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Abstract. Much crowdsourcing research has focused on behavioral and motivational aspects at the individual user level, but very few studies have examined the motivations of organizations for crowdsourcing. The limited extant research has examined managerial and technical factors influencing an organization's decision to crowdsource, but they fail to take into consideration the temporal aspect that motivation may change over time from the initial implementation to continued participation. To address this research gap, this paper presents findings from an examination of the organizational motivations of a large national library to engage in crowdsourcing. Drawing on motivational theory for community involvement and motivations from IT outsourcing literature, the findings show that a national library was motivated by a set of goals that were dynamic and changing throughout the implementation of the crowdsourcing project. These motivations ranged initially from a cost reduction imperative through to improving access, acquiring external expertise, and facilitating social engagement. The study contributes to theory by extending our understanding of the changing nature of motivational factors for organizational crowdsourcing by highlighting the dynamic nature of both the origin and aim of motivation across time. Furthermore, as an additional contribution, we draw a parallel between motivations for crowdsourcing and motivations to outsource and found them to be comparable to some extent.

Key words: Crowdsourcing, organizational motivation, temporality, cultural and heritage institutions, outsourcing.

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1 Introduction

Crowdsourcing is a form of outsourcing in which an individual or organization outsources tasks to a large yet undefined group of people via an open call (Howe 2006; Adams and Ramos 2010; Esteller- Arolas and Gonzales-Lardon-de-Guevara 2012; Rouse 2010). Crowdsourcing is part of a historically significant trend by which corporations target individuals, who Kleeman et al. (2008) call 'working consumers', for value co-creation in completely new ways afforded by Internet-based technologies. Crowdsourcing is used for a variety of commercial purposes; e.g.; production development and configuration, product design, community reporting; and non-commercial purposes; e.g.; citizen science, social good, community work (Schenk and Guitard 2009). While financial incentive is often provided in the examples of idea/problem solving competitions; e.g.; Innocentive.com, Threadless.com, and Amazon Mechanical Turk; there are also information-based voluntary crowdsourcing examples; e.g.; Google's reCAPTCHA-project, GalaxyZoo, OpenStreetMap.org, transcribing Bentham, that work well without monetary rewards or formal contracts (Hammon and Hippner 2012).

Much crowdsourcing research has focused on behavioral and motivational aspects at the individual user level (Zhao and Zhu 2014; Pederson et al. 2013), but very few studies consider the theoretical meaning or the practical implications of crowdsourcing at the organizational level (Schladwein and Bjorn-Anderson 2015). The scant extant research has examined managerial and technical factors influencing an organization's decision to crowdsource, and has found that the decision to crowdsource cannot be based on perceived benefits; rather multiple factors including task, people, management and environmental factors should be considered (Thuan et al. 2013). However, only very limited research has examined organizational crowdsourcing from a motivational perspective. Overall, these studies failed to take into consideration the temporal aspect, that is, motivations may change over time from initial implementation to continued participation. However, in IS adoption literature, there is general consensus that the antecedents; e.g.; motivations, decisions or behaviors, leading to the initial use of an IS are different from those leading to subsequent and continued use (cf. Bhattacherjee 2001; Nov et al. 2010 as cited in Soliman and Tuunainen 2015). Rahim et al. (2010) also found that in relation to IS implementation decisions, motives change within organizations and over time. Research on user motivation to participate in crowdsourcing has found empirical evidence in support of the aforementioned argument that motivational factors dynamically change over time from initial participation to long-term participation. In a recent study, for example, Soliman and Tuunainen (2015) established that user motivation to participate in crowdsourcing changed from initial use to sustained participation. By examining both the origin and aim of motivation, they found that while initial use was driven by selfish motivations; e.g.; curiosity, monetary rewards; continued use was driven by both selfish and social motivations; e.g. enjoyment, non-monetary rewards, altruism. To address this gap in the literature, our study takes a motivational perspective to gain useful insights as to what motivates institutions to adopt and implement crowdsourcing and also highlights the dynamic nature of motivation across time. To better capture the dynamic nature of motivation, following Soliman and Tuunainen (2015) and Rahim et al. (2010), we include both the aim and origin of motivation in our analysis. Hence, drawing on motivational theory of community involvement by Batson et al. (2000) and the origin and aim of motivation, this

paper presents findings from an examination of the motivations for crowdsourcing by the National Library of Australia (NLA) for its part in the Australian Newspapers Digitization Program (ANDP).

The contributions of the study thus are as follows:

From a theoretical perspective, the research contributes to an understudied yet important domain of organizational motivation to crowdsourcing. The study contributes to theory by extending our understanding of the changing nature of motivation for organizational crowdsourcing by highlighting the dynamic nature of motivation by examining both the origin and aim of motivation across time. Thus, it contributes to our understanding of the shifting and multiple purposes of organizational motivation and engagement in crowdsourcing, particularly for volunteer cultural work. Furthermore, as an additional contribution, we draw a parallel between motivations for crowdsourcing and motivations to outsource and find them to be comparable to some extent.

From a practical perspective, in order to facilitate broader, sustainable, and more inclusive collaboration between cultural institutions and volunteers, we must design environments that speak to the needs of both groups (Rotman et al. 2012). To be able to do this, we need to understand what motivates each group and how to structure activities that leverage these unique motivations. Identification and recognition of the dynamic nature of organizational motivation demonstrates the long-term value for not-for-profits and have implications for understanding the likely outcomes of crowdsourcing adoption, implementation and design.

The paper is structured as follows: first the motivation behind the choice of research setting is presented. This is followed by an articulation of related work from the literature and the theoretical foundation of the study. The research method and data collection section is presented next, after which the research findings are summarized from both a static and dynamic view of organizational motivation to cultural crowdsourcing work. Finally a model of the dynamic changes in organizational motivations for crowdsourcing is derived, based on the case analysis. An additional contribution, a parallel between motivations to outsource and motivation to crowdsource is also provided. The paper concludes with an overview of future research and potential implications for research and practice.

2 Crowdsourcing in not-for-profit organizations

Although most crowdsourcing cases cited in the literature focus on applications sponsored by for-profit organizations (Afuah and Tucci 2012), crowdsourcing is increasingly used by not-for-profit (NFP) cultural and heritage organizations to elicit digital volunteerism (Dutton 2011). Through crowdsourcing, digital volunteer workers are embracing new ways and means of contributing to volunteer work, particularly for organizations concerned with the preservation of cultural heritage: galleries, libraries, archives and museums (GLAM) (cf. Holley 2010; Owens 2013; Ridge 2013). Based on the principles of distributed intelligence tasks and open permanent calls where no financial compensation is provided (Kleeman et al. 2008), digital cultural volunteers are tasked with performing simple tasks without the need for specific skills and expertise. Thus, crowdsourcing is seen as a means to support a set of labor-intensive and repetitive

tasks, which include large-scale data-processing tasks such as image classification, video annotation, form data entry, optical character recognition (OCR), translation, recommendation, and proofreading, which computers cannot do well (Holley 2010; Oomen and Aroyo 2011; Benkler and Nissenbaum 2006; Karger et al. 2013). Far from a break with the past, this is a clear continuation of a longstanding tradition amongst cultural institutions of inviting members of the public to help refine, enhance, and support collection development (Smith-Yoshimura and Shein 2011). NFP not-for- profit (NFP) cultural heritage institutions care less about profit or revenue than they do about making the best use of their limited resources to act as stewards and custodians of culture (Owens 2013). Also, cultural crowdsourcing projects serve community goals that are often of historical and national significance and aimed at public good. Hence, it is postulated that their motivation to adopt crowdsourcing is driven by non-profit related motives. Owen (2013) furthermore suggests that the cultural heritage community can re-frame crowdsourcing as engaging with an audience of committed volunteers.

Commons-based volunteer crowdsourcing in the GLAM sector is quite different in terms of ownership, task autonomy and the types of tasks outsourced. For GLAM crowdsourcing initiatives, volunteers contribute towards a common cultural goal where the data, knowledge or other products created from their contributions are overseen and curated by a GLAM institution as the custodian or caretaker of these new cultural assets. Contrary to commercial crowdsourcing systems, GLAM projects often involve relatively mundane and repetitive small-scale contributions such as text translations (Oomen and Aroyo 2011), which may not require formal co-ordination or administrative surveillance; e.g.; leadership or moderation roles. Where simple tasks are concerned, the added value of crowdsourcing does not stem from individual abilities, but from the low-cost realization of tasks on a large scale. While insights into outsourcing and related commons-based peer production systems such as Wikipedia and OSS may be helpful, findings may not transfer to GLAM crowdsourcing projects because of these differences (Marjanovic et al. 2012; Zhao and Zhu 2012b).

Prior studies have examined what motivates volunteers to become involved and then remain engaged in cultural crowdsourcing projects for GLAM institutions (cf. Rotman et al. 2012; Ridge 2013; Alam and Campbell 2012). However, little is known about the motivations of organizations to adopt crowdsourcing, particularly for non-profit cultural crowdsourcing work. The aim of this paper is to gain an in-depth understanding of the various motivations that lead to a cultural and heritage organization to engage in collaborative crowdsourcing. The research question guiding this study thus is: What motivates a cultural and heritage institute to engage in crowdsourcing projects? Our study addresses this gap by examining the motivations of cultural institutions to gain insight into 1) organizational motivations to adopt cultural volunteer crowdsourcing, and 2) the changing nature of these motivations over time.

3 Conceptualizing crowdsourcing

This paper aims to empirically investigate the organizational motivations for cultural crowdsourcing, a recent phenomenon that has emerged and proliferated as a new form of outsourcing (Rouse 2010; Schenk and Guittard 2011). Crowdsourcing shares many characteristics with

Attributes	*Crowdsourcing*	*Outsourcing*
Initiator & role (Estelles-Arolas and Gonzalez-Ladron-de-Guevara 2012; Hammon and Hippner 2012; Lacity et al. 2010)	Public or private commercial and not- for-profit organizations. Host the task/challenge and provide feedback; often select and reward winners	Public or private commercial and not-for- profit organizations. Set out contractual agreement and sometimes be involved in the process
Participant & role (Kleeman et al. 2008; Rouse 2010)	Anyone can participate; usually in large numbers; independent and decentralized; greater access to volunteers; contribute to specified problem/task	Defined contractor; limited by access, availability and affordability; complete specified problem/task.
Sourcing (Rouse 2010; Howe 2006)	Through an open call	Usually through open-tender/ previous relationships
Intent (Liemeister et al. 2009; Schenk and Guittard 2011)	Multiple reasons which largely are initiator specific; can range from cost savings to innovation	Cost savings, improving strategic capabilities, competitive advantage/ innovation
Formal contract (Rouse 2010)	Sometimes a formal contract exists; e.g.; in paid crowdsourcing work.	A formal contract always exists between the parties
Compensation and incentives structure (financial/reputational) (Liemeister et al. 2009; Zhao and Zhu 2012b)	Sometimes financial compensation is provided in paid crowdsourcing work. Sometimes, reputational incentives may be provided in non-paid crowdsourcing work.	Always provided based on contractual agreement
Alignment with business processes; e.g.; provide capabilities not held in-house. (Marjanovic et al. 2012)	Sometimes there may not be a solution to the business problem that has been tasked for crowdsourcing work. Depends on availability and skills of the crowd.	Always desired, however, there can be opportunistic behavior and trust issues,contingent upon contractual specifications
Ownership; e.g.; Intellectual property (Schenk and Guittard 2011; Rouse 2010)	Almost always resides with the initiator	Generally yes; may reside with provider based on contractual agreement

Table 1. Similarities and differences between crowdsourcing and outsourcing.

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project-based or once-off business process outsourcing (Rouse 2010). However, there are also significant differences (see Table 1). Crowdsourcing is directed towards an undefined crowd through an open call (Kleeman et al. 2008) rather than through the allocation of tasks to a specific outside firm or individual. Both provide access to capabilities not held in-house and the contracts and payments are outcome based, but crowdsourcing often does not require any formal contractual agreement (Rouse 2010). Crowdsourcing also provides the opportunity to harness volunteers who might not otherwise be able to contribute (Rouse 2010). Outsourcing is largely dependent on business relationships and financial incentives, while crowdsourcing can have more diverse participant motivation and incentives (Zhao and Zhu 2012b).

4 Related work

Organizational motivations are an understudied yet important factor in the adoption of information systems (Grewal et al. 2001; Rahim et al. 2010; Rahim et al. 2007). Contextual factors for ICT adoption, such as technological, organizational and environmental, are important considerations, but motivation theory offers a suitable theoretical lens to explain why ICT adoption varies between organizations and applications (Rahim et al 2007; Molla and Abareshi 2011). Further, a motivational perspective complements the factor-based and process-based IT adoption research findings (Rahim et al 2010). Understanding motivations is useful to IS practitioners and academics as it helps them to justify the adoption of IS or ICT and to effectively participate in organizational strategic discourses (Molla and Abareshi 2011). This paper empirically investigates the organizational motivations for crowdsourcing, particularly for the cultural and heritage sector and in so doing also extends organizational motivation research to new types of IS systems.

4.1 Organizational motivations for crowdsourcing

Crowdsourcing represents a new Internet-enabled strategy for organizations to source ideas for open innovation (Blohm et al. 2011) and for competitive advantage (Chesbrough 2003). Businesses are driven by various motives to embrace crowdsourcing to accomplish tasks, devise solutions or simply generate business-specific information. One major benefit is cost savings (Howe 2006) which are achieved through the completion of large amounts of work for free or with nominal pay (Schenk and Guittard 2011; Kleeman et al. 2008). Thus, "the benefits of crowdsourcing described in the trade literature are similar to those attributed to outsourcing: cost savings, contracts and payments that are outcomes based (rather than paid "per hour"); and access to capabilities not held on-house" (Rouse 2011, p. 3). A motivation for crowdsourcing is the capacity to harness volunteers who might not otherwise be able to contribute, hence expanding the involvement of customers/users in the design and improvement of products, and in scientific and community projects (Rouse 2011). Other benefits are the improvement in product quality and customer intimacy, and the acceleration of development activities or large routine tasks. Motivational factors include the need to offload peak demand, access affordable

labor, and engage talent from outside the organization or to resolve problems which could be difficult to solve using only internal resources (Sloane 2011; Zhao and Zhu 2012a).

Crowdsourcing is still considered to be in the experimentation phase (Zhao and Zhu 2012a) and is mostly used for design and development purposes (Warner 2011). Schenk and Guittard (2011) identify various motivations for a firm to adopt crowdsourcing; i.e.; cost, quality of output, network externalities, risk reduction, problem solving, and organizational core competencies. Often the adoption of crowdsourcing is driven by factors such as human resources, timeliness, financial situations, functionalities and environment (Zhao and Zhu 2012a), and also in some cases, for disaster management (Eustace and Alam 2012). Pederson et al. (2013) identified different reasons for government use of crowdsourcing in their literature review of crowdsourcing literature. For example, a government agency looking for community input on improving services may use crowdsourcing as an extension of traditional approaches (c.f. Brabham (2012)'s research on urban planning and infrastructure improvement process). Government agencies can use crowdsourcing to expose new ideas and provide improved transparency and accountability or to gather ideas for improving functions and services (Pederson et al. 2013). Small to medium-sized enterprises use it to build new competencies that normally cannot be implemented or developed due to a scarcity of expertise (Zhao and Zhu 2012a).Hence, research on the motivations of organizations to adopt and continue to use crowdsourcing is fragmented and in its early stages with little theoretical agreement.

4.2 Cultural and heritage institutions and motivations for crowdsourcing

Several studies have investigated crowdsourcing motivations in different contexts, such as for innovation contests (Zheng et al. 2011), idea competitions (Leimeister et al. 2009), citizen science (Rotman et al. 2012), financial incentives (Kaufmann et al. 2011) and for-profit organizations (Brabham 2012; 2010). However gaps exist in crowdsourcing research on organizational motivations for participation (Marjanovic et al. 2012). In particular, there is no research on cultural institutions such as GLAMs' motivations for crowdsourcing (except cf. Estermann 2014). The majority of the studies, however, are descriptive in nature with no theoretical orientation (cf. Holley 2010; Estermann 2014; Oomen and Aroyo 2011; Owens 2013).

Due to the need to improve discovery and access to rapidly growing collections of digitized cultural material, crowdsourcing has been seen as a way to create "a more open, connected, and smart cultural heritage" by involving the users of cultural data (Oomen and Aroyo 2011, p.147). Hence, cultural and heritage institutions have recently come to recognize crowdsourcing as a means to support a set of labor-intensive and repetitive tasks, which include correction, transcription, classification, contextualization and co-curation of digital material (Holley 2010; Oomen and Aroyo 2011; Owens 2013). Holley (2010) articulates that libraries could benefit from crowdsourcing by utilizing the knowledge, expertise and interest of the community. Hence, this research aims to address to this gap.

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4.3 Organizational motivations for outsourcing

Crowdsourcing can be seen as an alternative form of outsourcing (Schenk and Guittard 2011, Rouse 2011) so consequently, IT outsourcing (ITO) research on the motivations for outsourcing IT (Lacity et al. 2010) is relevant for this study. IT outsourcing (ITO) researchers have extensively studied the motivations for outsourcing IT (Dibbern et al. 2010). Based on Simon's (1960) decision-making model, Dibbern et al. (2004) devised five stages of ITO and carried out a literature review on the ITO decision phase (1. why, 2. what, 3. which) and the ITO implementation phase (4. how, 5. outcome). Lacity et al. (2010, p. 404 - 409) studied 164 empirical research articles from 1992 to 2010 and found cost reduction, focus on core capabilities, access to skills/expertise, business process improvements, technical reasons and political reasons as major motivations to outsource (see Figure 1; the numbers in the brackets are the frequency of occurrences of the variables found in the ITO literature review by Lacity et al. 2010 and are indicative of their importance in ITO decisions).

Since the inception of ITO research, cost reduction has remained an important driver for a majority of client firms (Lacity et al. 2010). Williamson's (1975) transaction cost economics (TCE), the most used theory in ITO research, assumes that companies make outsourcing decisions based on an economic rationale, considering both production and transaction co-ordination costs (Costa 2001). The second important driver views outsourcing as a strategic decision and argues that non-core activities should be outsourced to gain greater focus on their core functions (Dibbern et al. 2004; Lacity et al. 2010). It is assumed that "organizations should focus on their core competencies and activities, while contracting out peripheral activities that the market can perform more cost-effectively and/or which distract an organization from its core activities" (Costa 2001, p.218). Technical considerations such as access to skills/expertise, and a lack of resources or time is the third most frequently studied ITO decision driver (Lacity et al. 2010) and is captured by resource-based theories and resource dependence theories (Dibbern et al. 2004). The resources include financial, physical, human and organizational (Barney 1991, 1995 cited in Costa 2001). The next two most frequently examined relationships show that client firms outsource IT when they desire or need to improve a client's business or processes or they seek to gain access to leading edge technology available through the suppliers and which may not be available in-house (Lacity et al. 2010).

The use of outsourcing as a strategy to fill gaps occurs when a firm is unable economically to generate the necessary resources or capabilities internally (Costa 2001). Often IT outsourcing differs depending on the function being outsourced; e.g.; help desk services, due to an increase in workload (Radding 1995 cited in Costa 2001). Political reasons include the desire to eliminate a burdensome function, to enhance a career path, or to maximize personal financial benefits (Lacity et al. 2010).

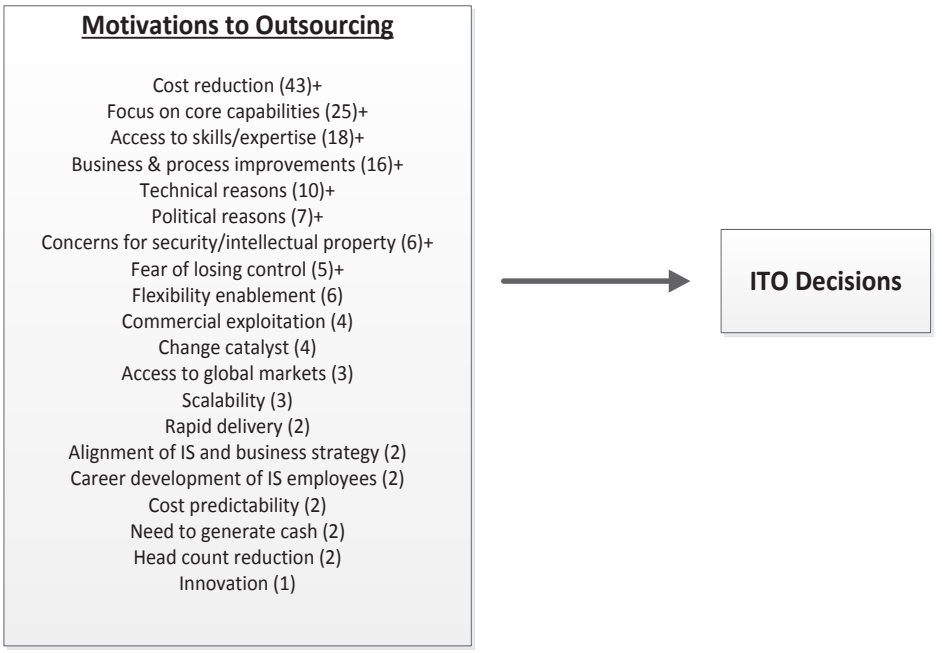

Figure 1. Organizational motivations for outsourcing (adapted from Lacity et al. 2010, p.408).

5 Theoretical foundations

5.1 Motivational framework for community involvement

Researchers have found a wide variety of reasons, at both the individual and group level, that explain why people participate in online collaborative activities (Rotman et al. 2012). Previous studies identified a wide range of motivations for user participation; ranging from fun, glory and money to the enhancement of skills (Lakhani and Wolf 2005; Nov, Naaman and Ye 2010; Tausczik and Pennebaker 2012). Several studies have used general motivational theories to formulate motivational frameworks to explain participation in open source software development, online communities, and crowdsourcing applications (See, for example, Rotman et al. 2012; Kaufmann and Schulze 2011; Leimeister et al. 2009; Lakhani and Wolf 2005; Batson et al. 2002). Most of these frameworks are devised for crowd participation rather than organizational motivations to engage in crowdsourcing. Batson et al. (2002) offered a general model of motives for participation that stimulate community involvement which can offer explanations for the motivation of both the crowdsourcing initiator and the participants to adopt/participate in crowdsourcing. For example, Rotman et al. (2012) utilized Batson et al. (2000)'s generic motivational model in their study of citizen science projects to explain scientists' motivations to

participate in crowdsourcing. They found that both scientists and volunteers presented egoism as the primary motivation for engagement. However, after that point, recognition, altruism and collectivism played important roles in their decision to continue their participation. Batson et al. (2002)'s model had been selected as a general motivational framework against which findings will be compared, as it emphasizes the role of motivation in building and sustaining community involvement, which is needed for GLAM collaborative projects. It also provides a generic collaborative framework for the motivational analysis of business activities that do not need to be extensively aligned with the business processes within an organization, as is required in the case of outsourcing.

Batson et al. (2000) differentiated four types of motivations for community involvement: egoism, altruism, collectivism and principlism, as illustrated and defined in Table 2. As sources of community involvement, each of these four forms of motivation has its strengths and weaknesses. Batson et al. (2000) further envisaged that more effective efforts to stimulate community involvement may come from strategies that orchestrate motives so that the strengths of one motive can overcome the weaknesses of another. Of the various possibilities, they recommend combining either altruism or collectivism strategies with principle to stimulate community involvement. This is an important consideration for this study as NFP cultural and heritage institutions are perceived as being dedicated to public good benefits.

5.2 Origin and aim of motivation

Studies investigating what motivate users or organizations to participate in crowdsourcing have only viewed the origins of motivations; e.g; intrinsic and extrinsic motivations. However, to explain how these motivations change over time, it is important to include the aims of motivation in the analysis. As mentioned earlier, Solimann and Tuunainen (2015) addressed this research gap in user motivation for crowdsourcing by including both the origins and aims of motivation. Rahim et al. (2010) developed a generic theoretical motivation model for IS implementation decisions based on both the origin and aim of motivation. In a similar disposition, we also draw on the psychology literature (Toates 1986; Maehr & Braskamp 1986) on organizational motivation for crowdsourcing by analyzing two specific dimensions: 1) origin of motive; i.e.; source, and 2) aim of motive; i.e.; type. The origin of motive refers to the source (internal or external) from which a need or drive develops within an organization to act in a certain manner. The motivation aim dimension can be divided into two types of motivation for our analysis, following Rahim et al. (2010): techno-economic and socio-political. Techno-economic motives aim at improving performance, whereas socio-political motives are derived from external forces or to exert socio-political pressure. Unlike techno-economic motives, socio-political motives are not intended to gain immediate direct economic benefits (Rahim et al. 2010, p.1908).

Motive	*Ultimate goal*	*Strength(s)*	*Weakness(es)*
Egoism	Increase one's own welfare	Many forms; easily invoked; powerful	Increased community involvement relates to motive only as an instrumental means or unintended consequence
Altruism	Increase the welfare of one or more other individuals	Powerful; may generalise to a group of which other is a member	May be limited to individuals for whom empathy is felt; increased community involvement relates to motive only as an instrumental means or unintended consequences
Collectivism	Increase the welfare of a group or collective	Powerful; directly focused on common good	May be limited to a group
Principlism	Uphold some moral principle; e.g.; justice.	Directed toward universal and impartial good	Often seems weak; vulnerable to rationalisation

Table 2 Four motives for community involvement (adapted from Batson et al. (2000)).

6 Research approach

The study adopts a qualitative single case study approach; exploratory and interpretive in nature (Walsham 1995). The rationale for a qualitative interpretive study is to develop an in-depth understanding using a single information-rich case (Eisenhardt 1989) that enables a deeper understanding of organizational motivation in cultural crowdsourcing environments.

6.1 Research case

This study examines the crowdsourcing mechanisms deployed in the Australian Newspapers Digitisation Program (ANDP) (see http://trove.nla.gov.au/newspaper?q). The ANDP is an on-going large-scale project developed by the NLA in collaboration with Australian Newspaper Plan (ANPlan), and State and Territory Libraries (see www.nsla.org.au/projects/anplan). The project provides an online full-text searchable digitised newspaper resource of out-of-copyright Australian newspapers from 1803 to 1954. However, during the initial optical character recognition (OCR) process, numerous errors were recorded which greatly limited the searchability of the collection; e.g.; missing/wrongly recognized letters/words. Unfortunately, the NLA did not have sufficient resources to rectify the errors itself and due to budgetary constraints, could not

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outsource the process to a contractor. Thus, crowdsourcing was seen as a potentially viable solution. The crowdsourcing aspect of the ANDP was implemented in three phases: 1) design and development 2) beta launch, and 3) operationalization into Trove (the NLA's digitized resource system). Since its beta launch in 2008, 100 million lines of text have been enhanced/corrected, and 2 million tags and 60,000 comments added by 77,042 registered users. There are, on average, more than 6,000 registered users actively contributing to the collection each month (cf. Ayres 2013 for further detailed statistics on user engagement). The library has estimated that this equates to more than 425,000 volunteer hours, or 270 standard work years. Costed at the NLA's lowest rate of pay, this equates to more than AU$17 million of contributed effort (Ayres 2013).

Interviewee pseudonym and role	*Comments*
Director, Collaborative Services. NLA	Previous project manager (2005-2006) of ANDP. Responsible for delivery of newspaper content and Trove.
Trove Support Officer, NLA	Member of original ANDP team. Now also part of Trove.
Senior Trove Support Officer, NLA	Mostly worked for the broader Trove services until joining the newspaper team in 2010.
Lead IT Architect (programmer), part time, NLA	Has been involved since 2006.
Project Manager and IT manager of ANDP team, NLA	External appointment; joined NLA in 2007. 10 years of experience in national and international digitisation projects. Also publishes under the name of Holley (2009, 2010).
Director, Collection management and access, State library of Victoria	ANplan member library since the beginning. Victoria library contributed the most digitised newspapers of all states.
Coordinator, Discovery Services, State Library of Queensland	ANPlan member library contributing digitised newspapers. Also actively participated in Wikimedia foundation and Picture Australia project.
1.Manager, Collection services 2.Front desk, Access and Information 3.Book team leader State Library of New South Wales	ANPlan member library. Three representatives joined the teleconference. One of the participants also actively carries out text correction 10 hours per week.
Senior subject specialist	ANPlan member library. Supportive of crowdsourcing collaboration as an adjunct to library services.

Table 3. Primary interviewee details of NLA staff and State and Territory Library Representatives.

6.2 Data collection and analysis

Triangulation across data sources (multiple informants at different levels and affiliations, from different stakeholder groups and across sites) and across data collection methods (interviews, documentation and website observation) were combined with a pluralist approach to data analysis using multiple theories, namely motivational theories (cf. Batson et al 2000), which together served to strengthen the rigour of emergent concepts (Eisenhardt 1989). Primary data was obtained from interviews conducted with a cross-section of project stakeholders. Overall, twenty-one semi-structured interviews were conducted with stakeholders during 2011-2012 with each interview lasting between 1 to 2 hours. Primary interview data was gathered from NLA staff and the ANDP project team (5) and ANPlan State and Territory libraries (6) (see Table 3 for details on the 11 primary interviewees). Supporting interview data was also collected from text correctors (7) and general Trove users (3); i.e.; those who use Trove collections but do not carry out text correction. Participants were selected using purposeful sampling and the snowball approach (Patton 2000). Data and background material were collected from other extant sources: NLA project documents and reports, user surveys undertaken by the NLA, media articles, the ANPlan website, the Trove forum and extant literature on the case study (cf. publications by Holley 2009; 2010). The first author also registered as a text corrector on the Australian newspapers site in order to gain hands-on experience of text correction and to obtain access to the Trove forum.

All interviews were transcribed and NVivo was then used for textual content analysis using a thematic data analysis technique where data collection and analysis were conducted in cycles to iteratively explore emergent themes (Saldana 2009). The coding was conducted by the first author, with the second author acting as a judge. The average initial agreement among the authors was 89%, with the coding for the remaining 11% resolved through discussion. We employed open coding first to flag each instance where interviewees communicated motivations. During second order coding, these instances were clustered into conceptual categories. Coded data was also analysed iteratively, alternating data coding with the investigation of theories that fit the emerging interpretation (Saldana 2009). The goal-oriented motivational framework devised by Batson et al.'s (2000) was found to provide a more coherent fit between theoretical explanation and data (see Table 4). The overall findings were validated by sending them back to the interviewees for review.

7 Findings

In this study, we gain insights into the organizational motivations for participating in a cultural and heritage crowdsourcing initiative; i.e.; ANDP and how motivations change over time from initial to continued participation. The following observations can be drawn from the data analysis. First, a summary of the static view of organizational motivations for crowdsourcing is discussed, illustrated with an in-depth analysis of the qualitative findings emerging from the interviews. Then, dynamic changes in organizational motivation are presented from case data.

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Broad categories (derived from coding)	*Constructs (derived from coding)*	*Type of motivation (Batson et al. 2000)*	*Aim of motivation (Rahim et al.)*	*Origin of motivation (Rahim et al.)*	*Temporality*
Resource constraints	Cost reduction Focus on core capabilities	Egoism	Techno-economic	Internally sourced	Initial participation
Organizational Culture	Social/political environment Innovation and leadership	Egoism Principlism Altruism	Socio-political	Both internally and externally sourced	Initial and long-term participation
Engagement	New way of engaging Enriched collection and increased use Utilization of external expertise Social engagement Collaboration Social capital	Altruism Collectivism	Socio-political	Externally sourced	Long-term participation

Table 4. Categorization of Library's motivations for crowdsourcing from case data.

7.1 Library organizational motivation for crowdsourcing

The organizational motivations for implementing and participating in crowdsourcing exhibit a limited yet dynamic range. Echoing findings from previous studies on ITO and the organizational use of crowdsourcing (Schenk and Guittard 2010), the NLA initially used this opportunity to engage a large number of the public to enhance data. Holley (2009, p.12) reflected on the publication-related ANDP:

> "The best way to improve accuracy may not rely on a technical solution but on a manual method of humans correcting the mistakes of a machine. This was ruled out before as being too labour intensive, but that was before the advent of Web 2.0 technologies, social networking and user involvement. If we can harness the energy and time of our users and their desire (as strong as ours) for the OCR to be improved, who knows how accurate we can get it?"

The main purpose, thus, of the ANDP was to correct poor OCR to improve the indexing and the search facility. To enhance the data further, tagging and commenting was also enabled. As the NLA became involved, they realized outcomes were larger than mere increased usage or the ability to tap into the external expertise of the public; it also resulted in a higher level of social engagement, active collaborations with and between stakeholders, and the development of social capital. Hence, driven by initial motivations such as resource constraints and innovative culture, the NLA adopted crowdsourcing to improve the poor OCR. However, over time, further motivations; e.g.; social engagement, unfolded as they engaged and assessed outcomes; e.g.; increased use. This dynamic organizational motivational framework was strongly affected by the NLA's egoism-based goals as well as external goals such as altruism, collectivism and principlism.

The organizational motivational influences were first categorized into three broad themes: 1) resource constraints, 2) organizational culture and 3) engagement (see Table 4). Then, Batson et al.'s (2002) motivational model for social participation for common good was used to provide an explanatory lens to describe the organizational motivations for crowdsourcing observed (identified in Table 4 in the column - Type of motivation). Finally, the aim and origin of the motivations were mapped across time from initial participation and long-term participation (Table 4). In the following sections, each of the organizational motivational categories and their constructs is explained with vignettes and insights derived from the interview and extant data analysis.

Resource constraints. The primary motivation for the NLA to engage in crowdsourcing was *egoism-based motivation* based on an economic rationale to find an alternate cost effective method of correcting poor OCR data. This initial choice was due to the human and budget resource constraints within the library. Hence, the key compelling force driving the NLA to crowdsource was (see Table 4):

- Cost reduction
- Focus on core functionalities

Crowdsourcing may reduce the cost of performing some activities as most of the time remuneration is low or even nil (Schenk and Guittard 2010; Howe 2006). In terms of the NLA, crowdsourcing provided a way of achieving valuable outcomes for which the library would never have had the time, financial or staff resources to achieve on its own or through traditional outsourcing (Holley 2009). Crowdsourcing was an attractive option for the NLA due to budgetary and human resource constraints. Crowdsourcing provided the NLA with an opportunity to improve the quality of OCR in a highly cost effective way. The project support officer confirmed this by saying:

> "So yes the idea of text correction was a way to improve the OCR data by getting people with an interest in it involved and avoiding the other situation which - because the only way to get perfect OCR data is through human intervention with these old newspapers it meant that we weren't then having to pay a vendor to go and that may not have been perfect anyway because some of the characters are quite difficult to read."

Other State library partners also agreed with this claim, as confirmed by a NSW library help desk staff member:

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> "To actually have a group of or asking a group of dedicated volunteers who were motivated, to go in and correct text which otherwise no institution would have had the resources to correct. I think it's a wonderful way of enhancing the database and getting a small community of volunteers to get involved in a project."

OCR data correction was viewed as a non-core activity, as managing the process of digitization of the newspapers and quality is more the core functionality of the NLA. Text correction is a time-consuming process, a sentiment expressed by a Victoria library representative as follows: "I mean from a purely pragmatic point of view, we were never going to have the time to do it ourselves". Hence, the library resorted to crowdsourcing for OCR text correction to offload the workload related to the enormous amount of text correction which needed to be done. Due to the human resource and time constraints, they decided to crowdsource this non-core activity; i.e.; text correction, and focus on the core capabilities of building their digitization capabilities and workflow management.

Organizational Culture. The organizational culture-related motivational influences were (see Table 4):

- Supportive social and political environment and
- Culture of innovation and leadership

Leadership and innovation represented the egoism-based motivations of the library as they aspired to be innovative by digitizing newspapers on a large scale. The use of crowdsourcing in the cultural sector is in its infancy (Holley 2010). Thus, the adoption of crowdsourcing to enhance poor OCR again demonstrated that the NLA is an innovative leader in the cultural sector. Innovation also demonstrated the altruistic aspirations of the library as online full-text searchable digitized newspapers have high utility and contribute to the common good of society by helping preserve Australian history. Altruism can play a substantial role when the work is positioned to contribute to the greater good (Ros et al. 2011).

Generally, the political and social environment within the NLA was positive and supportive of new ideas. The partner institutions were supportive of this initiative as well. Even though they had initial concerns about the quality of data, vandalism and moderation requirements, these fears were soon allayed as there was no vandalism evident in practice. Data quality was less of an issue, as the corrections were saved in layers and the original image of the newspaper was always available to verify content. The new Strategic Plan (Strategic direction 2012-2014, http://www.nla.gov.au/corporate-documents/directions) for the Innovation and Resource Sharing Division now takes into account significant changes in user expectations, technology, and the wider environment, including "…the expectation of some users that they will not be passive receivers of information, but rather contributors and participants in information services, and thus will be able to share ideas and information". The Lead IT architect summed up NLA's culture and organizational norms:

> "The management here is interesting, it's hard to get their support to do anything, they're not proactive but on the other hand, they're not reactionary as well. If you try something, they don't try and kill it or nip in the bud. When they see an idea that they might not necessarily agree with, they'll just let it run rather than kill it. So that's good."

However, librarians have their own way of curating and indexing which is an example of principlism: "upholding one or more principles dear to one's heart" (Batson et al. 2000). NLA achieved this by deliberately asking the public to carry out labor-intensive tasks in an error-free manner; e.g.; correcting OCR text, hence retaining control over the original collection. For example, the text corrections were stored in separate data layers in the database which kept the original OCR and digitized images separate. They requested the public to do simple secondary enhancements of collections through tagging and commenting, which can be deemed as low level work requiring no particular expertise. Hence, political reasons for crowdsourcing included the desire to transfer the burdensome repetitive task of OCR error correction to an external crowd. This motivation is also supported in outsourcing literature (Lacity et al. 2010).

The NLA is regarded as one of the world's leading libraries (Ayres 2013). It is the third largest library after the British Library and the Library of Congress. It has established itself as an innovative organization that embraces change enabled by new technologies. The project manager, who is an expert in librarianship, pointed out:

> "There is this proven track record of demonstrating internationally to the library community that we can figure things out and do projects in an innovative way. We're exceptionally unusual- no other national library in the world says that they serve the general public; this is highly unusual. The National Library is without a doubt the best library in Australia and everybody would agree with that."

The Australian Newspapers Digitization Program (ANDP) (aka Trove) is a significant innovation to preserve Australian history and heritage. The NLA was the first library in the world to digitize newspapers on this scale. The crowdsourcing aspect of the ANDP is innovative and pioneering in the world context, using Web 2.0 principles successfully to achieve greater outcomes. As the project manager articulated:

> "How can crowdsourcing activity actually change what libraries are doing, and how should it change that to bring benefits at a time when there's even less money than there normally is. So it was taking everything we know about crowdsourcing but directly applying it to libraries and archives, in particular archives, because we're the only library that's really done it to any extent. To the best of our knowledge, no other library or newspaper service worldwide had implemented user correction of text, or even considered doing so as an option."

Hence, NLA's decision to outsource was one of innovation rather than strategy (Rouse 2010). Though there is very limited evidence in the outsourcing literature that innovation drives outsourcing decisions, in this crowdsourcing case study, innovation played an important role.

Engagement. Engagement showed elements of both egoism and collectivism. Engagement-related organizational motivations can be seen from two broad perspectives (see Table 4):

- Engaging in a new way to enrich a collection using external expertise
- The social side of engagement resulting in social outcomes such as community engagement, collaboration and social capital.

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As previously discussed, libraries are in transition (Holley 2010; Yoshimura-Smith and Shein 2012). The most radical change to date was the arrival of the Internet (Oomen and Aroyo, 2011). More recent Web 2.0-based innovations are opening up new ways for libraries to interact and engage with the community. It also requires and results in changes of mindset of the participants—moving towards one of empowerment, of contribution and engagement (Adams and Ramos 2010). The Australian Newspapers beta service has found that users want to engage and be involved with full text newspaper data in new ways (similar to Wikipedia, Flickr, Amazon etc.). Through Trove, the ANDP provided a mechanism to extend volunteering to online means. Holley (2011) commented on the need for new engagement strategies based on her involvement with the ANDP:

> "The role of libraries, and the need for us to go further afield, out into the community, with as much of our publicly funded resource as we can. The need to involve people in our organizations, to benefit from their intellectual capital; I think that those are really critically important things today, that perhaps people didn't recognise about libraries some years in the past."

This reinforces that the motivation for crowdsourcing acted as a change catalyst to innovate new ways of engaging with library users, as can be found in the outsourcing literature. Further, the major benefit to NLA was that the quality of the data was improved for all users through text correction, resulting in more accurate keyword searching. The community became involved and engaged in enhancing and enriching the resource by adding value to the data; e.g.; by the addition of comments, tags, ratings, and reviews. Metadata was also added to the collection which provided new insights, missing pieces etc. Hence, the service added value in two areas, as the director of discovery services of the State Library of Queensland explained:

> "It adds value in two main areas. One in getting corrections made to the text because it's coming from newsprint and microfilm which is notoriously blurred. It obviously means you've got much greater accuracy in your searching and you've got much greater accuracy actually in the text. But I think the value that you get in terms of engagement with the audiences and having that notion of people who've got no other investment other than they want to see things done correctly, working with libraries to make that content more searchable and more accessible and more able to be discoverable is the value, is the greatest value that comes from it."

Also the Australian newspaper's site has seen continuous growth in its usage over time. This resulted in the increased usage of the library's digital content and generated positive network externalities (Schenk and Guittard 2011). The project manager proudly said:

> "From day one, with no publicity or release, the text correction activity has never ever stopped. I did a graph at some point to try and find the busiest times of the day and at that point, I didn't know it never stopped, so I expected to see it dip at night or something and that didn't happen. It exponentially increased."

Most organizations venture into outsourcing and crowdsourcing to tap into external expertise (Rouse 2010; Lacity et al. 2010; Adams and Ramos 2010). The Australian newspaper's site provided a way to utilize the knowledge, expertise and interest of the community to improve the

indexing and search facility through OCR text correction. The tagging and commenting facility was used to enhance the collection, and sometimes even to identify errors in news reporting. They successfully utilized the resources of genealogists, authors, researchers and a retired skilled labor force to act as experts in text correction. A Queensland Library representative shared her views on crowdsourcing to tap into external expertise:

> "You're actually tapping into all of the knowledge of all of those individuals who are out there, and I think it's great, because there will always be someone who may know something more than library staff. If they can contribute to enhancing our description of an item, I think that's wonderful."

A secondary but very significant outcome was that the library harnessed a high level of social engagement from its users (Holley 2010). The primary motivator for embarking upon collaborative text correction was to improve data quality and this had been a success. However, the social impact the service had and still has in the community and on individuals was equally as important to users as the improvement to the data. "Social engagement is about giving the public the ability to communicate with us and each other; to add value to existing library data by tagging, commenting, rating, reviewing, text correcting and to create and upload content to add to our collections" (Holley 2010, p.1). Giving control to users and entrusting the community to play such a crucial role in the development of a service helps build a dedicated, responsible, engaged and committed user base (Hammon and Hippner 2012). It was evident that the crowdsourcing activity in the context of the Australian newspaper service

- actively involved and engaged the community with the library and its other users and collections, demonstrating the value and relevance of the library to the community by the high level of public involvement;
- strengthened and built the user's trust in and loyalty to the library. The users did not feel taken advantage of because libraries are non-profit;
- encouraged a sense of public ownership and responsibility towards cultural heritage collections through the users' contributions and collaborations.

The following comment echoes the above claims:

> "A lot of the value is in its bringing active participation by our community in the work of the library which of course raises awareness of what the library is in the community and what our collection holds and the value of our collection and library to the community." (Director, Collection Management and Access, State Library of Victoria).

Most text correctors reported that they were collaborating with the library on this project, even though they were doing this for their own interest. NLA also believed that text correctors were collaborating rather than contributing. Adding new content is a contribution but working on an existing library collection for data enhancement and text correction can be perceived as collaboration. The project manager clarified: "they are collaborating with us, rather than contributing, because they're working on something we've already given them."

Generally, the nature of the task did not require any collaboration between text correctors. But the top text correctors did collaborate on establishing text correction guidelines for a more

accurate representation of the actual text by forming a group to produce a text correction guideline. A guideline for tagging was also prepared by the correctors. A senior Trove officer welcomed this initiative and said:

> "I think there are all kinds of communities. They haven't developed social bonds with each other. But it's more that they come together very passionately around questions like how to represent an em-dash. That's why I called them a community. They're capable of collaborating. I think the guidelines are really interesting because that's a piece of work that they have collectively built. It will be owned by the text correctors who put time into it and the ones who are most passionate and involved."

Other forms of collaboration arose, for example, small formal and informal collaborative groups formed and the text correctors collaborated with each other for their own purposes using the Trove service or the forum group facility. In this paper, this phenomenon is described as 'pockets of collaboration'. For example, genealogists informally helped other genealogists but the Rockhampton Trovers met every Tuesday to correct newspapers in a café while the Light Railway Researchers (LRRSA) tagged newspaper articles to support railway research. There is potential to create social capital building through the Australian newspaper service. Social capital refers to the resources accumulated through the relationships among people (Nashapiet and Ghoshal 1998). Putnam (2000) distinguishes between two forms of social capital creation: bonding and bridging. Bonding takes place between individuals of a similar type through establishing strong ties, whereas bridging occurs among socially heterogeneous groups when members of one network connect with members of other networks to seek access to, acquire information and gain support. Weak ties to the member's network facilitate opportunities for establishing contact across multiple networks and provide access to external resources and brokerage opportunities (Lee et al. 2010). In the context of text correction, it is evident that bridging social capital was created through weak ties among text correctors and the organization. The organizational enabling conditions also supported the creation of social capital. For example, the crowdsourcing platform was particularly useful in enabling the NLA to establish new relationships with clients outside their immediate network; e.g.; all states and even overseas text correctors from all walks of life. The crowdsourcing application provided a platform for participation that encouraged users to add value or exchange information through social tagging, commenting and forum posts. There were many instances in the Trove forum where a Trove user/text corrector sought assistance with their research and other Trove users/text correctors responded with valuable information. Text corrector's and Trove forum user's social interactions generated social capital for themselves and their networks. The power users formed an informal association to create the text correction guideline for the site. This guideline was initiated and then generated by the top correctors with assistance from the NLA. But this association was based on weak ties where it linked people across time and distance through less frequent communication. Hence, bridging social capital was created. Hence, the crowdsourcing platform, including the forum, can increase weak ties because technology enables such ties cheaply and enables them to be easily maintained (Boyd and Ellison 2007). This had resulted in social capital for individuals and the organization, as stated by the project manager:

"There's an idea in sociology of social capital: referring to the organizations out there that do positive work in the community and make it what it is. Help poor people, lonely people, sick people etc. but also develop the sense of community and do a great deal for the psychological and sociological health of people. Australian Newspapers Beta is one such constructive entity. Helping people come to terms with their past, helping them define themselves. It's a really big thing and is a contribution to the health of the community."

7.2 Temporality: dynamic changes in library organizational motivations

Dynamism in organizational motivation was clearly evident in this study which highlighted the shifting and multiple purposes for cultural crowdsourcing engagement. Three stages were identified as important with each epoch having different motivational factors that influenced the crowdsourcing decisions that were made: 1) the design and development stage; 2) the Beta launch stage; and 3) the operationalization stage (see Figure 2). These stages can also be mapped onto the five ITO stages as devised by Dibbern et al. (2004) (see Figure 2).

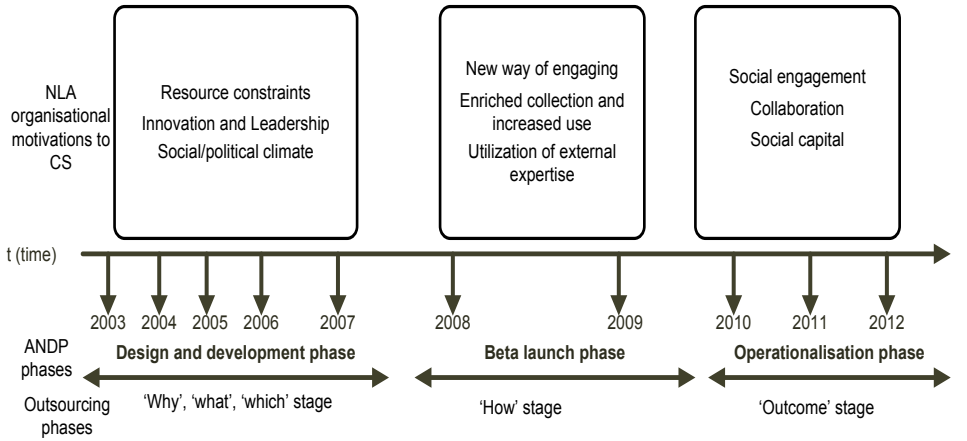

Figure 2. A staged model of temporality in NLA's organizational motivation for cultural Crowdsourcing.

As discussed earlier, the ANDP started as a cost reduction exercise due to human and resource constraints, but evolved into a community engagement initiative. The project was nurtured within NLA's social and political environment and provided an opportunity to situate the NLA as a leader and innovator within the GLAM sector (c.f. Alam and Campbell 2012). As the NLA engaged in crowdsourcing, benefits such as an enriched collection through improved searchability and tags; increased usage through new ways of engaging with clients and access to external expertise became important motivational influences. Finally, as a consequence of their engage-

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ment in crowdsourcing, larger outcomes became prominent during the outcome stage, such as social engagement, new collaborations and the development of bridging social capital which, in turn, became the motivators for operationalization. Holley (2009, p.6) summarized it as follows:

> "The community are adding huge value to our collections and services and, in turn, we are encouraging a sense of public ownership and responsibility towards cultural heritage items, many of which hold significance for our nation. We build trust and loyalty of our community and through the activity we can demonstrate the relevance and value of libraries in our society today."

The findings highlight the importance of the organizational and relational mechanisms needed to support the motivation for crowdsourcing participation. The NLA employed a set of relational integration strategies that were both proactive (through structures) and reactive (through processes) which were emergent and contingent upon stakeholders' needs and other feedback; e.g.; motive alignment (cf. Alam and Campbell 2013a). The NLA adopted participatory design principles during development by allowing public scrutiny of the Australian Newspapers site, and utilized multiple channels of communication that were clear, honest and transparent. The NLA treated users as partners within the project and had an open mind to feedback from the broad stakeholder cohort. Multiple formal and informal communication channels were deployed, such as a "contact us" form, email, telephone, feedback survey, Trove forum, ANPlan advisory boards with external partner institutions, and external blogs/forums actively seeking feedback from the public and developing a prototype and beta version resulting in suggestions from users that were innovative, fresh, and viable and thus helped shape the development of the service to better meet users' needs (Holley 2009). The ANDP team prepared a wish list of features and they matched it with various user feedback they received from different sources (cf. Holley 2009). The features were prioritized and were incorporated in order of preference derived from user/stakeholder feedback that facilitated motive alignment. Hence, suitable incentive mechanisms were deployed in subsequent releases; e.g.; hall of fame, user profile listings. This inclusive stakeholder participation helped to align the needs and motivations of the text correctors with those of the ANDP (see Alam and Campbell (2013a) for a detailed discussion on the structures, processes and relational mechanisms employed). Being transparent about processes and development paths increased the public's trust in the NLA and their sense of knowing what's going on (Holley 2009). The ANDP team's experience showed that the greater level of freedom and trust they gave to text correctors, the more they were rewarded with hard work, loyalty and accuracy (Holley 2010). Further, ANDP utilized text correctors and general Trove users to moderate others and to answer questions posted in the Trove forum. The Trove team kept an eye on forum activity to spot anything which might have become an issue and sought to resolve as much as possible through FAQ, policy, and guidelines (Alam and Campbell 2013a). Hence, over time the crowdsourcing platform enabled weak ties resulting in the creation of bridging social capital for text correctors, Trove users and the NLA.

8 Discussion

8.1 Towards a model of organizational motivation for cultural crowdsourcing

In a disposition similar to Rahim et al. (2010) and Solimann and Tuunainen (2015) on examining the origin and aim of motivations over time, it is evident that the library's motivation for crowdsourcing was initially instrumental in nature; i.e.; cost reduction and resource constraints, however their motives changed over time, most notably during beta implementation, and later in the operational phase to social engagement. Hence, the origin of motivation changed from being internally sourced; i.e.; instrumental, to externally sourced; i.e.; engagement. In terms of the aim of motivation, motivations changed from resource constraints; i.e.; egoism, to organizational innovation culture; i.e.; egoism, principlism, to social engagement; i.e.; collectivism, altruism. According to Rahim et al. (2010), motives thus changed from techno-economic towards socio-political motives; i.e.; the motives were not intended to gain economic benefits. Hence, the temporality in organizational motivation can be represented in terms of a continuum sourced from internal or external influences and range from techno-economic to socio-political. These observations are summarized in Figure 3 where dynamic changes in organizational motivation are illustrated by drawing on the origin of motivation and the aim of motivation.

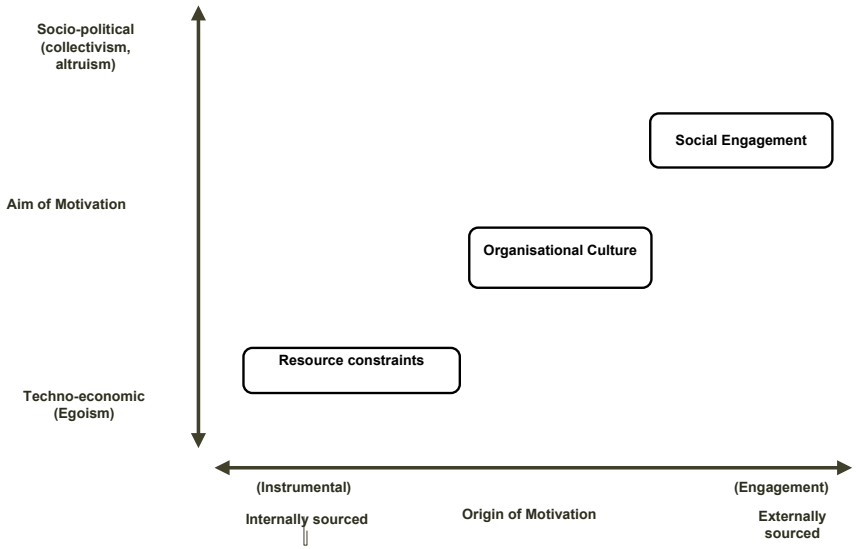

Figure 3. A continuum of dynamic organizational motivation for cultural crowdsourcing.

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Motivations for crowdsourcing from case data	*Motivations for outsourcing adapted from Lacity et al. 2010*
Cost reduction Focus on core capabilities	Cost reduction Increased workload/ Lack of human resources Focus on core capabilities
Social/political environment Innovation and leadership	Political reasons Innovation
New way of engaging Enriched collection and increased use Utilization of external expertise Social engagement Collaboration Social capital	Access to skills/expertise Innovation

Table 5. Motivations for crowdsourcing vs Motivations for outsourcing.

It should be noted here that the model presented in this paper does not suggest any chronological progression of organizational motivation from resource constraints to organizational culture to social engagement. Rather, the two dimensions illustrate the spectrum of motivations as continuums. The dynamic nature of shifting and multiple motivations for organizational crowdsourcing depends on multiple factors, such as the level of experience and knowledge of adoption and implementation of crowdsourcing by the organization. According to the principles of organizational learning on how an organization creates and organizes knowledge relating to their function and culture over time (see Schulz 2002), we posit that organizations typically can be situated either at an 'exploration/learning' stage or at "maturation' stage with crowdsourcing applications. If an organization is at the early stages of crowdsourcing adoption and/or has trialed crowdsourcing on a small scale and hence is situated in the exploration/learning stage, it is likely their initial organizational motivation is primarily techno-economic and based on organizational culture-related motives that are mostly drawn from internal sources. If the organization has prior experience and knowledge of crowdsourcing implementation and hence is situated in the maturation stage, their motivations are more likely to be driven by socio-political motives; e.g.; social engagement, that are usually sourced from the external environment.

8.2 Organizational motivations for crowdsourcing versus ITO

Organizational motivations for crowdsourcing were found to be similar to certain motivations previously found for IT outsourcing (see Table 5). For example, the NLA initially decided to crowdsource the correction of poor OCR as a cost reduction method by offloading workload for

a non-core business activity so that the library could focus on core activities, such as the digitization and quality assurance of digitized newspapers. Unfortunately, the NLA did not have the resources to rectify the errors, thus crowdsourcing was seen as a potentially cost-effective solution. Political reasons to crowdsource included the desire to delegate a burdensome repetitive task of OCR error correction to an external crowd as the human eye was assumed to be the best method of spotting and correcting scanned errors (during 2006-7). Contrary to ITO, the reason behind the NLA's decision to outsource was for innovation rather than strategy (Adams and Ramos 2010; Rouse 2010). Their innovative culture and leading role among GLAMs motivated them to adopt newer methods, such as crowdsourcing. However, subsequent motivations of social engagement, collaboration and social capital are different from typical ITO motivations, and can be seen as more relevant for the non-profit context of cultural institutions. Hence, the dynamism or temporality of organizational motivation for crowdsourcing is an important consideration for cultural crowdsourcing projects.

9 Conclusion

9.1 Implications for research

We argue that the notion of motivation is a useful means by which to understand the adoption of crowdsourcing, particularly for cultural and heritage institutions. The motivations are multiple and change over time. This dynamic nature was captured in a motivational model that included both the origin and aim of motivation and in doing so, offered a greater understanding of how motivations change over time at the organizational level. The motivations were sourced both internally; i.e.; instrumental, and externally; i.e.; social engagement, and discerns the likely outcomes of crowdsourcing implementation over time. In summary, at the exploration/learning stage, an organization is likely to be motivated by internally sourced techno- economic-based motivations. During the maturation stage, an organization, through experience and lessons learnt, acquires greater knowledge that stimulates further motivations of social engagement that are likely to be externally sourced. This paper hence contributes to knowledge on motivations for non-profit cultural crowdsourcing and seeks to provoke further theoretical development and refinement in theorizing the dynamic nature of motivation over time.

A number of observations can be made for future research. This paper also contributes to an understudied area of research on organizational motivation for crowdsourcing that may have implications for other forms of non-profit collaborative endeavors. The organizational motivations for crowdsourcing found in this research confirmed earlier findings such as cost savings, affordable labor, customer intimacy and expertise from outside the organization (Schenk and Guittard 2011; Rouse 2011). However, the temporal aspects of organizational motivation; i.e.; motives changed dynamically over time, are a unique and interesting finding in this research. Temporality was demonstrated through arriving at newer motivations such as social engagement, collaboration and social capital based on larger outcomes than envisioned

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when crowdsourcing was initiated. These motivators resulted in ongoing relational engagement strategies that were employed for the ongoing sustainability of the crowdsourcing project.

9.2 Implications for practice

The identification and recognition of the dynamic nature of organizational motivation demonstrates how the value imperative for GLAMs of crowdsourcing initiatives evolve over the long-term. Effective collaboration between GLAMs and volunteers over time requires that the dynamic nature of motivations be addressed through system design and appropriate use of organizational mechanisms. Thus, our findings have important implications for designing crowdsourcing tools and deploying related organizational mechanisms, particularly relational mechanisms, to sustain participation in long-term GLAM crowdsourcing initiatives.

It also has implications for long-term projects concerning public and citizen engagement as, for example, citizen-centric government crowdsourcing initiatives concerning community engagement in ongoing policy discussions, or identifying alternatives for the improvement of services aimed at the public common good; e.g.; environment, health. Organizations that engage in collaborative activity with an undefined crowd; e.g.; public engagement, may very well find that their initial motivations also change over time and that they may achieve better outcomes by seeking to establish long-term sustainable relationships. In fact, the temporal aspects of organizational motivations highlight the importance of emergent outcomes in collaborative activities that involve undefined crowds, and organizations can leverage these emergent motivations to achieve more significant outcomes. Further, these types of crowdsourcing initiatives should be designed in a way that fosters ongoing collaboration.

9.3 Research limitations

This study is exploratory in several respects and thus has limitations. The research was conducted as a qualitative interpretive single case study, thus the findings are not readily generalizable across different types of crowdsourcing contexts. It should be noted that libraries are cultural and heritage institutions and thus the findings are context dependent. As such, other organizations that implement crowdsourcing might be driven by a different set of motives. Future research should expand beyond the library context and explore other types of crowdsourcing contexts; e.g.; contests, R&D; and study the organizational motivations for specific environments. Empirical studies from a greater variety of cultural settings may serve to further explore, validate, highlight or identify new issues.

Another stream of potential research is to investigate the dynamic changes in organizational motivations to understand better the antecedents of motivations for crowdsourcing and subsequent dynamic influences on consistent crowdsourcing outcomes using a longitudinal study. Future research should also compare and contrast motivations for outsourcing with motivations for crowdsourcing, based on multiple case studies and quantitative methods. Future research should also explore what types of organizational motivations result in what types of

crowdsourcing implementation decisions and processes and the antecedents for crowdsourcing adoption.

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