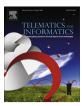Contents lists available at ScienceDirect

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Lowering the barriers for online cross-media usage: Scenarios for a Belgian single sign-on solution

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ABSTRACT

The digitization has led to an ecosystem in which an online media portal has become an essential extension of traditional media and users are enabled to consume news and entertainment via different platforms. These evolutions pose some challenges for the media companies in terms of shifting business models, but they also bring them new possibilities in managing their relations with users. An important first step here is to identify the online users and turn anonymous users into registered ones. Today, however, there is a myriad of logins and passwords one needs when surfing the web, which can make the management of these logins a challenge for users. The Belgian media industry seeks to deal with this challenge by introducing a collaborative nation-wide single sign-on (SSO) system across their digital platforms, called Media ID. This paper provides four scenarios describing the potential outcomes in terms of user adoption and hence market potential of the integration of a SSO service into a regional media system. The scenarios are built upon focus group interviews with media users and in-depth interviews with the stakeholders from the involved media companies. They describe to what extent the innovative service can influence user's online media consumption behaviour but also to what extent the media companies can implement it, two factors that mutually shape each other. In the discussion of the scenarios, requirements to ensure the broad applicability of a SSO service by both media users and media organizations are identified.

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1. Introduction

The media industry is in the midst of disruption resulting from the shift in content from analogue to digital representation (digitization) and the ability of the Internet to deliver all forms of digital content in an unbundled fashion, together with real-time, interactive capabilities (Overdorf and Barragree, 2001). Digitization is especially driving transformation in how media are consumed (Doyle, 2002). Both print media companies and broadcasters are facing this challenge and have to rethink how to retain value in this digital environment. However, despite its challenges, digitization offers also new ways for media companies to reduce costs and unlock more of the intrinsic value of their content (Kakihara, 2010). Also, new possibilities are created for media organisation to manage the relations with their customers and create a personalized media experience. An important first step here is to identify the online users and turn anonymous users into registered ones. However, within the divers media ecosystem, users have many ways and platforms to consume news, information and entertainment. These

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silos of identity amongst the different media organisations, services and platforms hardly interoperate and make it necessary for the user to create and hold multiple identities and profiles. This multitude of logins and passwords one needs when surfing the web can make the management of these logins a challenge. The registration, especially when obligatory, can form a barrier for the users to visit a website and adopt cross-platform usage. The Belgian media industry tries to tackle the challenges of the digitization and tap into the opportunities by integrating an innovative collaborative nation-wide single sign-on (SSO) system across their digital platforms, called Media ID ("Media ID," n.d.). The SSO service aims to provide a common federated identity management framework for user authentication and advanced user management for a diverse range of major players in the Belgian media industry. With the launch, key brands of all media stakeholders (print as well as broadcasting) integrated the SSO service into their digital platforms. They hereby give Media ID the potential to have a market-wide impact by enabling the creation of value added services for the entire media industry. This project is unique worldwide, both in its collaborative nature and in the representation of different media sectors.[1]

However, besides its disruptive potential, the actual outcome of this project is uncertain as both user adoption and the outcome of providing new value-added services within the stakeholders' digital offer can be questioned. The stakeholders have to deal with this uncertainty while developing business strategies within this new SSO system. This paper focuses on limiting the uncertainty. The research question is: Which impact can a SSO service have on the consumption behaviour and on the media industry? And which are the requirements to reach the best possible outcome for both users and media organizations? The service can enable the whole Belgian market system, which is based on the dynamics between the organisations and users (Hanssens et al., 2003). Therefore, we develop, based on user focus groups and interviews with all involved media organizations, future scenarios describing the potential outcome in terms of user adoption and hence market potential of the integration of a SSO service. The paper is structured as follows. The first part explains the concept of a SSO service as a media innovation. This is followed by the methodology section, in which we elaborate upon forecasting an innovation and the conducted user focus groups and expert interviews. Within the third part, the different scenarios are presented and discussed. The paper concludes by defining the user and professional requirements for a successful media SSO service.

2. The context of SSO as a media innovation

2.1. A single sign-on solution

The large number of online platforms and services that exists today, makes the management of online identities, user names and passwords a challenge (Stobert and Biddle, 2014). This creates a password fatigue among many users (Dhamija and Dusseault, 2008; Jøsang et al., 2007). Users cope with the overload of passwords in multiple ways, often by reusing the same or similar and often weak passwords for multiple accounts (Gaw and Felten, 2006; Stobert and Biddle, 2014). However, this can pose some serious security risks (Maler and Reed, 2008; Preuveneers and Joosen, 2015). Others write their passwords down or use password managers to keep track of them (Stobert and Biddle, 2014). Single sign-on systems can form a solution for the password management challenge.

SSO is widely understood as a session/user authentication and authorization process that permits a user to enter one name and password to access multiple applications (Pashalidis and Mitchell, 2003). Authentication is the process of verifying the identity claimed for by a system entity (Shirey, 2007). Authorization is the right or permission that is granted to a system entity to access a system resource (Shirey, 2007). The SSO mechanism permits a user with one single authentication to access all content where he has access permission for after a login at one of the components and eliminates further prompts when they switch applications during a particular Internet session (Hursti, 1997). Multiple single sign-on solutions bridging different companies already exist in the market, with Facebook Connect, Google+ and OpenID as well-known services. Additionally, with the boom of software-as-a-service, web-based single sign-on mechanisms are being used by more and more commercial websites (Miculan and Urban, 2011). However, previous studies reveal that users are still rather un- or ill-informed about SSO systems (Stobert and Biddle, 2014). Also, there is a lack of trust with users not wanting uninvolved actors to be able to see their activities. Especially towards big online players such as Google or Facebook who already collect a lot of personal information, trust is low (Stobert and Biddle, 2014). This indicates a need for more independent SSO systems. The Belgian media organisations respond to these requirements by building a local SSO system for the Belgian media industry. However, as neither user authentication and authorization nor SSO are new to the media industry, one could ask the question: What makes Media ID as SSO media service in Belgium innovative?

2.2. A local SSO system as a media innovation

Most of the widely used definitions of innovation focus on novelty and newness (with an element of valorisation or utilisation) (Johannessen et al., 2001). Innovation is a concept central to economic growth and can be a source of sustained competitive advantage to businesses (Anderson et al., 1997; Schumpeter, 1934). From the managers' perspective, the primary

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[1] The only quite similar initiative, which could be identified, is the Piano Media project ("Piano 12: Project Piano," n.d.). This project, set up within the Slovakian publishing industry, addresses a payment system to provide paid access to small parts of a publisher's site with one bill. However, a direct comparison seems not viable for the Media ID initiative as the Piano project is only a service towards media companies. Media ID however, includes also deep collaboration activities and data exchange between the stakeholders.participating.