back into the Airport through capital projects. If this tool is utilized to its full potential by both operators and consults throughout the country, it has an even larger potential to change the industry as we know it today.
### Increasing Airport Revenue

#### Case Studies

<table>
<thead>
<tr>
<th>Airport Code</th>
<th>Name</th>
<th>ENTITY</th>
<th>Year</th>
<th>Initial Investment</th>
<th>Estimated Annual Revenue</th>
<th>Estimated ROI</th>
<th>Actual Annual Revenue Growth</th>
<th>Detailed Approach</th>
<th>Lessons Learned</th>
<th>Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPR</td>
<td>Terminal Massage Chairs</td>
<td>CINCIA Airport Board of Trustees</td>
<td>2015</td>
<td>0</td>
<td>20%</td>
<td>CPR was approached by a concession company offering to place two massage chairs on the landside of the terminal. They offered 20% commission.</td>
<td>The Airport could also choose to purchase the chairs and make 100% commission.</td>
<td>concessions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPR</td>
<td>Semi Driver Training Course</td>
<td>CINCIA Airport Board of Trustees</td>
<td>2015</td>
<td>0</td>
<td></td>
<td>CPR has land within a designated historic district which structure could not be constructed due to an existing agreement to preserve and protect the area. CPR negotiated a lease agreement with a semi-truck driving school which makes use of the open land where structures cannot be constructed.</td>
<td>Allow various businesses to paint advertising messages to passengers on existing roofs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IND</td>
<td>Solar Farm</td>
<td>Indianapolis Airport Authority</td>
<td>2015</td>
<td>varies</td>
<td></td>
<td>IND leased 60 acres of land for construction of more than 40,000 solar panels, which will be installed on ground-mounted racking systems on land near the airport exit from I-70.</td>
<td>Land lease, renewable energy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APA</td>
<td>Go Kart Track</td>
<td>Centennial Airport</td>
<td>2015</td>
<td>0</td>
<td></td>
<td>The Centennial Airport leased land for construction and operation of a go kart facility.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFW</td>
<td>Natural Gas Drilling</td>
<td>DFW</td>
<td>2015</td>
<td>$181 million plus 25%</td>
<td></td>
<td>DFW leased 3000 acres of land for drilling to Chesapeake Energy, an Oklahoma based company. They received $181 million and a royalty of 25% on gas produced.</td>
<td>Land lease, energy, renewable energy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KCI</td>
<td>Farming - cattle, soybeans, corn</td>
<td>Kansas City Airport</td>
<td>2015</td>
<td>$300,000.00</td>
<td></td>
<td></td>
<td>Land lease, farming</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEN</td>
<td>20 Oil Wells</td>
<td>City of Denver</td>
<td>2015</td>
<td>$1,500,000.00</td>
<td></td>
<td>Canada-based Petro-Canada to drill 20 wells on its land. The airport, which gets a cut of the sales, expects to generate $1.5 million in the first year.</td>
<td>Land lease, energy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEN</td>
<td>61 Airport Owned Oil wells</td>
<td>City of Denver</td>
<td>2015</td>
<td>$4,000,000.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEN</td>
<td>Farming - wheat and sunflowers</td>
<td>City of Denver</td>
<td>2015</td>
<td>$250,000.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFW</td>
<td>Airport Consulting and Training to Foreign Airports</td>
<td>Houston Airport Systems (HAS)</td>
<td>2001</td>
<td>$1,000,000.00</td>
<td></td>
<td>In 2001, Houston formed an affiliate company, HAS Development, to market the airport's consulting and training services to foreign airports. It brings in about $1 million annually for the Houston Airport System. The company trains airport managers from developing countries on a wide range of issues, including safety standards, running a fire department and management practices.</td>
<td>Consulting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TLH</td>
<td>TLH Market Scan of Economic Use</td>
<td>City of Tallahassee</td>
<td>2012</td>
<td></td>
<td></td>
<td>The City of Tallahassee conducted a market scan of economic uses to assess potential market feasibility of a range of concepts on residual property at the Tallahassee Regional Airport. The airport has identified a total of approximately 1,215 acres of on-airport property not required for airport use and therefore available for potential commercial or aviation-related development consideration contingent on market supportability. Airport leadership has expressly identified the residual real estate as a means to an end to generate non-aeronautical revenues which can be used to lower the airport’s cost per passenger, thereby attracting additional air service to serve the community and ultimately promote new economic development.</td>
<td>Land use, land lease, development, study</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Name</td>
<td>FAA Category</td>
<td>Owner</td>
<td>Operator</td>
<td>Serves</td>
<td>Location</td>
<td>Year</td>
<td>Enplanements</td>
<td>Aircraft Operations</td>
<td>Passenger Volume</td>
<td>Cargo Tonnage</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>--------------</td>
<td>--------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>--------</td>
<td>----------</td>
<td>------</td>
<td>--------------</td>
<td>---------------------</td>
<td>------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Casper/Natrona County Int'l</td>
<td>CS-NP</td>
<td>Casper/Natrona County International Airp</td>
<td>C/NCIA Airport Board of Trustees</td>
<td>Casper</td>
<td>WY</td>
<td>2015</td>
<td>103,397</td>
<td>45,960</td>
<td>5131</td>
<td></td>
</tr>
<tr>
<td>Casper/Natrona County Int'l</td>
<td>CS-NP</td>
<td>Casper/Natrona County International Airp</td>
<td>C/NCIA Airport Board of Trustees</td>
<td>Casper</td>
<td>WY</td>
<td>2015</td>
<td>103,397</td>
<td>45,960</td>
<td>5131</td>
<td></td>
</tr>
<tr>
<td>Indianapolis Int'l</td>
<td>CS-P-M</td>
<td>Indianapolis Airport Authority</td>
<td>Indianapolis Airport Authority</td>
<td>Indianapolis</td>
<td>IN</td>
<td>2015</td>
<td>3,605,908</td>
<td>153,300</td>
<td>60 acres</td>
<td></td>
</tr>
<tr>
<td>Dallas Fort Worth Airport</td>
<td>CS-P-L</td>
<td>City of Denver</td>
<td>City of Denver</td>
<td>Dallas</td>
<td>TX</td>
<td>2015</td>
<td>30,804,667</td>
<td>674,620</td>
<td>18,000</td>
<td>6,000 acres</td>
</tr>
<tr>
<td>Denver International Airport</td>
<td>CS-P-L</td>
<td>City of Denver</td>
<td>Denver</td>
<td>Denver</td>
<td>CO</td>
<td>2015</td>
<td>26,244,928</td>
<td>574,875</td>
<td>34,000</td>
<td></td>
</tr>
<tr>
<td>Denver International Airport</td>
<td>CS-P-L</td>
<td>City of Denver</td>
<td>Denver</td>
<td>Denver</td>
<td>CO</td>
<td>2015</td>
<td>26,244,928</td>
<td>574,875</td>
<td>34,000</td>
<td></td>
</tr>
<tr>
<td>Houston Airport Systems</td>
<td>CS-P-L</td>
<td>Houston Airport Systems (HAS)</td>
<td>Houston Airport Systems (HAS)</td>
<td>Houston</td>
<td>TX</td>
<td>2015</td>
<td>19,772,087</td>
<td>210,970</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tallahassee International Airport</td>
<td>CS-NP</td>
<td>City of Tallahassee</td>
<td>City of Tallahassee</td>
<td>Tallahassee</td>
<td></td>
<td>2012</td>
<td>344,078</td>
<td>56,575</td>
<td>68,4611</td>
<td>1215</td>
</tr>
</tbody>
</table>