ARTICLE IN PRESS

Information Processing and Management xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Information Processing and Management

journal homepage: www.elsevier.com/locate/infoproman

Big Data-enabled Customer Relationship Management: A holistic approach

Pierluigi Zerbino[*], Davide Aloini, Riccardo Dulmin, Valeria Mininno

Department of Energy, Systems, Territory and Construction Engineering, University of Pisa, Largo Lucio Lazzarino 1 56122, Pisa, Italy

ARTICLE INFO

Keywords:
Big Data
CRM
Literature review
Critical Success Factors (CSFs)
Word tree

ABSTRACT

This paper aims to figure out the potential impact of Big Data (BD) on Critical Success Factors (CSFs) of Customer Relationship Management (CRM). In fact, while some authors have posited a relationship between BD and CRM, literature lacks works that go into the heart of the matter.

Through an extensive up-to-date in-depth literature review about CRM, twenty (20) CSFs were singled out from 104 selected papers, and organized within an ad-hoc classification framework. The consistency of the classification was checked by means of a content analysis. Evidences were discussed and linked to the BD literature, and five propositions about how BD could affect CRM CSFs were formalized.

Our results suggest that BD-enabled CRM initiatives could require several changes in the pertinent CSFs. In order to get rid of the hype effect surrounding BD, we suggest to adopt an explorative approach towards them by defining a mandatory business direction through sound business cases and pilot tests. From a general standpoint, BD could be framed as an enabling factor of well-known projects, like CRM initiatives, in order to reap the benefits from the new technologies by addressing the efforts through already acknowledged management paths.

1. Introduction

Big Data (BD) is considered as a potential enabling factor of business process innovation (Fosso Wamba, Akter, Edwards, Chopin, & Gnanzou, 2015; Loebbecke & Picot, 2015) and as a possible new form of value creation, although the mechanisms of such creation are still unclear (George, Haas, & Pentland, 2014). In fact, these innovations are potentially triggered by the current increased data availability in terms of volumes, variety, and velocity, which are data characteristics typically associated with the concept of BD. BD and BD analytics are transforming customer-facing industries (Fosso Wamba, Akter, & Bonicoli, 2013), which are increasingly collecting large amounts of customer data, like customers' shopping behaviour, for enabling a real-time decision making (Barton & Court, 2012; Bean & Kiron, 2013; Davenport, Barth, & Bean, 2012). Companies are coping with customer data spread among an increasing number of data sources, often external or not structured. They are figuring out the potential value of data for generating insights on customers, but they are still struggling to integrate the information stemming from the innovative data sources into the Customer Relationship Management (CRM) decisions (Phillips-Wren & Hoskisson, 2015). Despite this difficulty, some, albeit few, firms have already been able to overcome such a hindrance concretely for CRM purposes: for instance, Sears Holding has been employing BD, gathered from several data warehouses related to its brands, for offering more timely, sharp, and granular personalized promotions (McAfee & Brynjolfsson, 2012); Caesars Entertainment utilizes data from its Total Reward loyalty program, real-time play, and web clickstreams for targeting customers with real-time offers through mobile devices, for improving customer

---

[*] Corresponding author.
E-mail address: pierluigi.zerbino@for.unipi.it (P. Zerbino).

https://doi.org/10.1016/j.ipm.2017.10.005
Received 2 January 2017; Received in revised form 8 October 2017; Accepted 11 October 2017
0306-4573/ © 2017 Elsevier Ltd. All rights reserved.

Please cite this article as: Zerbino, P., Information Processing and Management (2017), https://doi.org/10.1016/j.ipm.2017.10.005

understanding, and for reducing the waiting time for playing for both regular and occasional customers (Davenport & Dyché, 2013). One of the most recent challenges for CRM is to attempt to harness new heterogeneous data sources for developing innovative value propositions, for instance by drawing customer data from social networks (Acker, Gröne, Akkad, Pötscher, & Yazbek, 2011; Diffley & McCole, 2015; Faasse, Helms, & Spruit, 2011; Greenberg, 2010; Sigala, 2011; Trainor, Andzulis, Rapp, & Agnihotri, 2014).

Nonetheless, the exploitation of BD sources in firms could require relevant changes of management factors concerning both the pertinent business practices and the Information and Communication Technology (ICT) portfolio (Dutta & Bose, 2015). To our best knowledge, current scientific literature misses works dealing with how BD could affect development and management of CRM. In particular, this work is an endeavour to figure out how BD may reshape Critical Success Factors (CSFs) of CRM initiatives. Despite a wealth of knowledge about CRM CSFs, literature still lacks works that investigate the relationship between these factors and a potential BD exploitation. Managers and practitioners might benefit from further insight concerning this relationship: it could clear up the current hype that portrays BD, improving its understanding, and it may provide clues on how to potentially generate competitive advantage by means of BD-enabled CRM.

Thus, the objective of this paper is to provide a first answer to the following research question: "*How could Big Data affect Critical Success Factors of Customer Relationship Management initiatives from a holistic perspective?*". Given this purpose, we developed a classification framework for steering a thorough literature review about CRM CSFs, and for classifying its results. Twenty CSFs were identified, and the consistency of the classification was checked through a content analysis. Finally, on the basis of the CSFs, we formulated five propositions about how BD could affect CRM. Both the literature review and the propositions enrich the corresponding research streams, and are an attempt to fill up the literature gaps. In addition, they contribute to pave the way for a concrete exploitation of BD, particularly in the CRM context.

The paper consists of five sections: after the introduction, Section 2 presents a critical overview about BD, CRM, and the link among them, based on the Resource-Based View; Section 3 describes the methodological steps; Section 4 presents the results from the literature review and the consistency check, and the propositions about the potential influence of BD on CRM CSFs we derived; finally, conclusions and future developments are in Section 5.

2. Theoretical background

According to the Resource-Based View (RBV), firm's resources are the ultimate antecedent to firm performance (Wernerfelt, 1984). Barney (1991), highlights that resources in the RBV (I) are distributed heterogeneously across the firm, and (II) their transfer among firms has always a cost. Despite these assumptions, academics have debated which resources truly enable the achievement of competitive advantage, and different definitions of *resource* in the RBV have been proposed, *e.g.* competencies (Prahalad & Hamel, 1990), skills (Grant, 1991), physical assets (Litz, 1996), assets (Ross, Beath, & Goodhue, 1996). Wade and Hulland (2004, p. 109) propose a more comprehensive definition, that is, ``*resources* [are …] *assets and capabilities that are available and useful in detecting and responding to market opportunities or threats*'': assets, both tangible and intangible, are everything a firm can use in producing and / or offering goods or services to a market, while capabilities are repeatable patterns of actions in using the assets (Sanchez, Heene, & Thomas, 1996).

Both knowledge assets (Bharadwaj, 2000) and technology assets, including databases (Ross et al., 1996) and systems for managing stakeholder relationships (Benjamin & Levinson, 1993), are framed as resources in the RBV (Wade & Hulland, 2004). Thus, it is licit to assume that the current enhanced availability of data could be considered as an improved resource in attaining competitive advantage, as well as capabilities for developing knowledge in managing customer relationships.

Accordingly, in the following subsections we present a critical overview about BD, we analyse the different perspective of CRM, and we point out the relationship among the two topics.

2.1. Big Data under a critical lens

The spending guide by the International Data Corporation (IDC, 2015) suggests that the worldwide revenues from BD and business analytics could grow approximately from $122 billion in 2015 to $187 billion in 2019. Large and very large companies will likely play a major role in this expenditure, which should be mostly accounted for service-related costs. In accordance with this trend, the BD phenomenon seems to be an imperative. Yet, its univocal definition is a still unsolved issue. Several academics rely on the paradigm of the Vs by McAfee and Brynjolfsson (2012), which depicts BD as a data set, akin to a data asset, characterized by (I) a huge – but not strictly-defined – Volume, (II) Velocity meant as speed of data creation, and / or (III) Variety in the form of data types and sources. Such a paradigm is evolving with additional Vs (Markus, 2015) like Veracity, intended as quality of data set, or Value contained within the data. Nonetheless, literature proposes other approaches in defining BD, as follows.

Wu, Zhu, Wu, and Ding (2014, p. 102) suggest a more narrow but remarkable approach to BD, claiming that its value is embedded within “*heterogeneous data types, complex intrinsic semantic associations in data, and complex relationship networks among data”*. Thus, any managerial effort to exploit BD should address this multidimensional complexity, and the different Vs might represent an indirect measure of this complexity.

Differently, Fosso Wamba et al. (2015, p. 235) frame BD as “*a holistic approach to manage, process and analyze 5 Vs (i.e. volume, variety, velocity, veracity and value) in order to create actionable insights for sustained value delivery, measuring performance and establishing competitive advantages”*. Therefore, they stress the managerial and business process perspectives, merging them by a

Download English Version:

https://daneshyari.com/en/article/6925967

Download Persian Version:

https://daneshyari.com/article/6925967

Daneshyari.com