

E-Memory Choice Architecture: Modeling the Use Diffusion of Twitter Archiving System

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ABSTRACT

Twitter archiving systems have been developed to preserve users' tweets. The available methods of organizing tweets for curation include the hashtag, user ID, and keywords. These can be viewed as memory encoding symbols supporting future retrieval of users' social media memories. As Twitter has become a global social media platform, online Twitter archiving systems have transformed from an open platform for archiving tweets to an integrated service managing multiple accounts across platforms. With the changing business models of Twitter archiving systems, usage data has become unavailable publicly. This study collected historical usage data from the API of an online Twitter archiving system, TwapperKeeper, before its acquisition by Hootsuite in September 2011. The valuable system usage data allowed this study to examine the tweet archiving preferences of early Twitter adopters. By mapping adoption-diffusion and use-diffusion models into the web information architecture of the online archiving system, this study analyzed user choice architecture through the system function use.

KEYWORDS

Diffusion of Innovations, Adoption, Use-Diffusion, Analytics, Difference-in-Difference, Information Architecture, Choice Architecture

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INTRODUCTION

As social media platforms have become globally available via the development and use of mobile devices, people have embraced them as an integral part of their daily life, communicating, sharing and recalling memories online. Not only do people create a great deal of data and information through those platforms with their mobile phones or other compatible devices, but they are also concerned with preserving digital traces which can be sorted when needed. Bell and Gemmell (2009) envisioned the future of self-archiving lifelogs by recording and storing e-memories allowing people to recall their experiences online. As Bell (2012) foresaw, various self-archiving systems have been developed to support user demand for capturing and organizing their e-memories from a specific social media platform, or across platforms. Twitter, a global social media platform, enriches the user experience by enabling real-time and concise information communication. Organizing tweets in different ways, the Twitter archiving systems reflect the need to curate specific parts of Twitter messages grouped by hashtags (#), user IDs (@), and keywords. As new social media platforms have emerged, online Twitter archiving systems have transformed from an early focus on providing an open platform for archiving Twitter messages, to an integrated paid service (combining search and archiving across social media platforms with shared hashtags or keywords) and a social media dashboard that manages multiple accounts across platforms (Chang & Zhang, 2016). The current twitter hashtag archiving systems support not only historical data curation, but also live curation. However, none of the system usage data is openly accessible to the public. Understanding Twitter archiving behavior could shed light on future archiving system function design. Since archiving functions involve how data and information should be structured and organized for curation, Web information architecture (IA) characterizing information design plays a critical role in providing wayfinding cues that help locate and navigate content (Jameson et al., 2014).

Proposed by behavioral economists (Thaler, Sunstein, & Balz, 2010), the concept of choice architecture denotes how choice information is presented to influence user adoption decisions. Similar to an information architect who designs information structure within a system, a choice architect designs decision-aid representation, which has an impact on its outcome. In this sense, as information architects take into account the impact of Web IA design on online system usage, they can align Web IA with choice architecture to support human-information interaction design. There is a great deal of literature on the principles and preparations of information architecture and choice architecture design; however, very little specific guidance has been published regarding how metrics can be used to guide design decisions. This research aims to address the measuring of Web IA with choice architecture through the lens of diffusion of innovation theory and use-diffusion theory in the context of Twitter archiving systems. This study collected system usage data from the API (Application Programming Interface) of TwapperKeeper, an online Twitter archiving system for measuring both adoption-diffusion and use-diffusion over time. The study

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