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**DEPLOYMENT AND TEST OF A RETAIL  
DIGITAL COMMUNICATIONS NETWORK BY  
THE UNITED STATES POSTAL SERVICE**

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The authors appreciate the comments received from Professor Barton Weitz, University of Florida.

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## **INTRODUCTION**

Retailers are rapidly adopting digital communication networks (“DCN”). Companies such as Advance Auto Parts, Nike, Target, Tesco, and Wal-Mart, among many others, have deployed networks. Estimates of the overall industry’s size and potential vary widely, but it is conservatively estimated to grow to over \$2 billion by 2009, for a cumulative annual growth rate of 27 percent for 2004-2009<sup>1</sup>.

Growth in the retail DCN segment is being fueled by a variety of factors. These include a growing recognition of the importance of the retail store as a marketing medium, a decrease in the effectiveness of traditional advertising due to the fragmentation of mass communication channels, and falling technology costs. In addition, retailers are gaining an understanding of DCN’s many benefits, including dynamic and flexible messaging, which enable more effective and timely communication with consumers at the place of purchase, which is leading to broader industry adoption.

As with any new and evolving technology, many issues present themselves. In the case of DCN, these tend to revolve around strategy, deployment, and measurement. Prior research in this area has focused upon these issues, but has been limited in terms of correlating strategy with measurement over extended test duration. While such prior research has yielded valuable insights, it has been inhibited in terms of the size and scope of the underlying data sets.

This Working Paper contributes to the study of retail digital communication networks in various ways. First, it is the most extensive report of a major DCN field test published to-date. Second, it provides intricate knowledge into the testing methodologies applied and the results achieved therefrom. Third, it demonstrates how various analytic models are integrated and interpreted relative to an articulated retail strategy. Finally, it draws implications from this research for wider retail industry application.

The United States Postal Service (“USPS” or the “Postal Service”) tested two system configurations over 12 months in 18 locations. The first system, termed Video Test Sites (“VTS” or “VTS Markets”), comprised the placement of two digital displays in nine test sites in three different markets. The second system, termed Audio Test Sites (“ATS” or “ATS Markets”), incorporated audio messaging with the placement of one digital display in nine test sites in three different markets. The results from the ATS and Total Market (which incorporates the results achieved from both the ATS and the VTS Markets) are presented here in summary form. The results from the VTS Markets are analyzed in this Working Paper.

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<sup>1</sup> Source: Cap Ventures Info Trends. Cap Ventures’ estimate includes advertising revenue, hardware and software costs, and related operational fees for the retail, hospitality and entertainment, services and public space segments. Contrast this to Frost & Sullivan’s estimate of the North American advertising market for retail digital signage alone, which is projected at \$3.7 billion by 2011.

The conclusions reached from the test by the USPS of its DCN, known as the Post Office Channel, in the VTS Markets are summarized as follows:

**Observation 1:** The Post Office Channel had a positive, quantifiable impact on Postal Service revenue.

**Observation 2:** Customer basket size was positively impacted by the presence of digital signs.

**Observation 3:** Consumer awareness of products/services did not have a high observable correlation with changes in revenue.

**Observation 4:** The data is inconclusive as to whether the Post Office Channel increased immediate (impulse) demand.

**Observation 5:** Consumer intent to purchase products/services three months following their interview did not have a correlation with revenue over a two-, three-, and four-month test period.

**Observation 6:** Consumers were aware of the digital signage at the Post Office.

**Observation 7:** Overall, the Post Office has a high-rate of advertising recall. Moreover, digital signage had a positive impact thereon.

**Observation 8:** Consumer awareness of products/services advertised on the digital signs was increased.

**Observation 9:** Digital signage had a noticeable impact upon product/service purchase intent.

**Observations 10:** The data is conflicting as to whether retail digital signage had a clear impact on overall reported customer satisfaction. Notwithstanding, retail digital signage had a positive impact on customer wait-time perceptions.

**Observation 11:** Digital signage had an impact in shifting consumer purchases to in-store, self-service options.

**Observation 12:** The Post Office Channel had an impact upon redirecting consumers to alternative out-of-store access points to purchase products/services.

From these and other observations, we advance the following related considerations for an entity studying the merits of adopting a DCN:

1. A well-designed strategy and linked-metrics are critical to the success of a DCN.
2. Revenue gains derived from the sale of anesthetic products/services will be less than that realized from the sale of other products/services.
3. Promotional ads have a greater impact on revenue than general, informational type messages.
4. Retailers should aspire toward customized DCN solutions that best communicate their brand in-store.
5. Consumer behavior can, within certain tolerances, be impacted by digital signage.
6. Awareness is only the first step in creating relevant content.
7. Content refresh will contribute to long-term, sustainable sales growth.
8. Screen placement and customer dwell time are critical considerations.
9. Cost/benefit analysis should incorporate all tangible and intangible elements as they interact with specific goals and objectives of a particular system.