Emerald Insight

Journal of Information, Communication and Ethics in Society
Trust formation in information systems implementation in developing countries:
The role of emancipatory expectations
Ranjan Vaidya

Article information:

Users who downloaded this article also downloaded:

For Authors

About Emerald www.emeraldinsight.com

Trust formation in information systems implementation in developing countries
The role of emancipatory expectations

Ranjan Vaidya

Information Technology Policy and Planning Unit, University of Auckland, Auckland, New Zealand

Abstract

Purpose – The purpose of this study is to understand the trust formation expectations of stakeholders in the implementation of information and communications technology for development (ICT4D) projects.

Design/methodology/approach – This paper uses a qualitative methodology inspired by a critical approach. It uses a thematic analysis approach, and draws the results using a constant comparison method. It is guided by the Pierre Bourdieu's theory of practices. This is an empirical study that uses semi-structured interviews for the data collection.

Findings – Lack of an integrated view of emancipatory expectations has a negative impact on the trust levels of stakeholders. An integrated view of emancipation has physical, moral and social dimensions.

Originality/value – The study brings forth the concept of entry point activities (EPAs). To the author's knowledge, this is the first application of this concept in ICT4D research. EPAs can be used to develop trust relationships between the stakeholders of ICT4D projects.

Keywords Developing countries, Empirical, Trust, ICT for development, Stakeholder practices

Paper type Research paper

Introduction

Recent past has seen a growing interest in information and communications technology for development (ICT4D) research. This is reflected through dedicated journals and special issues of information system journals (Majchrzak *et al.*, 2012; Walsham *et al.*, 2007). The premier information systems conferences now have dedicated tracks on developing countries. For example, the recent 2016 call for the European Conference on Information Systems has a dedicated track on information systems in developing countries. Coinage of specialised terminologies further indicates the evolution and advancement of the ICT4D research stream. For example, a recent study by (Sandeep and Ravishankar, 2014) uses the terminology Public sector Information and Communications Technology to discuss an information technology project in India. One such terminology is "emancipatory information systems" which indicates that emancipation of the underprivileged is the focus of ICT4D (Kanungo, 2004).

This growing interest in ICT4D research is for instrumental and substantive reasons (Walsham *et al.*, 2007). World's economic development cannot be sustained if bulk of the world's population continues to earn less than $1.25 a day (van der Ploeg, 2012), when nearly 780 million people across the globe are facing severe hunger, and when nearly one

third of people of the low- and middle-income countries are defined as poor (FAO, 2015). ICT4D research is also important for the progress of mainstream information systems research, as the data collected from it is of empirical nature and the themes emerging from ICT4D research would otherwise not emerge in the mainstream information systems research (Avgerou, 2008).

There is a consensus that information technology plays an important role in development, and the moot question now is to discuss the suitability of mechanisms for implementing ICT4D (Walsham *et al.*, 2007). According to Avgerou (2008), ICT4D research can be characterised along three themes, namely, transfer and diffusion of the ICTs in developing countries; their ability to transform the economic, social or political inequalities; and their socially embedded nature whereby ICTs are seen to interact with the cultural settings. This empirical study contributes to the discussions about the transfer and diffusion theme, as it suggests that an integrated view of emancipation is needed for meaningful ICT interventions.

It is a well-known fact that ICT4D projects serve emancipatory functions (Kanungo, 2004). Impact assessment studies of such projects measure the emancipation in form of benefits arising from information emancipation. For example, studies measure the reductions in the cost of accessing the services, improvement in the quality of governance and estimate the reduction in corruption (Bhatnagar, 2007). A more recent study by Prasad and Shivarajan (2015) follows a similar approach and discusses the reduction in corruption through economic construct of "asset specificity".

On the other hand, the beneficiaries of such projects view the ICT4D projects as developmental intervention. They expect that the focus of the project is their amelioration. This also highlights the contradiction in the development paradigm – that ICT4D interventions are projected as emancipatory, while in actuality, they do not benefit the poor (Kuriyan *et al.*, 2008). This suggests that an integrated view of emancipation is needed, one that transcends information emancipation.

The emancipatory theory of trust conceptualises trust as a "booster" that helps people to explore new opportunities by emancipating them from their commitment relations (Yamagishi *et al.*, 1999). According to this theory, commitment formation is a means of countering social uncertainty. However, one drawback of commitment formation is that the actors are restrained from exploring outside opportunities. If outside opportunities are frequent, commitments become a liability. In such situations, trust plays an emancipatory role and emancipates actors from confining to the commitment relationships. According to the theory, in situations of social uncertainty, the bias towards the goodwill and benign intentions represent trust. In other words, a high-trusting person will have a greater belief that the intentions of the other party are benign. On the other hand, when there is no such uncertainty, what is called as trust is merely assurance or confidence. Other researchers have suggested that trust expectations include other dimensions. For example, Baba (1999) and Schoorman *et al.* (2007) mention that expectations have affective and cognitive dimensions. Sztompka (1999) describes trust expectations as fiduciary, axiological or instrumental.

The argument of this study is that emancipatory information systems will need to have an integrated view of emancipation that has physical, social and informational dimensions. Absence of an integrated view, as is shown by the results, can have disastrous impact on trust levels between the stakeholders. Specifically, the study

answers the question: what are the expectations related to trust formation during ICT4D implementation in developing countries.

To answer this question, the study discusses the case of a public sector organisation in India. The organisation is a state level agricultural marketing board that provides common meeting platforms, colloquially called as *mandi* or market yard, across the state. At these yards, farmers and traders accumulate for trade transactions. Often there may be price dispersions across the yards and the farmers may be exploited by the traders. To avoid such discrepancies arising from the manual system, the organisation initiated an information technology-based project in 2003. There are four major stakeholders, namely, farmers, traders, government and private partner (PP) organisation, implementing the project.

The remainder of the paper is structured as follows. Section 2 discusses the literature on trust formation. This is followed by a description of the research method. In Section 4, the theoretical framework, based on Bourdieu's theory of practices (Bourdieu, 1977), is presented. In Section 5, the case is discussed. This is followed by an analysis. Finally, the conclusions are presented.

Literature review
The objective of this literature review was to gain an understanding of the expectations related to trust formation. Before detailing the literature review, it is important to clarify the type of trust that is focus of this study. Researchers have discussed different types of trust. For example, on the basis of unit of analysis, trust can be interpersonal-, organisational- or group-based trust Camén *et al.* (2011). On the basis of the expectations that it serves, trust can be fiduciary, axiological or instrumental (Baba, 1999). Researchers have suggested that *interpersonal trust* has a bearing on different trust types (Schoorman *et al.*, 2007). Following this, the study conceptualises trust as interpersonal trust and chooses the definition proposed by Mayer *et al.* (1995), as other definitions are variants to this (Fichman, 2003). According to this definition trust is the:

[…] the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.

Methodology
For selecting the literature, the approach described by Barroso *et al.* (2003) was followed. Initially, a data corpus was built on the basis of number of citations in the bibliographic databases. This was followed by citation searching, journal runs and author search. The data corpus comprises 50 research articles covering a period of 1995 till 2015. The literature review comprises studies from disciplines of psychology, management and information technology. Initially, a ten-year period from 1999 to 2009 was selected for the review. However, this was later extended to cover more recent studies from 2010 till 2015. Also, the seminal study by Mayer *et al.* (1995) was included, as it was highly cited within information technology and as other disciplines.

In the initial stage, the research articles were coded to identify the main research themes on trust. In the next stage, one of these themes, namely, "how is trust formed", was selected. All the codes belonging to this theme were arranged on the basis of the year of publication. Next, following the guidelines of constant comparison method (Boeije, 2002), a memo summary was written for each time period. These were divided in

three periods representing the early, intermediate and recent phases of trust formation deliberations. The memos of each year within each phase were compared to others to have an overarching theme for the period. In the final phase, the deliberations of the three periods were compared to draw the conclusions. These conclusions are discussed below.

Results

Initial phase

Studies in the initial phase discuss the role of culture on propensity to trust. Trust is described as an important strategy for countering social uncertainty, and is related to the individual's risk-taking abilities. Culture plays an important role in shaping these abilities. For example, Mayer et al. (1995) suggest that people in some eastern countries' cultures are averse to risk-taking and have lower levels of trust compared to their western counterparts. Fichman (2003) argues that social structure influences trusting propensities and high-trust societies are marked by late marriages and nuclear families. On the other hand, low-trust societies are characterised by early marriages and strong bonds of association with the extended families.

Researchers in the initial phase also discuss the expectations related to trust formation. Quoting studies from psychology, Baba (1999) concludes that distrust becomes a chosen strategy when there is expectation of selfish behaviour from others. Yamagishi et al. (1999) suggests that people with high level of trust have a higher belief in human benevolence. Other researchers have highlighted the importance of benevolence, and have argued that reciprocation of benevolence is important for securing cooperation in human societies. Kiyonari et al. (2000) quotes biological studies to suggest that self-interested organisms use reciprocal benevolence as a strategy to secure cooperation. The author further quotes various studies to suggest that humans have developed cognitive modules for differentiating people on the basis of their willingness to cooperate and people with high social heuristic can differentiate co-operators from defectors. Fichman (2003) also suggests that cognitive ability to detect untrustworthy behaviour is an important qualification in trust decisions. Others have suggested that different types of reciprocation result in different levels of trust (Baba, 1999). Thus, expectations of benevolence are important expectations in trust formation.

Intermediate phase

The analysis suggests that studies in the intermediate phase do not focus on the expectations in trust decisions. Culture continues to be the focus of trust studies in this phase and the researchers move a step beyond the mere suggestion that culture impacts the propensity to trust. Siala et al. (2004) suggest that culture is an antecedent to trust. Culture presupposes a shared value system which has a bearing on the propensity to trust (Lander et al., 2004). Cultural similarities yield higher levels of commitment amongst the group members, resulting in higher levels of trust. Following this, Yosano et al. (2005) study the relationship between commitment formation and trust. They study trust formation across two groups of people with high (rural) and low commitment relations (urban). They find an insignificant difference across these two groups suggesting that within group commitment may not bear a relationship with trust formation. Kiyonari et al. (2006) explains that one reason for the variation in the

propensity to trust across culture is that the propensity to reciprocate itself varies across cultures. Cook *et al.* (2005) suggests that the risk-taking abilities vary across cultures and so does the propensity to trust. Schoorman *et al.* (2007) suggest that benevolence is a vital requirement for trust formation and culture plays an important role in shaping the perceptions about benevolence. The authors suggest that the masculine culture (Hofstede, 1980) put a greater emphasis on ability, while the feminine cultures stress on benevolence.

Amongst the factors that influence trust formation, Jarvenpaa *et al.* (2004) suggests that optimum levels of communication have a positive impact on trust formation. The study by the authors suggests that early communication has a positive relationship with trust formation. However, as communication increases, the relationship reverses implying that both low and high levels of communication have a negative impact on trust formation. Diallo *et al.* (2005) study the relationship between communication, trust and success of developmental projects in Africa. Their findings suggest that the impact of frequent communication on trust varies with the organisational hierarchy.

Studies in the intermediate phase present the ability to assess trustworthiness as an important ability in trust decisions. Jarvenpaa *et al.* (2004) suggests that individuals' ability to assess the trustworthiness is a matter of disposition and the cognitive abilities. It is more of an attribute of the trustor rather than being an assessment of the behaviour of trustee. Kiyonari *et al.* (2006) differentiates between trust and trustworthiness to suggest that act of putting trust does not necessarily makes other party trustworthy. Quoting various studies the authors suggest, those countries that are high on levels of trust (i.e. higher propensity to put trust), may be often low on trustworthiness. One important research gap identified in the intermediate phase is that the expectations of benevolence have not received adequate research attention (Schoorman *et al.*, 2007).

Recent phase
The review of the recent phase indicates a gradual shift towards the normative elements of trust formation, though culture–trust relationships continue to interest the researchers (Igarashi *et al.*, 2008). Foddy *et al.* (2009) mention that expectations of altruism play an important role in trust formation within the group members, and when such expectations are met the group members often ignore the stereotyped knowledge about the group members. Song (2009) studies the impact of group membership on the expectations of reciprocity and trust formation. The findings suggest that expectations of reciprocity play an important role in trust formation across both individual and group settings. Rice *et al.* (2010) uses Immanuel Kant's framework of perfect and imperfect duties to study trust formation. Honesty, for example, is described as a perfect duty of all human beings, while charity is an imperfect duty. Through a series of experiments, the author demonstrates that even mild violations of perfect duties have a disastrous impact of trust formation. Parra *et al.* (2011) also highlight the role of individual ethics in trust formation and consider ethics as an important element of trust formation apart from ability and benevolence. Other studies have also highlighted the normative elements of trust formation (Knoll and Gill, 2011).

More recent studies on trust continue to indicate that the normative elements of trust are important in trust formation. For example, Dunning *et al.* (2014) in their study, based on six cases, analyse the trusting propensity of people towards strangers, and suggest that a high propensity to trust can be attributed to the people's belief in the social norms

that teach them to put "respect" in people's character, and in putting trust people thus align their behaviour with the social norms. The study goes against the rational choice theory, and suggests that trust decisions are perhaps made tacitly following what Bourdieu calls the "feel for the game" (Olsen and Neff, 2007). From an experimental study, Kausel and Connolly (2014) suggest that knowledge of the emotional state of other has an impact on the assessment of trustworthiness. They study the role of three types of incidental emotions, namely anger, guilt and gratitude, on trustworthiness. Their results indicated that anger negatively impacts the trusting propensities, while feelings of guilt and gratitude had a positive impact on trust. Similarly, the study by Thielmann and Hilbig (2014) suggests that humility has a positive impact on the assessment of trustworthiness. A study by Levine and Schweitzer (2015) suggest that deceptions of a "pro social" nature, i.e. one that is a deception but yields benefits to the deceived party, has a positive impact on trust formation.

The analysis of the three phases suggests that expectations of benevolence play an important role in trust formation. In ICT4D projects, such expectations become much more pronounced because the project objective is to emancipate the stakeholder groups from their prevailing state of socio-economic depravity. How far the availability of information alone is able to address such expectations is an interesting question.

Research method

The purpose in this paper is to understand the trust formation expectations. Such expectations can be well studied within the socio-cultural context. A qualitative approach was well suited for studying the research question, as qualitative research provides flexibility to capture the contextual influences (Myers, 2009). Within qualitative, my epistemological approach is critical (Myers and Klein, 2011). Critical approach is the only approach that stresses on the "emancipation" research subjects and researcher (Orlikowski and Baroudi, 1991). Moreover, the critical approach is based on the fundamental notion of reflection. It provides an opportunity to critically reflect on the existing expectations of trust formation. Furthermore, it also suited well with data analysis approach which used a constant comparison method (Boeije, 2002). I chose an "intrinsic case study" (Creswell *et al.*, 2007) with an inductive approach.

ICT4D researchers have suggested that identification of stakeholder is in itself a major challenge in stakeholder-based studies, and this study uses the *importance-influence* criterion for the identification of primary stakeholder (Bailur, 2007). Various yard-based studies have suggested that farmers, traders and government officers are the *important* stakeholders in the yards (Meenakshi and Banerji, 2005). Of these traders are the most *influential* stakeholder group, as they are well informed (Goyal, 2010). Research studies have also shown that the role of PP, i.e. private vendors implementing the information technology project, is critical to the successful implementation of ICT projects (Kuriyan *et al.*, 2008). Following this, the primary stakeholders include *farmers, traders, government officers* and *PPs*.

The data for the present study were collected over a period of eight months (2009, 2010 and 2012) through semi-structured interviews, observations, field notes and government records. Overall, 23 informants were interviewed comprising farmers, government employees, PPs implementing the information systems and traders. Table I presents the distribution of interviews.

Both employees and PP were interviewed from various levels of organisational hierarchy. Farmers and traders who had come for trade at the yards were contacted and were interviewed both at the yards and the respective villages. These interviews and field visits were carried out at four different yards in the state. The interviews lasted from between 30 min to 2 h and were conducted in the local language. The interviews with the farmers were recorded, while notes were taken for the interviews with other stakeholders. The recorded interviews with the farmers were transcribed. The transcripts and field notes together formed the data corpus that was analysed with NVivo software.

For the identification of the major themes, the constant comparative method (Boeije, 2002) was applied. Following this, a summary for each interview was written. Next, each interview transcript provided the initial codes. These codes were compared to the interview summary and the summary was accordingly refined. This ensured a consistency between the codes and the interview summary. In the next step, the interview summaries within each stakeholder group were compared. For example, the summarised farmer interviews were all compared with each other to have a thematic relationship for the farmer group. Through this comparison, a construct relationship was developed for each stakeholder group, namely farmer, trader, government officer and PP. In the final step, these four thematic relationships were compared to the others to have an overarching resultant relationship of the constructs.

For establishing the validity of the findings, the author travelled to India in 2012 and discussed the findings with the stakeholders. The stakeholders agreed to the presence of high levels of trust deficit amongst the stakeholders. The PPs were not available for discussions, as their offices were closed down and their property seized following conflicts with the government. The government officers mentioned that the project has been abandoned, as the PPs had failed to fulfil their contractual obligations.

Theoretical framework
The study involved four major stakeholder groups. These stakeholder groups interact with each other for trading agricultural commodities and their interests are conflicting. For example, the farmers want to maximise their earnings, while the traders want to offer the lowest prices to the farmers. Also, the stakeholders come from diverse background and had diverse forms of capital or resources with them. For example, the background and context of the rural farmers was in stark contrast with the traders who were urban and affluent. The choice of the theory should recognise the competing stakeholders and the role of their context in shaping their practices. The Pierre Bourdieu's theory of practice met these requirements very well. The concept of *habitus* accounted for the contextual influences on stakeholder practices. Finally, the concept of *field* represented the social spaces where stakeholders struggled to maximise their *capital*. Also, the theory has been used in past information system research involving

Stakeholder	Interviews
Government employees	8
PP	5
Traders	3
Farmers	7

Table I.
Interviews with stakeholders

different stakeholders (Levina and Vaast, 2005). These conceptual elements matched the research very well. The key concepts of theory are discussed in the section below.

Theory of practices: conceptual elements
According to Bourdieu, agents struggle over three types of capital, namely, cultural, economic and symbolic capital. The volume and composition of capital and the social trajectory of agents together impact the practices of agents. However, this relationship is mediated by the *habitus* of the agents. *Habitus* links the behaviour of agents with their class status. It develops a certain liking or disliking in them for tastes that are suited to their class. In situations in which tastes or dispositions other than those possessed by the agents are appreciated, the agents feel misplaced. With the given *habitus*, the agents enter their *fields* of struggle to exchange or acquire the capital to improve their positions in the social space.

Fields represent the social space where agents struggle for acquiring the capital (Jenkins, 1992). *Fields* are not only the arena of struggle over resources, but, more importantly, they are also the arenas of struggle for legitimisation of practices (Swartz, 1997). The composition and volume of capital possessed determine the location of the agents in the fields. The interactions between *habitus*, *field* and the *capital* yield the practices of agents. This relationship is described by Bourdieu in form of formula (Bourdieu, 1984, p. 101) as follows:

$$(habitus)(capital) + field = practice$$

The key message that Bourdieu (1990) presents is that repeated interactions between the field and habitus provide certain mastery to agents in their practices so that agents themselves may not be conscious of their practices. Thus, *Logic of Practice* suggests the behavioural improvisations that happen over a period of time. Indecision or uncertainty yields delay in the occurrences of events and gives time to individuals to reflect and improvise their behaviour. Thus, practices are strategic adaptations (Kvasny, 2005), which eventually yield the social structures. The social structure then creates the *habitus* through class and rank classifications.

The current study uses the conceptual element of theory of practice to guide the data collection. The data collection is centred on documenting stakeholder practices. For example, while collecting data the focus of the discussions with the informants was on the understanding their context and their experiences with computerisation. From analysis of these discussions, their practices were identified. Overall, over 40 stakeholder practices were identified that were used in the yards. It is assumed that these practices are an outcome of the socio-cultural context of the stakeholders and have a direct bearing on the levels of trust. The theoretical model depicting this is presented in Figure 1. The two directional arrows in this model suggest the dynamic nature of the constructs. Context yields practices, and the practices have an impact on context. Also, practices influence the trust levels, and trust levels influence the practices.

Case description
The current study relates to the information system implementation at an agricultural marketing board in one of the Indian states. The total population of the state is over 60 million of which nearly three fourths is rural. The state is one of the largest states of a

leading producer of various agricultural commodities in India, namely, soybeans, grams, oilseeds and pulses.

Agricultural trading in India is guided by the State Agricultural Produce Marketing Committee Act. The Act prescribes the creation of market yards across various states. These yards are to be operated by yard committees and the yard committees are controlled by a para-state organisation called as the State Agricultural Marketing Board. The Act has been adopted by various states at various points of time (Shilpi and Umali-Deininger, 2008).

Farmers of the state have various channels to sell their agricultural commodities. For example, they may choose to sell the commodities to the local traders, various cooperative procurement organisations or sell the commodities at the market yards through the process of auction. Auction at the yards provides an opportunity to avail better prices, as it is mandatory to start the auctions at a minimum support price which is recommended by the Indian Commission on Agricultural Costs and Prices (Meenakshi and Banerji, 2005).

Studies indicate that there are large price dispersions across these market yards and often the farmers are not able to realise the best available prices (Goyal, 2010). Past studies also indicate that farmers face various kinds of problems in the yards such as cheating in the weighing of the commodity, retaining the commodity bags of farmers, lack of information about the commodity prices and delay in the payments. These problems often also have an impact on the socio-psychological well-being of the farmers (Anupindi and Sivakumar, 2007).

Historical perspective

The exploitation of the farmers and a need to regulate the commodity prices resulted in the creation of various para-state organisations called as marketing boards after Second World War (Abbott, 1967). Perhaps the earliest definition of an agricultural marketing board comes from Abbott (1967) who defines them as "public bodies set up by government action and delegated legal powers of compulsion over producers and handlers of primary or processed agricultural products". Historically, the agricultural commodity markets were regulated in India through the Bombay Cotton Market Act of 1927. The Act mandated the creation of yards where farmers could show their cotton to the traders (Singh, 2007). Consequently, informal yards were created across the country where the farmers sold their commodities to the traders through commission agents. In the state under study, these yards were completely autonomous bodies. However, in 1972, the state government formulated a law by which all the yards were brought under the aegis of a state level agricultural marketing board.
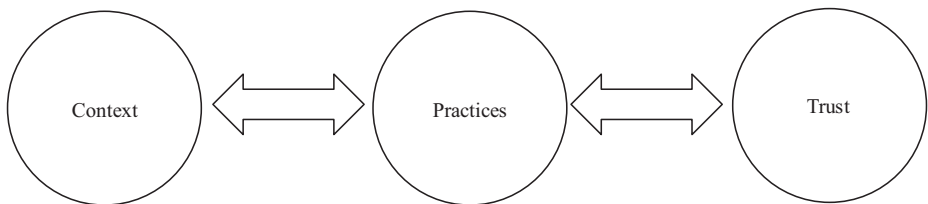
Figure 1.
Theoretical model of trust formation

Process of trade transactions
There are over 200 yards in the state and there is considerable diversity in the state. As a consequence, there are some variations in yard processes. However, prior research studies related to agricultural yards identify certain common processes that are prevalent across all the yards (Kumar, 2004). These include commodity auction, its weighing, farmer payments and deposition of the yard service charges by the traders. After the service charge is deposited, the trader issued a "no objection certificate" by the yard authorities so that the trader can sell or transport the commodities further to industries or exporters.

Problems in manual process
Each of the yard process requires certain documentation. For example, auction slips and weight slips are issued to the farmers and traders. These slips form the basis for calculations of the payable service charges. For such calculations, it is important that the information in each document is consistent. However, manual entry of records often results in inconsistency, and the service charge liabilities of traders could not be correctly determined. The cumulative impact of the manual processes resulted in corruption and organisational inefficiency. Also, the farmers could not get the best possible price of their commodities, as they had no information of the rates prevailing in other markets. This resulted in their exploitation by the traders. Exploitation of the farmers and improvement in organisational efficiency provided the overall rationale for initiating the computerisation project in 2003.

Computerisation of yards
The project aimed at capturing the data of all the processes electronically through computers, handheld electronic terminals and electronic weigh bridges. At each yard, the data were uploaded to a central server and was redistributed to various yards, inter-state check posts and the board head office. The data were also displayed on the website of the board. At each computerised yard, the processed data (auction rates, etc.) was displayed on TV sets. The project was conceived and executed by the board and a private vendor company. The entire investment on hardware, software, manpower and maintenance has been done by the private vendor, and the vendor was paid a percentage of the total service charges collected.

An evaluation of the project by the government in 2008 indicated that the project was successful in providing timely payments to the farmers, reducing the errors in transactions and providing an overall improved quality of services (DIT, 2008 p. 92). However, field visits starting from 2009 onwards suggested that there were frequent conflicts between the PPs and the government over issues such as incorrect data entry and reconciliations. The government employees blamed the PPs for not fulfilling their contractual obligations and the PPs blamed the government for corruption and inefficiency. In 2011, the conflict surfaced as the government income tax department conducted several raids on the offices of PPs for income tax evasions. By 2012, the project was completely abandoned.

Current status
Under the project, the data collected from the yards were transmitted to a central server from where it was redistributed to the yards and the website of the board. In 2012, when we made our final visit to the yard, we were told by the government officers that the

property of the PP (hardware, etc.) was seized by the government, and that the PP had also lost the case in the court of law. This had resulted in the abandonment of the project. The government officer also mentioned that as they had become accustomed to computerisation and that many reports could be quickly generated through computers, they had found another way to continue with the computerised operations. Each individual yard retained some of the PP employees by paying their salaries from the yard income (and not through the Board) and asked them to perform the tasks such as data entry.

Our recent 2016 correspondence with the additional director of the board confirmed that the project was indeed abandoned. We were also told that the Board has now started another project under which yards are being computerised but for only one specific yard process called as a no objection certificate (or a "Anugya Slip" in the local Hindi language). This project is called as e-Anugya project and is being implemented with the help of the National Informatics Centre. In its initial phase, the project will cover 50 yards of the state. We were also told that the central government has also started the National Agriculture Market (NAM) project under which 585 market yards across the country will be interconnected and electronic auctions will be conducted for agricultural commodities. The NAM will thus automatically connect the yards of the state with yards across India. This indicates that though this particular project was abandoned, the potential of information technology has well been recognised not only by the state government but also by the national government.

Case analysis

This section provides evidence of emancipatory expectations, and that these expectations are the core issue in successful implementation of ICT4D projects. Before these expectations are analysed, a brief description of the stakeholder groups is presented. There are four primary stakeholders in the case, namely, farmers, government officers, PPs and traders. Of these, the farmers are the most vulnerable and exploited stakeholder group. They travel long distance to reach the yards and pass through various cumbersome processes to finally sell their commodities. They have to wait for long hours, sometimes days to receive the payments for the commodities sold. Urgent financial needs force the farmers to sell their commodities in the yards and they are not inclined to negotiations. The traders on the other hand live in the vicinity of yards and are financially secured. The PPs implementing the project are commercial organisations. Their employees are city dwellers and have easy access to yards. Furthermore, there is no financial insecurity with them, as they receive a secured performance-based salary.

The fact that farmers are the most disadvantaged group is also corroborated from the past research studies in agricultural marketing. Farmers do not have access to the formal credit systems such as banks and cooperative organisations. In absence of such mechanisms, farmers are unable to buy improved variety of seeds and pesticides which reduces their agricultural outputs. Insufficiency of capital forces the farmers to avail credit from the local sources and traps them in the vicious cycle of high interest rates, and a substantial portion of their earnings is consumed in debt repayments (Tollens, 2006; Johnson and Hofman, 2004). They are vulnerable because of lack of information, as they do not have information about the weather conditions, prices, supply and demand forecasts of the agricultural commodities. Ridden with poverty and lack of information, farmers are often forced to sell off their agricultural lands and migrate to the urban areas

(Parikh *et al.*, 2007; Goyal, 2010). Another reason for their vulnerability is that they do not have easy access to the agricultural markets. Even if the physical access is available, in absence of appropriate information, the farmers do not have the capabilities to negotiate with the agents and middlemen. This apart the traders and middlemen are able to influence the market policies leaving the farmers vulnerable to the dictates of the agents, middlemen and traders (Lokanathan and De Silva, 2010, Singh, 2006). Following this, the current study limits the discussions of emancipatory expectations to the farmers, though other stakeholders may also share similar expectations.

Collins English dictionary suggests three meanings of the word "emancipate":

(1) "to free from restriction or restraint, especially social or legal restraint";

(2) "to free from inhibitions imposed by conventional morality"; and

(3) "to liberate (a slave) from bondage".

Epistemologically, the three dimensions of "emancipation" are *physical*, *social* or *legal* and *moral*. Physical emancipation refers to the emancipation from the physical problems faced by the stakeholders in the yards. The farmers travel long distances to reach the yards. Exhausted farmers expect certain physical care in the yards. One farmer presented the physical problems that they face and mentioned:

It is our compulsion to come to the yards because there is no other choice. Today I came here around seven o'clock in the morning. I travelled from my village at five o'clock in the morning. A lot of farmers come here in the night. A lot of them start travelling as early as three o'clock in the morning. It becomes too hard for the farmers as they have to travel early morning or even previous night to be here on time. Those who come here in the night, sleep for the entire night in the open sheds amidst the mosquitoes.

The farmers expect that the board empathises with their physical drudgeries and provides some basic amenities in the yard. The fact that yards lack the basic amenities and operate in highly "congested" atmosphere has been also recognised in past research (Shilpi and Umali-Deininger, 2008).

According to the Collins dictionary, one meaning of the word "emancipate" relates to the expectation of relief "from inhibitions imposed by conventional morality". To present evidence for this expectation, I look at the following two excerpts from two farmers (Table II). The first suggests that given the social context of farmers in India, it

Farmer 1	Farmer 2
Usually in the cities, you have a high esteem if you have a house, but in villages you are valued on the basis of the land that you have. Even if you have a lot of money in your bank but if you are living in a rented house, you are considered as poor. So the villagers look for land … even in marriages we will ask how much land the other people have	The selling prices of land are high in our village. The rate of one acre is around eight million. This is because the village is close to the city. Even in another village, where I have land, the rate of the land is one million per acre. The total worth or our land is around thirty million. If I put this amount in the bank, I can get an interest of 2.5 million a year. But our profit from farming is not even 0.1 million. So if I don't do anything, then the bank is willing to pay me an interest of 2.5 million …

Table II.
Comparison of
farmer statements

is respectable for a farmer to have as much land as possible. Extent of land is proportional to the social esteem of a farmer. The second excerpt suggests that holding a high acreage of land is an economically unviable proposition given the current hike in the land prices. Both these excerpts are presented side by side in Table II.

Notice here that the first farmer mentions that farmers with higher land ownership enjoy a higher social status in the villages. The statement of the second farmer suggests that, if he sells his land and deposits the sale proceeds in a bank, the interest earned will be more than the earnings from farming. This clearly indicates that farmers often do not sell their lands even when such a sale may be an economically prudent decision. This is because selling land may be considered an immoral decision within their community.

Emancipatory expectations can also be imagined along the *social* or *legal* dimensions. Yards, for example, were completely autonomous in their inception stage. However, prior to computerisation, a uniform set of rules and regulations was prescribed by the board. This uniform act could not be implemented in all the yards, as each yard had a different auction method which was based on regional and cultural context of the yard. A uniform law was advantageous for computerisation, as only one software application could be used in all the yards. The ICT project brought an expectation that such issues would be resolved. The above evidences indicate that stakeholders have emancipatory expectations that can be imagined along the physical, socio-legal and moral dimensions.

Conclusions

The current study suggests that emancipatory information systems have an embedded expectation of emancipation. These expectations are along the physical, social and moral dimensions. In the case of yard, the farmers' buy-in in the project was not secured because their expectations of physical relief were not met. This had a negative impact on the trust levels between these two stakeholders. Past studies indicate that distrust is a chosen strategy when there is a perception that the other party will behave in a selfish manner (Baba, 1999). Also, there is evidence that suggests that there is a recursive relationship between stakeholder strategies that impact trust negatively, and distrust itself, each resulting in the other (Moe and Smite, 2008). The low level of trust was clearly evident from the strategies of the farmers who were unfair in their strategies and often broke the contractual obligations in the yards. The farmers' practice of breaking the contractual obligations is a practice that has been documented across the developing countries (Best *et al.*, 2005) and can be an outcome of the low levels of trust. Similarly, imposing a uniform set of rules and regulations across diverse yards had a negative impact on the trust levels between senior and junior government officers. The junior officers felt that their opinions did not matter to the senior officers. Past studies also indicate that the lack of "fiduciary responsibility" by those in the higher echelons of power has a negative impact on trust formation (Baba, 1999).

One reason for such a situation was that information emancipation was the sole concern of the project. Overall, welfare of the farmers, and not information availability alone, has been identified as an important criterion for the evaluation of ICT-based agricultural interventions (Aker, 2011). This study corroborates this finding and suggests that it is important to have an integrated view of emancipatory expectations, as these have an impact on stakeholder trust.

One way to achieve this is through the entry point activities (EPAs). EPAs are activities that are usually undertaken to develop trust relations with the deprived

communities before a project is implemented. Sustainable development initiatives have mechanisms for implementing EPAs. For example, there a recent call for initiating EPAs for curbing institutional corruption (Marquette, 2012). Within ICT4D discourses, the discussions on EPA are lacking. Future research can be undertaken for theorising the EPAs that are specific to ICT-based interventions.

Apart from the ISDC projects where importance of trust is highlighted (Abraham, 2007, pp. 48-51, Bailur, 2007, p. 75, Plauché and Nallasamy, 2007, pp. 72-74), various developmental projects also indicate that success of such projects is linked to the trust relationships between the stakeholders (Diallo and Thuillier, 2005). Also within the discipline of agricultural marketing, empirical studies indicate that ICTs alone are not able to enhance the trust relationships between the stakeholders (Molony, 2008). Furthermore, studies also reveal that ICTs often end up acquiring "ceremonial" status, benefiting the government officers more than the farmers (Tollens, 2006; Walsham, 2010). For developing trust relationships between stakeholders, it is important that emancipatory information systems also fulfil the other expectations. Past studies on trust also indicate that trust formation requires both affective and cognitive elements (Parra *et al.*, 2011; Schoorman *et al.*, 2007). For example, both in agricultural marketing as well as in organisational and management studies, benevolence is identified as an important ingredient in trust decisions (Batt, 2004, Foddy *et al.*, 2009). A more recent study by Thielmann and Hilbig (2014) suggests that humility has a positive impact on trust formation.

Although this study demonstrates that stakeholder expectations are multi-dimensional and not merely informational, this study is limited to the agricultural occupation. Expectations will change with the domain, and other dimensions may emerge apart from the *physical*, *moral* and social. Further research can be undertaken to suggest a framework for understanding the various expectations from an emancipatory information systems project.

References

Abbott, J.C. (1967), "Agricultural marketing boards in the developing countries", *Journal of Farm Economics*, Vol. 49 No. 3, p. 705.

Abraham, R. (2007), "Mobile phones and economic development: evidence from the fishing industry in India", *Information Technologies and International Development*, Vol. 4 No. 1, pp. 5-17.

Aker, J.C. (2011), "Dial 'A' for agriculture: a review of information and communication technologies for agricultural extension in developing countries", *Agricultural Economics*, Vol. 42 No. 6, pp. 631-647.

Anupindi, R. and Sivakumar, S. (2007), "Supply chain reengineering in agri-business", in Lee, H.L. and Lee, C.Y. (Eds), *Building Supply Chain Excellence in Emerging Economies*, Springer, New York, NY.

Avgerou, C. (2008), "Information systems in developing countries: a critical research review", *Journal of Information Technology*, Vol. 23 No. 3, pp. 133-146.

Baba, M.L. (1999), "Dangerous liaisons: trust, distrust, and information technology in American work organizations", *Human Organization*, Vol. 58 No. 3, pp. 331-346.

Bailur, S. (2007), "Using stakeholder theory to analyze telecenter projects", *Information Technologies & International Development*, Vol. 3 No. 1, pp. 61-80.

Barroso, J., Gollop, C.J., Sandelowski, M., Meynell, J., Pearce, P.F. and Collins, L.J. (2003), "The challenges of searching for and retrieving qualitative studies", *Western Journal of Nursing Research*, Vol. 25 No. 2, pp. 153-178.

Batt, P.J. (2004), "Incorporating measures of satisfaction, trust and power-dependence into an analysis of agribusiness supply chains", in Johnson, G.I. and Hofman, P.J. (Eds), *Agriproduct Supply Chain Management in Developing Countries: Proceedings of a Workshop Held, Bali*, 19-22 August, ACIAR (Australian Council for International Agricultural Research).

Best, R., Ferris, S. and Schiavone, A. (2005), "Building linkages and enhancing trust between small-scale rural producers, buyers in growing markets and suppliers of critical inputs", CPHP Workshop on Beyond Agriculture: Making Markets Work for the Poor, London.

Bhatnagar, S. (2007), "Impact assessment study of computerised service delivery projects from India and Chile", IT at World Bank, Staff Working Paper (42147), 2, Washington, DC.

Boeije, H. (2002), "A purposeful approach to the constant comparative method in the analysis of qualitative interviews", *Quality & Quantity*, Vol. 36 No. 4, pp. 391-409.

Bourdieu, P. (1977), *Outline of a Theory of Practice*, Cambridge University Press, Cambridge.

Bourdieu, P. (1984), *Distinction*, Translated by Richard Nice, Harvard Univer, Cambridge, MA.

Bourdieu, P. (1990), *The Logic of Practice*, Stanford University Press, Stanford, CA.

Camén, C., Gottfridsson, P. and Rundh, B. (2011), "To trust or not to trust? Formal contracts and the building of long-term relationships", *Management Decision*, Vol. 49 No. 3, pp. 365-383.

Cook, K.S., Yamagishi, T., Cheshire, C., Cooper, R., Matsuda, M. and Mashima, R. (2005), "Trust building via risk taking: a cross-societal experiment", *Social Psychology Quarterly*, Vol. 68 No. 2, pp. 121-142.

Creswell, J.W., Hanson, W.E., Clark Plano, V.L. and Morales, A. (2007), "Qualitative research designs: selection and implementation", *Counseling Psychologist*, Vol. 35 No. 2, pp. 236-264.

Diallo, A. and Thuillier, D. (2005), "The success of international development projects, trust and communication: an African perspective", *International Journal of Project Management*, Vol. 23 No. 1, pp. 237-252.

DIT (2008), *Draft Report on Impact Assessment of e-Governance Projects*, Department of Information Technology, Government of India, New Delhi.

Dunning, D., Anderson, J.E., Schlösser, T., Ehlebracht, D. and Fetchenhauer, D. (2014), "Trust at zero acquaintance: more a matter of respect than expectation of reward", *Journal of Personality and Social Psychology*, Vol. 107 No. 1, p. 122.

FAO (2015), *The State of Food and Agriculture: Social Protection and Agriculture: Breaking the Cycle of Rural Poverty*, Food and Agriculture Organisation of United Nations, Rome.

Fichman, M. (2003), "Straining towards trust: some constraints on studying trust in organizations", *Journal of Organizational Behavior*, Vol. 24 No. 2, pp. 133-157.

Foddy, M., Platow, M.J. and Yamagishi, T. (2009), "Group-based trust in strangers: the role of stereotypes and expectations", *Psychological Science (Wiley-Blackwell)*, Vol. 20 No. 4, pp. 419-422.

Goyal, A. (2010), "Information, direct access to farmers, and rural market performance in Central India", *American Economic Journal: Applied Economics*, Vol. 2 No. 1, pp. 22-45.

Hofstede, G. (1980), "Culture and organizations", *International Studies of Management & Organization*, Vol. 10 No. 4, pp. 15-41.

Igarashi, T., Kashima, Y., Kashima, E.S., Farsides, T., Kim, U., Strack, F., Werth, L. and Yuki, M. (2008), "Culture, trust, and social networks", *Asian Journal of Social Psychology*, Vol. 11 No. 1, pp. 88-101.

Jarvenpaa, S.L., Shaw, T.R. and Staples, D.S. (2004), "Toward contextualized theories of trust: the role of trust in global virtual teams", *Information Systems Research*, Vol. 15 No. 2, pp. 250-267.

Jenkins, R. (1992), *Pierre Bourdieu*, Routledge, London.

Johnson, G.I. and Hofman, P.J. (2004), *Agriproduct Supply-Chain Management in Developing Countries: Proceedings of A Workshop Held*, *Bali*, 19-22 August, Australian Centre for International Agricultural Research.

Kanungo, S. (2004), "On the emancipatory role of rural information systems", *Information Technology & People*, Vol. 17 No. 4, pp. 407-422.

Kausel, E.E. and Connolly, T. (2014), "Do people have accurate beliefs about the behavioral consequences of incidental emotions?", *Evidence from Trust Games: Journal of Economic Psychology*, Vol. 42 No. 2, pp. 96-111.

Kiyonari, T., Tanida, S. and Yamagishi, T. (2000), "Social exchange and reciprocity: confusion or a heuristic?", *Evolution and Human Behavior*, Vol. 21 No. 6, pp. 411-427.

Kiyonari, T., Yamagishi, T., Cook, K.S. and Cheshire, C. (2006), "Does trust beget trustworthiness? Trust and trustworthiness in two games and two cultures: a research note", *Social Psychology Quarterly*, Vol. 69 No. 3, pp. 270-283.

Knoll, D.L. and Gill, H. (2011), "Antecedents of trust in supervisors, subordinates, and peers", *Journal of Managerial Psychology*, Vol. 26 No. 1, pp. 313-330.

Kumar, R. (2004), "e-Choupals: a study on the financial sustainability of village internet centers in rural Madhya Pradesh", *Information Technologies and International Development*, Vol. 2 No. 1, pp. 45-73.

Kuriyan, R., Ray, I. and Toyama, K. (2008), "Information and communication technologies for development: the bottom of the pyramid model in practice", *The Information Society*, Vol. 24 No. 1, pp. 93-104.

Kvasny, L. (2005), "The role of the habitus in shaping discourses about the digital divide", *Journal of Computer-Mediated Communication*, Vol. 10 No. 1.

Lander, M.C., Purvis, R.L., Mccary, G.E. and Leigh, W. (2004), "Trust-building mechanisms utilized in outsourced IS development projects: a case study", *Information and Management*, Vol. 41 No. 4, pp. 509-528.

Levine, Emma, E. and Schweitzer, Maurice, E. (2015), "Prosocial lies: when deception breeds trust", *Organizational Behavior and Human Decision Processes*, Vol. 126 No. 1, pp. 88-106.

Levina, N. and Vaast, E. (2005), "The emergence of boundary spanning competence in practice: implications for implementation and use of information systems", *MIS Quarterly*, Vol. 29 No. 2, pp. 335-363.

Lokanathan, S. and De Silva, H. (2010), "Leveraging mobile 2.0 in India for agricultural market access", *SSRN eLibrary*, available at: http://ssrn.com/paper=1618193

Majchrzak, A., Markus, M.L. and Wareham, J. (2012), "ICT and societal challenges", *MISQ Special Issue Call for Papers*.

Marquette, H. (2012), "Finding god or 'moral disengagement' in the fight against corruption in developing countries? Evidence from India and Nigeria", *Public Administration and Development*, Vol. 32 No. 1, pp. 11-26.

Mayer, R.C., Davis, J.H. and Schoorman, F.D. (1995), "An integrative model of organizational trust", *The Academy of Management Review*, Vol. 20 No. 3, pp. 709-734.

Meenakshi, J.V. and Banerji, A. (2005), "The unsupportable support price: an analysis of collusion and government intervention in paddy auction markets in North India", *Journal of Development Economics*, Vol. 76 No. 2, pp. 377-403.

Moe, N.B. and Smite, D. (2008), "Understanding a lack of trust in global software teams: a multiple-case study", *Software Process Improvement and Practice*, Vol. 13 No. 3, pp. 217-231.

Molony, T. (2008), "Running out of credit: the limitations of mobile telephony in a Tanzanian agricultural marketing system", *The Journal of Modern African Studies*, Vol. 46 No. 4, pp. 637-658. doi: 10.1017/S0022278X08003510.

Myers, M. (2009), *Qualitative Research in Business & Management*, Sage publications, London.

Myers, M.D. and Klein, H.K. (2011), "A set of principles for conducting critical research in information systems", *Management Information Systems Quarterley*, Vol. 35 No. 1, pp. 17-36.

Olsen, W.K. and Neff, D. (2007), "Informal agricultural work, habitus and practices in an Indian context", Global Poverty Research Group Working Paper GPRG-WPS-079, Oxford.

Orlikowski, W.J. and Baroudi, J. (1991), "Studying information technology in organizations: research approaches and assumptions", *Information Systems Research*, Vol. 2 No. 1, pp. 1-28.

Parikh, T., Patel, N. and Schwartzman, Y. (2007), "A survey of information systems reaching small producers in global agricultural value chains", *International Conference on Information and Communication Technologies and Development, Berkeley*, pp. 34-344.

Parra, M.G., De Nalda, A.L. and Perles, G.S.M. (2011), "Towards a more humanistic understanding of organizational trust", *Journal of Management Development*, Vol. 30 No. 6, pp. 605-614.

Plauché, M. and Nallasamy, U. (2007), "Speech interfaces for equitable access to information technology", *Information Technologies and International Development*, Vol. 4 No. 1, pp. 69-86.

Prasad, A. and Shivarajan, S. (2015), "Understanding the role of technology in reducing corruption: a transaction cost approach", *Journal of Public Affairs*, Vol. 15 No. 1, pp. 22-39.

Rice, S., Trafimow, D., Hunt, G. and Sandry, J. (2010), "Generalizing kant's distinction between perfect and imperfect duties to trust in different situations", *Journal of General Psychology*, Vol. 137 No. 1, pp. 20-36.

Sandeep, M.S. and Ravishankar, M.N. (2014), "The continuity of underperforming ICT projects in the public sector", *Information & Management*, Vol. 51 No. 6, pp. 700-711.

Schoorman, F.D., Mayer, R.C. and Davis, J.H. (2007), "An integrative model of organizational trust: past, present, and future", *Academy of Management Review*, Vol. 32 No. 2, pp. 344-354.

Shilpi, F. and Umali-Deininger, D. (2008), "Market facilities and agricultural marketing: evidence from Tamil Nadu, India", *Agricultural Economics*, Vol. 39 No. 3, pp. 281-294.

Siala, H., O'keefe, R.M. and Hone, K.S. (2004), "The impact of religious affiliation on trust in the context of electronic commerce", *Interacting with Computers*, Vol. 16 No. 1, pp. 7-27.

Singh, B. (2007), *Whither Agriculture in India*, N.R. Agrawal & Company, Agra.

Singh, S. (2006), *Selected Success Stories on Agricultural Information System*, Asia-Pacific Association of Agricultural Research Institutions, Bangkok.

Song, F. (2009), "Intergroup trust and reciprocity in strategic interactions: effects of group decision-making mechanisms", *Organizational Behavior and Human Decision Processes*, Vol. 108 No. 1, pp. 164-173.

Swartz, D. (1997), *Culture and Power: The Sociology of Pierre Bourdieu*, The University of Chicago Press, London.

Sztompka, P. (1999), *Trust: A Sociological Theory*, Cambridge University Press, Cambridge.

Thielmann, I. and Hilbig, B.E. (2014), "Trust in me, trust in you: a social projection account of the link between personality, cooperativeness, and trustworthiness expectations", *Journal of Research in Personality*, Vol. 50 No. 1, pp. 61-65.

Tollens, E.F. (2006), "Market information systems in sub-sahara africa challenges and opportunities", *International Association of Agricultural Economists Conference*, *Gold Coast*.

van der ploeg, J.D. (2012), "Poverty alleviation and smallholder agriculture: the rural poverty report 2011", *Development and Change*, Vol. 43 No. 1, pp. 439-448.

Walsham, G. (2010), "ICTS for the broader development of India: an analysis of the literature", *EJISDC*, Vol. 41 No. 4, pp. 1-20.

Walsham, G., Robey, D. and Sahay, S. (2007), "Foreword: special issue on information systems in developing countries", *MIS Quarterly: Management Information Systems*, Vol. 31 No. 2, pp. 317-326.

Yamagishi, T., Kikuchi, M. and Kosugi, M. (1999), "Trust, gullibility, and social intelligence", *Asian Journal of Social Psychology*, Vol. 2 No. 1, pp. 145-161.

Yosano, A. and Hayashi, N. (2005), "Social stratification, intermediary groups and creation of trustfulness", *Sociological Theory and Methods*, Vol. 20 No. 4, pp. 27-44.

Further reading

Cavaye, A.L.M. (1996), "Case study research: a multi-face-ted research approach for IS", *Information Systems Journal*, Vol. 6 No. 1, pp. 227-242.

Dictionary C. E. (2000), "Emancipate", 21st Century Edition, Collins, An Imprint of Harper Collins Publishers, Glasgow.

Stahl, B.C. (2008), "The ethical nature of critical research in information systems", *Information Systems Journal*, Vol. 18 No. 1, pp. 137-163.

Corresponding author
Ranjan Vaidya can be contacted at: r.vaidya@auckland.ac.nz