Chapter LIII
The Next Big RFID Application: Correctly Steering Two Billion Bags a Year Through Today's Less-Than-Friendly Skies

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ABSTRACT

This chapter examines the adoption of radio frequency identification (RFID) technology in the commercial aviation industry, focusing on the role of RFID systems for improved baggage handling and security. The chapter provides a timely overview of developments with regard to the implementation of RFID technology in commercial aviation, which promises distinct advantages over the currently used bar-code system for baggage handling. The chapter focuses on how RFID technology can improve customer service through better operational efficiency in baggage handling, which has been demonstrated to be an integral component of the airline's customer service equation. Developments with RFID technology can dramatically improve the accuracy of baggage handling, which can enable air carriers to close an important service gap among customers in an increasingly turbulent operating environment. Other service industries can certainly benchmark the airline industry's use of RFID technology in luggage tracking as a way to improve their own operational capabilities.

INTRODUCTION

To put this chapter in perspective, consider this scenario: You have just landed in Alexandria, Egypt, or Alexandria, Louisiana. You are standing at the baggage carousel, having flown in on the last flight arriving that night. A constant stream of bags of all shapes, sizes, and colors circle past you, disappearing one by one as your "lucky" fellow passengers claim their prizes. After about 15 minutes, the carousel stops spinning. At that point, you realize that your checked roller-bag has not arrived on the same flight as you.

Now, you are in "lost luggage hell," and while the airline may do its best to accommodate you, no amount of compensation from the air carrier—whether in money, miles, or drink

coupons—can change one simple fact: How are you going to make that winning presentation to a major new client at 8:00 the next morning? You realize that the only clothing you have in your possession is the warm-up suit you wore to be comfortable all day as you traveled; your "killer suit" and "confidence tie" are likely sitting on an airport tarmac thousands of miles away, with no clothing store in the city that will open before the meeting (unless you happen to be in Las Vegas).

The system that you are dependent upon to correctly track your checked luggage to either the Memphis in Tennessee or in Egypt, or wherever else it may be, is based on correct readings along the line of a bar-coded label, bearing a 10-digit IATA (International Air Transport Association) number. Gartner's Research Director, Jeff Woods, commented that "bags are very well tracked right now" by the airlines and their bar code-based systems (cited in Morphy, 2004). Yet, this is little consolation when it is *your* bag that is lost. The baggage tracking systems of the world's airlines are mature, and even under the best of conditions, bar code technology works in correctly reading only eight or nine bags out of every 10. This means that the airlines continue to devote considerable time and energy to manually intervene to correctly direct the right bags onto the right flights, while spending great amounts of money to reunite passengers with their bags when the system breaks down.

Today, savvy airlines, even in their precarious financial positions, are seeing the shift to RFID (radio frequency identification)-based baggage tracking systems as a solid operational investment that can produce significant cost savings and demonstrated return on investment (ROI). Airports as well are taking the initiative to shift to RFID-based systems, sensing the opportunity to produce greater traveler satisfaction with their experience at a specific airport. In a deregulated world of airline and airport choices, these entities are combining forces to enhance customer service and give them a competitive advantage, perhaps for a significant window of time until such RFID-based systems are made mandatory.

In this chapter, we will examine the mechanics of how RFID-based baggage tracking works and the benefits it can provide. After a brief overview of RFID technology, we will look at the experience of Delta Air Lines, which is the first airline to publicly commit to taking the technological leap forward to implementing RFID-based baggage tracking. We will then examine the confluence of technology, terrorism, and yes, marketing, that will likely drive the adoption of RFID-based tracking of checked baggage throughout the world. The RFID movement is also being spearheaded by the U.S. government. It is clearly interested in securing the safety of the traveling public and with it, what financial viability the airline industry has left in the wake of the after-effects of September 11, 2001, and the decline in travel spurred by that awful tragedy, an economic recession, and record fuel prices. We will examine the government push in this area and concerns over passenger privacy. Finally, we will look at an alternative vision of the future of airline customer service, which may preclude the need for baggage service as part of the air passenger experience altogether.

WHAT IS RFID?

In brief, radio frequency identification uses a semiconductor (microchip) in a tag or label to store data. Data is transmitted from, or written to the tag or label when it is exposed to radio waves of the correct frequency and with the correct communications protocols from an RFID reader. Tags can be either *active* (using a battery to broadcast a locating signal) or *passive* (using power from the RFID reader for