An analysis of future trends in non-aeronautical revenue: A case study from Adelaide Airport

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Abstract
The need for airports to further develop non-aeronautical revenue continues to be a major concern for worldwide, privatized and commercially focused airports. The aim of this paper is to analyse future trends in non-aeronautical revenue sources and to identify both the opportunities available and possible threats to current revenue streams. This paper analyses Adelaide Airport operations as a case study and investigates the various factors potentially impacting non-aeronautical revenue in this context.

Keywords
non-aeronautical income, Adelaide airport, commercial revenue, technology

INTRODUCTION
In recent years, airports worldwide have further developed non-aeronautical revenue sources, with approximately 47 per cent of global airport revenues now deriving from non-aeronautical sources. This change has primarily occurred as the airport sector has undertaken a privatization process and transitions from public assets to commercialized assets.

Globally, the evolution of privatisation has evoked changes in airport offerings and terminal design that aim to increase passenger spending through new retail offerings and movement flows. Airports have also developed additional revenues by developing large airport land parcels to establish property development growth and ancillary income, such as car parking.

The site of an airport facility and the type of passengers are key factors for commercial revenue, with international passengers having a higher spending rate than domestic passengers. The larger
the airport scale is, the more varied retail outlets that can be offered and established, compared to smaller airports with less capital to spend on retail establishments. As the passenger base of an airport grows, further capital can be justified to increase commercial sources.

Over the last 20 years, the airports of capital cities in Australia have moved from government control to private ownership, which has changed the way airports view revenue generation. The change in ownership structure has created an opportunity for airport facilities to be redeveloped and for owners to capitalise on the land parcels available around airports. These changes create pressure to increase revenue sources, as airport operators have injected large volumes of capital into the assets and shareholders expect strong returns on these investments.5

A review of the annual report financial data of Australian airports (Figure 1) displays the percentage of total income derived from aeronautical revenue. It also highlights the fact that airports with higher passenger numbers (over 8 million), such as Sydney, Melbourne and Brisbane, generate a larger contribution of non-aeronautical income compared to smaller airports (eg Adelaide and the Northern Territory airports from the ADG — Airport Development Group), where non-aeronautical revenue is below 50 per cent.

It is important for any business to establish strong revenue sources and continue to grow these for the future success of the business. The operation of an airport is no exception and requires continual revenue growth to ensure business continuity and to reinvest income to fund future capital requirements.

For Adelaide Airport, the importance of non-aeronautical revenue has been identified, and over the past ten years, many large-scale capital projects have been undertaken. These changes include the construction of a brand new terminal building (cost of AUD260m), the establishment of the Burbidge Business Park district, and the construction of a multilevel car park building (cost of AUD100m), which have all contributed to the revenue growth of the company.

Based on AAL’s annual report data from the financial years 2008/2009 to 2013/2014, there has been a total revenue growth of 20.85 per cent at Adelaide Airport (AUD30m increase), with non-aeronautical revenue representing 81 per cent of this growth (AUD24m). The graph in Figure 2 highlights the revenue shift over this period, which has been assisted by additional property developments, such as brand outlet centres, IKEA and the development of business parks, which reduces reliance on aeronautical revenue.

The aim of this research paper is to examine and identify future trends in non-aeronautical revenue at Adelaide Airport from the stakeholder’s perspective, with primary data collected through an interview process with aviation experts. It is important to define and classify the different income sources for airports. In this case, non-aeronautical income will be considered as revenue sources that are not directly linked to aeronautical services. Therefore, non-aeronautical income includes revenue generated through property rentals such as hangar, building and site rentals and commercial revenues generated through the terminal environment.

**Driv3rs of Changes In Revenue Sources**

**Changes to airport ownership structure**

Previous research has found that commercial growth has occurred through 'the evolution of the airport sector from a public utility to a commercialised and, in some cases, privatised industry'.2 This change in ownership structure has created the freedom required to redevelop and rethink the offerings at airports around...
the world. In Australia, privatised airports have injected capital to establish or upgrade terminals and other infrastructure (eg runways), and it is likely that these changes would not have occurred under government control. The continual upgrading of assets provides a benefit to the local and state regions through improved public facilities, employment growth and the further development of existing industries.

Private ownership also creates the need for return on investment, which has led to airports establishing additional sources of revenue through non-aviation property development, and not necessarily property with connections to aviation. This process has created tension with surrounding jurisdictions because of differing perceptions of compatible land uses for airport land and regional planning goals. Tensions arise because local and state governments do not control development on Commonwealth land; instead, development on airport land is controlled by the Commonwealth.

Australian airport operations and development are governed under tight Commonwealth airport regulations controlled by the Airports Act and the airport master planning process. The aim of the master plan process is to establish the strategy for airport operators and set the blueprint for future airport development. These processes can often slow down development approval and construction periods, which in turn slow down revenue growth. The Commonwealth government is considering efficiency proposals that will improve the major development plan process currently in place and benefit airports. Streamlining these processes would enable future development approval to occur more quickly, while at the same time maintaining suitable levels of public consultation.

In Australia, the development of airport cities is another form of property development that is creating additional revenue sources and making use of surplus land at airports. One example of an established airport city model is Essendon Airport, which has revived a poor performing asset, has generated new jobs for the community, and has developed high-quality commercial assets. The shift to private ownership in Australia has driven non-aviation property development to access for a significant proportion of total airport revenues. This growth cannot be at the detriment of operations, however, as airport owners are obliged to continue operating their facilities to the standards expected of major international airports and are subject to price and access regulations. Each airport needs to continue to provide strong returns for shareholders while maintaining and building aviation facilities to meet future market demands.

**Airlines**

There is global pressure on airlines to lower costs due to increased competition in the aviation industry. As a result of this competition, there has been a decline in income derived from aeronautical activities. This decline has occurred due to pressure on airports to maintain or lower aeronautical charges, which has traditionally been the primary source of income for airports.

The current aviation industry is facing a variety of pressures (such as rising fuel costs), and airlines are continually seeking ways to lower costs. Airport landing charges continue to be an issue for airlines, and airports will need to respond to pressure to lower these charges. To maintain revenue levels, airports will need to grow other revenue sources; Harrop suggests that airports can generate up to 80 per cent of their revenues from non-aviation activities, hence reducing their reliance on aeronautical income.

As commercial revenues grow, it is important to consider commercial and aeronautical operations jointly to better understand airport pricing for both operations to ensure that airport pricing is maintained at suitable levels for all parties. One of the most significant changes to the airline industry is the growth of low-cost carriers (LCCs). Airports have embraced the growth of LCCs to complement the traditional airline traffic base; however, this has placed negative pressure on aeronautical income given the lower landing charges and the incentives in place. The growth of LCCs has also assisted the growth of commercial revenue, as traffic has increased and as LCC passengers potentially spend more at the airport in comparison with traditional travellers.

The increased spending by LCC passengers can be traced to strong demand for terminal retail outlets because of the limited options on board the aircraft, particularly food and beverage (F&B) offerings.

It is important for airports to recognise changing customer needs and develop retail establishments that can maximise the revenue. The type of lease structure in place is also important, as contracts based on percentages of revenue will convert to higher airport revenues as sales grow.

Without a suitable retail offering in LCC terminals, airport operators are missing out on lost sales and percentage rents. The development of terminal facilities is not easily justified, however, as the LCC model suggests that those airline passengers are unlikely to pay higher aeronautical fees to utilise upgraded assets.

Further review is required to determine the future impact of LCC-related changes in Australia and how this will impact airport business models. For example, European airports have a range of different factors impacting LCC services, such as threats to fly to adjacent airports if commercial incentives are not provided. The European aviation industry has many airports located within a condensed landspace that compete for airlines and passenger traffic, hence enabling LCC to substitute airports and achieve the same market share.

These levels of locality competition are not found in many major airport destinations in Australia (potentially the Gold Coast and Brisbane airports being the only exception), as airports cannot be easily substituted due to the sheer distance between airports and the lack of other transport modes (eg fast train connections). The long distances between airport locations in Australia also impact LCC operations, as they function on cost models based upon high volumes over short-haul destinations, which can be difficult to achieve in Australia.

**Challenges to commercial revenue**

Leading into the future, there is a range of challenges to commercial revenue growth at airports. The key issues impacting future success and possible income growth include the following:

- Changes to key product categories. Changes to duty-free sales limits, consumption habits and regulations will change the way travellers purchase products such as tobacco and alcohol. In Australia, changes to the tobacco duty-free limits have already occurred. These changes
often impact traveller satisfaction levels, as varied regulations across the globe make it difficult for travellers to understand their limits. Proposed changes by the World Health Organization to ban duty-free tobacco could also impact revenue generation.

- Security. Changes in security requirements have impacted the level of retail spending at some airports. Passengers could suffer increased anxiety through security checks due to the unfamiliar environment, creating the wrong context for encouraging retail spending. The impact of increased security processing times and additional requirements regarding liquids, aerosols and gels (LAGs) reduces passenger time in retail areas, which in turn influences retail consumption possibilities.

- Congestion. As the number of passengers grows at airports, congestion occurs within the available terminal space, which then impacts sales. As stated by Graham, ‘retail is only one part of the airport business, and a balance between the commercial and aeronautical aspects must be achieved’. To achieve the suitable retail levels of processing space, reduced retail space can occur. It is vital for airports to understand the flow of passengers and how to increase passenger time in retail zones to maximise the available retail space.

- Food & Beverage. F&B facilities are a vital part of airport retailing, as airlines are changing their on-board offerings, leading to an increased demand for food service facilities. F&B accounts for a large part of the overall perception of an airport (eg pricing, quality) and helps attract people to the retail area. Achieving the correct mix of F&B is becoming more important, and the ability to be flexible is key (eg adjust to travellers’ changing needs).

**Airport business models**

The level of non-aeronautical income generation does vary between airports; however, ‘performance differences relate more to the management model than to ownership arrangements’. By finding the right business model to suit their market conditions, airports can build additional revenue.

For some smaller airports, ‘if the potential for concession revenues is small, the private airport will focus attention on generating revenue from aviation activity’. It is important that, no matter what their size, airports carefully review their income sources to lower their reliance on aeronautical income.

**BACKGROUND ON ADELAIDE AIRPORT**

As the gateway to South Australia, Adelaide Airport is currently the fourth-largest domestic airport and sixth-largest international airport in Australia (AAL website) in terms of passenger numbers, processing approximately 8 million passengers in 2014/2015.

Adelaide Airport was constructed at the current West Beach site in the 1940s, with regular services commencing in 1955. The airport location is a key advantage for the Adelaide public and travellers alike, as the location is easily accessible and is located approximately 10 minutes from the city’s central business district (CBD).

Over the years, passenger and aircraft activity has steadily increased. During the 1980s, international services commenced in a purpose-built international terminal. Since 2012/2013, Adelaide Airport has seen a large percentage increase in international passengers due to the introduction of new carriers, including Emirates. These new services have created a range of better connection options for travellers, particularly to destinations in Asia and Europe. This passenger growth is forecast to continue (albeit at a lower rate), which will impact commercial revenue growth in the future.

Since operations commenced, the airport has been operated by the Commonwealth. During the 1990s, however, many Australian airports were earmarked for privatisation. During the period of privatisation, most Australian capital city airports were leased on a long-term basis to private entities, and this created a large cash injection for the government. Adelaide Airport was included as part of this process; as such, it was privatised in May 1998 and became managed by Adelaide Airport Limited (AAL).

AAL is an unlisted public company comprised of shareholders from a range of Australian superannuation funds. Since the purchase of the airport precincts, AAL has injected large amounts of capital into the airport and surrounding zones. These projects have included the development of business parks, runway expansions and a new multi-storey car park.

The largest of these projects was the construction of a completely new multi-storey terminal at a cost of AUD260m combining both domestic and international services. The new terminal building helped to provide a much improved facility for the public (eg including aerobridges) and achieved a range of awards for its design. The new terminal building has had large commercial revenue advantages for AAL, through increased retail space, increased advertising and improved short- and long-term car parking options.

During October 2014 AAL launched an intensive brand reconfiguration, including a new logo, and updated its 30-year vision. The revised vision is ‘to be a top tier Airport Business Centre in Asia Pacific recognised for delivering exceptional outcomes to our customers, shareholders and community’ (AAL brand book). This change in vision highlights the shift in business model from being just an airport relying on aeronautical income to becoming a fully diversified company that does not rely on one key business unit. This change will be realised through developing the airport site as an ‘airport business centre’, where revenue will be generated through additional property, commercial and retail-oriented growth opportunities.

AAL’s future growth expansion has been identified in the latest master plan and vision documentation that was released in 2014. These growth areas will enhance the overall airport in the future while growing non-aeronautical revenue sources. These improvements will include an airport hotel, a new airport business district centre and an expanded terminal building to capitalise upon and further grow international services to South Australia.

**METHODOLOGY**

**Research questions and topics**

As the objective of this paper is to identify and examine future trends in non-aeronautical revenue at Adelaide Airport from a stakeholder’s perspective, it was vital to determine the relevant questions and topics to be discussed at each interview. Following a literature review, a number of different themes and topics were identified. It was important to then ensure that each interview would cover these topics and expand on the issues relating to Adelaide airport in particular.

The questions built on the interviewees’ understanding of non-aeronautical revenue. Based on the literature review, the different aspects identified were then
placed into different categories, including external factors, airline factors and airport factors. The aim of this classification process was to break down the issues into smaller subcategories and thus guide the interview process and avoid unrelated conversations.

Data collection
The primary data for this research were collected through a series of interviews held with key stakeholders in the Adelaide aviation market. The aim of the interview process was to capture ideas, concepts, opinions and views on a range of topics and areas related to non-aeronautical revenue sources and future trends.

Each interview was based upon a series of open questions which allowed participants to express their views and opinions on non-aeronautical revenue sources and which was designed to evoke discussions around a range of issues related to revenue generation at airports. These questions were created after an academic review of the literature was conducted and key issues were identified, including changes to security, technology advancements, terminal design and property development opportunities.

Seven participants were identified as potential interviewees for this research because of their past aviation experience and current employment at Adelaide Airport. The participants were also selected because of their experience and impact in relation to revenue generation within an airport environment. To maintain confidentiality, pseudonyms were used to protect the identity of participants.

Data were collected between March and May 2015 through face-to-face interviews or by telephone conference for interstate participants, with each interview lasting between 30 and 45 minutes.

During the interview, notes were taken, and each interview was also recorded for future reference. Once all of the interviews were completed, the notes were collated and the voice recordings were transcribed into text format. These collected notes were then reviewed to identify key themes and were analysed against the research objectives and the literature review.

DATA ANALYSIS
The interview process identified a range of factors related to non-aeronautical income generation and potential trends for the future. These key topics are reviewed in greater detail below.

Airport revenue shift to generate greater commercial revenues
The need for airports to reduce their reliance on aeronautical income was identified by most participants. As noted by John, there has been a push by airports to generate commercial revenues to reduce their reliance on aeronautical income. The ability to access open land parcels enables development to occur, and the close proximity of the airport to the CBD contributes to the development potential.

The shift towards revenue diversification was identified by Steve as a key issue for airport owners to help protect them from aviation market shocks. Steve stated that ‘diversification of revenue is essential in respect to shocks that I have seen in the aviation industry over the years. Whether it be SARS, whether it be the September 11th attacks or the Ansett demise. This enables continuity of operations during those hall periods where revenue may decrease for a period of time.’

One of the changes identified by Tony was the growth of the domestic market and related terminal services from 2010 to 2015. As stated by Tony: ‘The domestic passenger currently is quite lucrative and is quite open to not just the standard sort of news, gifts, beverage, souvenirs but they are open to a whole range of more shopping mall-style retail.”

Historically, international passengers have been viewed as the most important passengers because of their higher spending rate and duty-free sales; however, the sheer volume of domestic passengers and currency exchange fluctuations are changing this viewpoint. For Adelaide Airport, the domestic passenger segment is very important, as 88 per cent of total passengers are domestic or regional compared to 12 per cent international (14/15 past numbers). Creating further opportunities for the domestic market can create great commercial advantages, capitalising on the larger participation of domestic passengers.

Land parcel development
The movement towards capitalising on airport large land assets has led to airport land being developed for a range of differing uses. As mentioned by Arthur: ‘we have got a strategy for developing the gateway asset that involves a hotel, an office park, improving amenity in the precinct generally to facilitate further growth of the asset.” Thus, heading into the future, one of the largest potential areas of non-aeronautical income growth identified by AAI is to further capitalise on remaining land parcels.

As identified by Adrian, due to the nature of operating an airport environment, airports as a general rule have access to large land parcels. These land parcels then create the opportunity to develop property facilities such as business parks and brand outlet centres on
surplus land that is not required for aeronautical services. Land development at the airport does have some limitations due to aviation constraints (such as building heights); however, these can be managed through careful planning and establishing master plans. Another limitation is the length of tenure for the privatized airports. AAL had a long-term lease for 49 years plus an option for an additional 49 years; however, as time progresses, the risk of not being able to secure long-term tenants arises. This risk is due to the airport land being only available on a leasehold term rather than sold outright to developers. As the airport lease term diminishes, so does the tenure that can be offered to developers, hence making some development business cases unviable.

Steve commented that airports face pressure from the surrounding communities to make use of the land parcels available; as airports are seen as public assets, there is also the sense that there is land that is underutilised, and there is a responsibility to the community. To further develop the airport's brand and public image, it is important for the community to see development occurring on these land parcels and to show the benefit the airport asset brings to the state. For AAL, the proximity of the airport to the CBD is a major strength, and the community expects open land (particularly that close to the CBD) to be utilised in some manner. As stated by Steve: 'Adelaide Airport is one of those very centralistic airports in the middle of the metropolitan area. Therefore, there is a shortage of large-scale land supply, and if you look at places like IKEA, Harbour Town, and Masters stores, they cannot find those sites anywhere else or land suitable for that in a metropolitan area.' In the past, AAL has grown property revenues by constructing large-scale retail developments (such as IKEA, Masters and Brand outlet centres) on airport land, which in turn creates a hub location for the community. In the future, there will be further opportunities to develop additional parcels and maximise the benefits of the location.

As noted by Steve, there has been a perception from competition, particularly evident from planning authorities, that airports should not compete with other centres. Those barriers have decreased over the years, where Adelaide Airport, in particular, is being recognized by the state government as a business centre, as an airport centre, and also as a bulky goods centre. The growth in airport development, particularly since privatisation, has changed the perception of the airport in the wider community; this is a huge advantage and helps drive the vision to create a business centre hub at the airport, rather than to be viewed as unfair competition to other development sites in Adelaide.

Property and infrastructure constraints
Throughout the years, passenger growth has continued across the globe; in Adelaide, in particular, there has been a steady annual average growth rate of 4.37 per cent per year from 2004-2005. This growth in passenger numbers is positive, as more passengers create increased revenue opportunities; however, the increased traffic can place pressure on existing infrastructure, which could be constrained due to current configurations and inadequacies.

Steve commented that further growth will place limitations on existing infrastructure, including water and electricity provision. To grow revenue sources, airports require the infrastructure to be available or be able to be developed in a timely manner. In addition to the terminal infrastructure, the overall environment needs to be flexible for future growth. These aspects include potential runway extensions, car parking infrastructure and the location of new building development land parcels.

For Adelaide Airport, these issues are addressed in the master plan report, which is filed with the Commonwealth government every five years. The master plan is a lease requirement for privatized airports and details the future airport growth expansion plans and how these areas will be managed (eg environmental requirements).

To be in a position to maximise development potential, it is important that key infrastructure is in place or is able to be increased. These items include the ability to obtain relevant electricity and water supplies for any site, which adds further expenses to any planned development. Adelaide Airport has conducted a range of planning in this space and is examining the possibility of employing energy from renewable sources and utilising water harvesting projects to harness available water. These aspects would have commercial revenue impacts, as many potential tenants now seek environmentally friendly development; for example, Commonwealth tenants now seek Green Star-rated buildings to lease.

Terminal design
One of the key issues identified by interviewees is the constraint around the current terminal design and the impact this could have for future commercial growth. As indicated by Frank, to facilitate the future growth requirements, the current terminal must be flexible and be able to adapt to future needs. He stated that 'you have to build it to be flexible. Change is inevitable; no one can ever predict the precise nature of change or the precise consequential impact of it.' The ability to be flexible enables the airport to quickly adapt to changes and maximise the commercial returns from this change. Adelaide airport operates a common-user terminal design, which enables a certain degree of flexibility. Another issue identified that impacts terminal design involves the services required by airlines within the terminal. For many years, check-in desks and large check-in halls were required; because of kiosk check-in and bag drop technology, however, this space is no longer required. John stated: 'bag drop and kiosk will actually result in more efficient processing, which should possibly increase dwell time.'

In the past, passengers would spend hours waiting to check in; this process is now an online transaction, and the bag drop technology greatly speeds up the check-in process. Similar to security improvements, this enables passengers to spend greater dwell time in the retail zones and to be in a better state of mind.

The ability to extract the largest commercial return also relies on the right terminal configuration. AAL is in the process of investigating a future terminal expansion, and this will enable the modification and expansion of the current configurations. As identified by John: 'limitations are actually square metres available for retail right now.' At Adelaide Airport, the lack of space is evident in the aisles international zones. Since the original terminal construction in 2005, international passengers have increased by 187.98 percent, and the current retail space cannot sufficiently service customers. By increasing retail
space and improving the design in these zones, an improved offer will be available to passengers, hence creating commercial opportunities that benefit both retailers and the airport operator.

Another terminal design limitation that was identified is the way retail can be integrated with the passenger flows throughout the terminal. As stated by Frank: ‘We are seeing a change to a more open style of retail, not boxes but stores that are low level, open and they are actually assimilated into the passenger flow.’ Arthur also commented that the nuances across retail design are important, such as where to place seating to attract the highest spending. By modifying the retail area configuration, this will assist passengers to easily see the retail opportunities available, encourage passenger dwell time, and force travelers to move past retail space to access the boarding gates, which should lead to an increase in retail spending.

Changes in market dynamics
Interviewees identified a range of possible changes to aviation market dynamics that may impact airport revenue sources in the future. One of these areas involved changes to duty-free regulations that will place limitations on duty-free sales. According to Tony: ‘There is now pressure on alcohol and I suppose ultimately — looking at say, the Trans-Tasman market, will they abolish duty-free between Australia and New Zealand? The opening of the trans-Tasman market would potentially change the sales profile for this market, and the sale of duty-free items such as alcohol and cosmetics would be limited. This trend would mean a loss of the New Zealand–Australia market, requiring retailers to develop new product options and create better product offerings in the traditional tax-free products.

As mentioned by Tony, pressure to remove duty-free benefits for alcohol products due to the negative health effects is a natural progression from recent legislative changes to tobacco products. Because of the reduced cigarette limits per passenger, duty-free operators have changed the way they sell tobacco products, such as offering smaller packet sizes. If the alcohol change occurs, the reduced sales will have a dramatic impact on duty-free revenues, as alcohol is one of the main categories of duty-free sales. It will be important for both retailers and airports to work together to develop new offerings and recapture the lost market.

Another trend identified by Steve was the impact of free trade policies currently under review by the Commonwealth. Similar to the impacts of opening the borders for New Zealand traffic, free trade changes could further reduce margins for duty-free operators.

The threat of outside competitors was another market trend raised by the interviewees. Due to the large volumes of commercial revenue generated at airport sites, competitors have started to realise the potential income possibilities and have looked at ways to be part of the process. As stated by John, airlines servicing the airport are such an example, as they ‘could offer duty-free in-flight seating in our duty-free store, and they could be buying that off them and then actually having it picked up on the flight or delivered at the other end’. As airlines continue to push such options, the volume of duty-free sales at the traditional airport retail stores will decrease.

Another example of market change is the new agency retail category, which is facing the threat of changing technology as people move towards online products rather than hard copies. Arthur noted that competitors are also having an impact on this business, as: ‘Qantas has just released a new application on their phones that if you’re travelling a day out, you can browse 4,000 different magazines and upload it to your iPad, you read it on the plane, and then when you leave, 24 hours later, it is deleted, so there is no need to even buy that magazine anymore.’

These various examples show the threats to airports from outside competitors and the need for airports to develop ways to improve their current offerings to appeal to travellers, reduce reliance on once core categories (eg news agency sales), and find ways to reduce the leakage to external sources.

Technology innovation
In general, the greatest impact on commercial revenue growth identified by the interviewees was the use and development of technology. It is vital for the airport to embrace the changing use of technology and harness these changes to improve commercial returns. Peter identified that using the data available to the airport (eg movement counters, spending transaction data) provides great opportunities for airports. By utilising software ‘to understand customers and to start to target them specifically’, this can assist in developing patterns of passenger movement and spending, and a passenger mix profile can be developed. This information can then be employed to improve retail performance by offering new retail opportunities or tailoring certain products to different times of the day.

The further use of data to create warehousing systems and automated revenue management systems was identified by John: ‘revenue management has been in hotels for a long time and is now coming to car parking.’ Adelaide Airport has recently constructed a multi-deck short-term car park and, as noted by Arthur, there are now opportunities to utilise revenue management systems to set variable car parking pricing through yield management. Yield management utilises consumer purchasing data to anticipate future demand and to set price segments based on product capacities, with the aim of maximising income. By employing yield management, Adelaide Airport can control pricing on an hourly demand basis and also offer tailor-made products (eg access to wider parking bays), which will allow the airport to maximise revenue returns from the car park.

The use of technology by passengers will also increase within the terminal. It is important for the airport to recognise this trend and offer facilities (such as technology-based retail and mobile phone charging stations), while at the same time leveraging commercial advantages. The main requirement for travellers is access to a fast Wi-Fi system, which in turn enables the airport to collect passenger data through their mobile phones and track their movements through the terminal. The collected data have a range of commercial benefits for retailers, as they can identify peak dwell times throughout the day (enabling better utilisation of retail staffing) and can be employed for terminal modification to improve passenger flows through the terminal to maximise retail. As stated by John, by employing the available data, airport membership programmes could be created for regular users of the terminal, providing priority security lanes and retail product add-ons based on past transactions.

Easy-to-access information (such as boarding times and gate numbers) is key to minimising passenger stress levels while...
in the terminal. Once passengers move to the boarding gates, the retail and commercial opportunities are missed. Through the use of flight information display system (FIDS) or mobile phone applications, passengers can determine which gate they will depart from. Call-to-gate technology delays the displaying of gate allocations and encourages passengers to remain in the common terminal zones. To relax passengers, time frames can be displayed (eg five minutes to gate allocation) on FIDS, notifications can be pushed to mobile devices, and an increased number of FIDS in individual retail establishments can help make passengers feel at ease. The use of call-to-gate technology raised by Tony intermixed within the retail area will increase passenger comfort levels and encourage dwell time in the retail zones, leading to greater revenue transactions.

**Security changes**

Interviewees identified changes to security regulations as having the potential to impact airport operations. John emphasised these changes, stating that: ‘I anticipate we will see a strengthening of security for domestic, bringing it up more to the international standard with the impacts’. Any change to security requirements that leads to increased processing times would affect commercial revenues, as additional time pressures negatively impact passengers’ shopping motivations.6

John, however, suggested that: ‘It also has benefits for us because what it might mean is if we can get it to be on par with international, then we actually only have one screening lane’. By reducing the number of security points, this will assist in streamlining the processing component and will enable passengers to have a relaxed mindset and increased dwell time, which will promote retail spending.

Adrian felt that these changes have come about due to technology advancements (such as 3D imaging) and changing approaches by regulators in security management. By removing additional security requirements and implementing new scanning technology (3D body scanners, smart gate technology), passengers will spend less time in processing, which in turn will create the potential for additional dwell time in retail zones. For Adelaide Airport, in particular, this will increase the dwell time for international passengers, as there are currently additional screening points for international travel compared to domestic travel.

**DISCUSSION AND CONCLUSIONS**

The objective of this paper was to identify and examine future trends in non-aeronautical revenue at Adelaide Airport. The interviews revealed that the growth of commercial revenue is important to AAI, and that Adelaide Airport will face many opportunities heading into the future.

The use of technology was identified as a key area of revenue generation. This included the implementation of programmes to utilise available data to monitor the movement of passengers through the terminal and, in turn, to employ this information to plan future retail and make changes as required. The impact of technology was also important for the implementation of revenue management systems. By carefully managing airport products and pricing, additional revenue growth was deemed possible.

Participating interviewees uncovered that establishing a business model that enables increased non-aeronautical revenue is important, particularly due to the constraints on aeronautical revenue growth such as the impact of LCCs. By utilising long-term planning processes, the use of available land parcels was seen by participants as vital for revenue growth. The advantage of these revenue streams is that they do not require linkage to aeronautical services (such as retail offerings). For Adelaide Airport, its close proximity to the CBD is advantageous in capitalising on and providing opportunities for strong offerings that also serve the wider community.

The issues related to property constraints and terminal design were seen as potential future challenges. To grow commercial revenues, airports must determine the business parameters, including the optimal design, size and combination of terminal facilities.6 It was highlighted that, due to the large passenger growth over a short period of time, the current terminal design was now constrained. To work around these issues, Adelaide Airport is investigating the possibility of a terminal expansion programme, which would enable the optimisation of commercial opportunities. It is also important to create a retail environment that will entice passengers to remain longer in these zones to maximise commercial opportunities.

Looking into the future, terminal operations could also be impacted by changes to security regulations. The extent of these changes is not yet known, however, through careful planning and with suitable available space the impact of changes could be negated. There is also the strong possibility that, through technological advancements, the security process could become streamlined, which was perceived by interviewees to correlate with increased dwell time and shopping motivation.

Interviewees identified a range of challenges, including the threat of competitors eroding airport revenue streams. Competitors (such as airlines or off-airport suppliers) providing similar products or services would reduce commercial returns for the airport. Through careful management and monitoring of these competitors, the airport could leverage its market position to create appealing products that are more accessible for passengers, with the aim of reducing commercial revenue leakage.

Another threat raised was the potential for changes to duty-free shopping, which could reduce revenue returns. In response to these threats, Adelaide Airport is aware of these issues and would need to monitor the marketplace regularly. Working closely with tenants and partners and reacting quickly to change would provide the greatest opportunities to maintain revenue levels.

The continued growth of non-aeronautical revenue enabled airport operators to reinvest into their aeronautical assets. Although these improved assets create the opportunity for additional revenue, they are also large-scale community investments. These capital improvements create positive implications for the local region, boost employment and assist the growth of existing industries.

The future possibilities for commercial revenue growth at Adelaide Airport are positive; however, many factors will influence that outcome. By utilising technological advancements and historic data trends, airport owners can strategically plan their framework for growth. It is important for airports to maintain a balanced portfolio and invest in infrastructure that is flexible and adaptable to market changes and, in doing so, to maintain and grow commercial revenue sources into the future.
References


