Chapter 66

The Role of Geo-Demographic Big Data for Assessing the Effectiveness of Crowd-Funded Software Projects:
A Case Example of "QPress"

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ABSTRACT

The current phenomenon of Big Data – the use of datasets that are too big for traditional business analysis tools used in industry – is driving a shift in how social and economic problems are understood and analysed. This chapter explores the role Big Data can play in analysing the effectiveness of crowd-funding projects, using the data from such a project, which aimed to fund the development of a software plug-in called 'QPress'. Data analysed included the website metrics of impressions, clicks and average position, which were found to be significantly connected with geographical factors using an ANOVA. These were combined with other country data to perform t-tests in order to form a geo-demographic understanding of those who are displayed advertisements inviting participation in crowd-funding. The chapter concludes that there are a number of interacting variables and that for Big Data studies to be effective, their amalgamation with other data sources, including linked data, is essential to providing an overall picture of the social phenomenon being studied.

INTRODUCTION

In the current digital age, we have seen an unprecedented global recession that could be seen to have challenged the willingness of persons to take risk in innovation (Etzkowitz, 2013), but this is not always the case (Singh, 2011). One approach that has been suggested as an appropriate means to help overcome such financial shortfalls is crowd-funding. Put simply, crowd-funding is the procurement of financial

capital from those who want to benefit from a particular innovation (Kshirsagar & Ahuja, 2015; Ordanini et al., 2011). The question that is often asked is how to assess the effectiveness of crowd-funding projects and also how they should be benchmarked. This chapter argued that an important part of this process is the use of what has become called 'Big Data.' Big Data is still a maturing and evolving discipline and Big data databases and files have already scaled beyond the capacities and capabilities of commercial database management systems (Kaisler et al., 2014). Big data is defined as datasets whose size is beyond the ability of typical database software tools to capture, store, manage, and analyse, where the primary characteristics are 'volume, velocity, and variety' (Malgonde & Bhattacherjee, 2014; Zhang et al., 2014).

It has been argued that geography might provide a useful lens through which to understand big data as a social phenomenon in its own right in addition to providing answers to the complexity of social and spatial processes (Graham & Shelton, 2013). Even so, it has been argued that the aggregation of social media as big data is not necessarily social science data, even in the fields of human geography and geographic information science (Wilson, 2014). This chapter shows how using geo-demographic analyses with Big Data can improve the effectiveness of crowd-funded projects.

BACKGROUND

This chapter is in essence looking at effective means for assessing the impact of a crowd-funded campaign supported by advertising. It is argued that geo-demographic factors play a significant role in the effectiveness of crowd-funding projects, particularly those supported by advertising. It is further argued that Big Data can be used to identify trends that go beyond the usual metrics for advertising campaigns – such as impressions, clicks and average position – while at the same time supporting the use of such measures.

Big Data

According to the New York Times, many think Big Data is synonymous with "Big Brother," in the form of mega-corporations collecting masses of surveillance information on their customers or potential customers. However, as this chapter advocates, it can also be of use to smaller entities, such as crowd-funded projects. It has been estimated that Google alone contributed 54 billion dollars to the US economy in 2009 as a result of Big Data, but there is still no clear consensus on what it is (Labrinidis & Jagadish, 2012). Even so, Big Data is something that each business will have to adopt as a normal way to develop business strategy (Woerner & Wixom, 2015).

Crowd Funding

It has been argued that the main objective of crowd-funding is to give entrepreneurs a way of raising money that does not involve banks or venture capitalists, which usually involved giving the customers of the product a stake in it in one way or another (Kshirsagar & Ahuja, 2015). This can be seen as desirable in the current capitalist environment, where banks charge excessive rates of interests and venture capitalists extort shares in profits totally unrelated to the assistance they have actually given a project. Crowd-funding has been used in fields as diverse as archaeology (Bonacchi et al., 2015) and sustainable development (Kunkel, 2015). By its very name it is clear that by targeting potential beneficiaries of a product or service, to ask them to get on board with the funding of something they want, then a

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