Chapter 5
Digital Technologies and Pro-poor Finance

Silvia Masiero and M. N. Ravishankar

Abstract Social enterprises need to be ambidextrous, i.e. simultaneously pursue social and financial goals. In this paper we focus on how digital social entrepreneurs at the base of the pyramid implement ambidextrous strategies. We draw on a case study of Rang De, India's first platform for the delivery of credit to the poor, whose ecosystem involves multiple intermediaries and thousands of borrowers all over India. The paper identifies key actor-technology mechanisms leading to the achievement of social and financial goals, finding that the platform is instrumental to building trust amongst the social investor community and, at the same time, delivering loans at the base of the pyramid. The study contributes to a deeper understanding of pro-poor finance in the Indian context and also adds to the literature on digitally driven financial inclusion.

Keywords India · Digital entrepreneurship · Financial inclusion

5.1 Introduction

Across the developing world, an estimated 2.5 billion adults lack access to basic formal financial services, which are costly or not well suited to their needs (Mas & Radcliffe, 2010). Financial inclusion is important for improving the living conditions of poor farmers, rural enterprises and other vulnerable groups. In their seminal work on the functioning of entrepreneurship at the base of the pyramid, Prahalad and Hammond (2002) have suggested that digital technologies could alleviate at least some of the issues related to access and that they need to be tailored in order to provide safe and affordable finance options for below-poverty-line households.

However, it is operationally difficult for digital enterprises to do so. Organisations engaging in finance for the poor encounter multiple issues, ranging from technical viability to social and political complexities of many sorts (Banerjee, Duflo, Glennerster, & Kinnan, 2015). In particular, the traditional model of microfinance is

S. Masiero (✉) · M. N. Ravishankar
School of Business and Economics, Loughborough University, Loughborough, UK
e-mail: s.masiero@lboro.ac.uk; m.n.ravishankar@lboro.ac.uk

criticised for its high cost of credit, resulting in an unsustainable model of service provision. As technologies are incorporated in financial services for the poor, it is paramount that they are tailored to guaranteeing affordability and effectiveness of finance.

Over the last decade, digital technologies have been incorporated in base-of-the-pyramid financial service provisions. However, the outcomes of such efforts have not yet been the object of systematic study. In particular, challenges on the technical and political front make it hard for organisations to become effective financial service providers and call for 'ambidextrous' approaches that pursue competing goals at the same time (Gibson & Birkinshaw, 2004). Looking at digital entrepreneurship at the base of the pyramid, in this chapter we frame ambidexterity as the simultaneous pursuit of social as well as more instrumental or financial goals (Hahn, Pinkse, Preuss, & Figge, 2016).

This chapter studies Rang De, the first digital platform for the delivery of affordable credit in India. Rang De, based in Bangalore, has built a strong financial ecosystem involving thousands of social investors and provides credit to thousands of borrowers all over India. Rang De provides a strong example of harmonisation of social and commercial goals and constitutes a good case to explore the processes behind such harmonisation. In this chapter, building on the Rang De case, we address the question: how do digital entrepreneurs at the base of the pyramid implement ambidextrous strategies?

The chapter explores and identifies key actor-technology mechanisms that undergird the achievement of social and financial goals. Based on empirics collected during fieldwork with the Rang De team in Bangalore, we identify two enabling mechanisms, respectively centred on trust-building (the digital platform is instrumental to mobilising the trust of social investors) and smooth delivery of loans (the platform is essential for building solid and continuative relations with borrowers and intermediaries). The two mechanisms are mutually reinforcing, and the chapter illustrates how their combination allows the simultaneous pursuit of contrasting goals, leading to Rang De's strikingly impactful results.

The chapter's theorising around ambidexterity and digital pro-poor finance has implications at two levels. First, it helps explain pro-poor finance especially in the Indian context, where multiple failures of the traditional model demand urgent innovation. Second, it contributes to explaining how models of digital finance for the world's poor and marginalised communities could be constructed.

5.2   Theory

5.2.1   Organisational Ambidexterity

The concept of organisational ambidexterity represents 'an organisation's ability to pursue two disparate things at the same time' (Gibson & Birkinshaw, 2004: 210). The notion of competing acts is important because it points to the paradox achieved

by ambidextrous organisations, whose ability lies in balancing goals of natures that are not only different, but often come across to the external observer as mutually exclusive (Gupta, Smith, & Shalley, 2006; Raisch & Birkinshaw, 2008).

It is significant that existing literature frames ambidexterity mainly as means to achieve financial performance, observing how the simultaneous pursuit of exploration and exploitation is functional to the achievement of greater profits. Against this backdrop, in a nascent stream, a distinction is made between *commercial* goals, aimed at profit sustenance or maximisation, and *social* goals, aimed at the pursuit of value-laden social objectives. Hahn et al. (2016) explore the coexistence of a moral and an instrumental rationale, both of which are essential to corporate social responsibility (CSP) for firms. Pache and Santos (2010) similarly examine the demands imposed by firms' institutional environments, observing the apparent 'collision of worlds' between goals of greater social value (e.g. global poverty reduction) and objectives of a commercial nature.

5.2.2 Ambidexterity for Digital Enterprises at the Base of the Pyramid

Seminal work by Prahalad and Hammond (2002) suggests that firms can serve the poor profitably, meaning they can make a sustainable and successful business by serving communities below the poverty line. They also make the argument that digital technologies play a substantial role in such effort, by connecting marginalised communities and enabling new business models. In this respect, the role of digital technologies as instrumental in serving the poor has generated a wide literature on digital entrepreneurship at the base of the pyramid (e.g. Foster & Heeks, 2013; Hart & Christensen, 2002; Kuriyan, Nafus, & Mainwaring, 2012; Prahalad, 2012).

Digital entrepreneurs at the base of the pyramid need to balance goals of a social and a financial nature. These ambidextrous goals are common to different types of digital enterprises working with poor and marginalised communities. Telecentres, i.e. shared premises where information technologies of diverse types can be accessed, need to make a difference for the poor and be financially sustainable at the same time (Madon, 2005; Kuriyan, Toyama, & Ray, 2006; Masiero, 2011). Impact sourcing ventures, seeking to extend the benefits of outsourcing to marginalised communities, need to engage the poor as service producers and at the same time make sustained profit (Heeks & Arun, 2010; Sandeep & Ravishankar, 2015). Digital platforms for farmers' services, such as m-Farm in Kenya or eKutir in India, need to balance the ability to serve vulnerable farmer groups with that of financially sustaining their own work (Jha, Pinsonneault, & Dubé, 2013).

The coexistence of social and commercial objectives hence emerges as a strong shared objective of digital entrepreneurs operating with the poor. The ability to pursue such goals simultaneously is a crucial factor for survival and success of this

particular type of entrepreneurship. This leads us to ask, how do digital entrepreneurs at the base of the pyramid implement ambidextrous strategies?

5.3   Research Setting

Digital entrepreneurs providing financial services at the base of the pyramid are subject to particular pressure due to the need to provide credit to communities below the poverty line. In particular, some digital finance providers seek to innovate on traditional microfinance, criticised for the dire consequences that its high cost of credit imposes on the poor (Banerjee et al., 2015). Prahalad and Hammond (2002) illustrate the existence of a 'poverty premium', meaning much higher costs of credit to the poor result from informational asymmetry and low bargaining power. As 'fintech' social enterprises start proliferating in developing nations, the need to provide effective pro-poor financial services is combined with that of remaining commercially sustainable.

Rang De is India's first Internet platform for delivering affordable credit through peer-to-peer lending. It is based on a network of 41 intermediary NGOs and social enterprises (referred to as 'impact partners') working in 18 Indian states and operates a digital platform with the objective to lower the cost of credit. Rang De was co-founded in 2006 by digital entrepreneurs Ramakrishna (Ram) NK and his wife Smita, whose business model was inspired by Muhammad Yunus's Grameen Bank. The purpose was that of leveraging the Internet for lowering the cost of credit, by enabling social investors from all over the world to invest in borrowers from poor communities of India.

In the Rang De model, social investors can use the website (www.rangde.org) to browse stories of borrowers, understand their personal history and reasons why they need a loan and then invest in them. Interest rates charged to borrowers vary, from a minimum of 4.50% for higher education loans to a maximum of 10% for microbusiness and special loans. These rates are far more competitive than what is offered by private moneylenders and other microfinance organisations. Borrowers repay their loans on a monthly basis, normally over a period of 1–2 years. As repayments occur, Rang De pays a fee to the impact partner, retaining 2% of the total amount. Finally, Rang De pays social investors an interest of 2%, plus the original amount they had invested. The interest rate breakup of borrower repayments and the yield for each stakeholder are illustrated in Tables 5.1 and 5.2.[1]

A small organisation when it started and in its first years, Rang De expanded very quickly from 2009 to 2010, when it evolved from a platform to an ecosystem of social investors, intermediaries and borrowers all over the nation. Its goal of impacting the lives of borrowers all over India is currently combined with a focus on scale: as founder Ram declared in an interview, the idea is that of becoming 'India's public distribution system for loans', running computerised kiosks from which potential

---

[1] As the table shows, interest is not paid to social investors on primary and higher education loans.

Table 5.1 Interest rate breakup for borrower repayments (for each loan type)

Loan product	Impact partner (%)	Rang De (%)	Social investor (%)	Contingency (%)	Total (flat) (%)	Total (APR)[a] (%)
Business	5.50	2.00	2.00	0.50	10.00	17.97
Higher education	2.00	2.00	–	0.50	4.50	8.41
Primary education	4.00	2.00	–	0.50	6.50	11.79
Microventure	2.00	2.00	2.00	1.00	7.00	12.60
Working capital for artisans	–	2.00	2.00	1.00	5.00	8.98
Special loans	5.00	2.00	2.00	1.00	10.00	17.97

Source: www.rangde.org
[a]APR interest rates are calculated on a monthly repayment schedule

Table 5.2 Interest rate breakup of the yield to each stakeholder

Loan product	Impact partner (%)	Rang De (%)	Social investor (%)	Contingency (%)	Total (APY)[a] (%)
Business	9.88	3.59	3.59	0.90	17.97
Higher education	3.74	3.74	–	0.93	8.41
Primary education	7.25	3.63	–	0.91	11.79
Microventure	3.60	3.60	3.60	1.80	12.60
Working capital for artisans	3.59	3.59	1.80	5.00	8.98
Special loans	8.96	3.58	3.58	1.79	17.92

Source: www.rangde.org
[a]APY interest rates are calculated on a monthly repayment schedule

borrowers can apply directly for a loan. This project, known as *Swabhimaan*, has been successfully piloted in a rural village of Karnataka and accompanied by financial literacy training which enabled borrowers, mainly female, to use the kiosk. An instrument called a *bioscope*, allowing interaction between the user and the digital content, has been built to enable the application process.

Rohit Parakh, a member of the Rang De team, details the rationale of the shift to Swabhimaan:

> While [the current] model works, there are a few challenges. People who are not associated with a self-help group are excluded from the financial system. We want to reach out to the sections of the population who are truly excluded. What we are trying to achieve with *Rang De Swabhimaan* is to allow individuals to seek loans at low interest rates. The money will directly be transferred to their bank accounts.

To pursue its scaling project, Rang De leverages innovations, both financial and technological, that the Indian government has engaged with at multiple levels. The first one, known as the *Pradhan Mantri Jan Dhan Yojana*, is a programme aimed at enabling even the poorest of the poor to have a bank account: since borrowers need a bank account to receive their loans, the existence of Jan Dhan is instrumental for them to do so. The presence of *Aadhaar* and the identification scheme that provides

a unique 12-digit number to all those enrolled and captures their biometric details is also important. All Rang De borrowers need an Aadhaar number to verify their identity, and they will need one to use the Swabhimaan kiosk. Finally, payment banks – a bank model tailored for low-income households – have started operating in 2017 and will be utilised for Swabhimaan's diffusion.

5.4   Methods

To understand the social worlds of human actors in their contextual setting (Ravishankar, 2013), we conducted an interpretive case study (Mayasandra, Pan, & Myers, 2006; Walsham, 1995), meaning a type of case study in which the multifaceted views of respondents are taken to represent reality. Data collection has been carried out from November 2016 to April 2017 on the ecosystem around Rang De, starting from exploratory interviews with the platform's founders and social investors. Fieldwork has been conducted with the Rang De team in Bangalore, the technologists supporting financial innovation and two of the impact partners that mediate the organisations' relation with borrowers. More data have been collected through a virtual ethnography of the Rang De website and the many blogs, online journals and social media on which Rang De's experience of digital pro-poor finance is recounted.

Data analysis has been informed by the concept of generative mechanisms, seen as the underlying and often unobservable causal structures that lead to events (Mingers, 2004). More specifically, we focused on seeking the generative mechanisms that lie behind the empirically observed ability of Rang De to pursue financial and social objectives at the same time. In the first stage of our analysis, a collection of all our data was compiled, in order to find themes related to Rang De's ambidexterity and code the data accordingly (Strauss & Corbin, 1998). In the second stage, themes have been mapped and related to each other in order to formulate possible explanations, which have then been validated with respondents. This process has been chosen in virtue of its suitability to answer an explanatory research question, centred on the causal structures behind phenomena (Gregor, 2006).

5.5   Findings

Our analysis answers the question on how digital entrepreneurs implement ambidextrous strategies by illustrating two actor-technology mechanisms enacted through Rang De's digital platform. This creates a virtuous cycle in which the effective delivery of loans feeds the trust of social investors in the organisation, and such trust generates the capital needed for sustainability and further scaling.

5.5.1 Effective Delivery of Loans

Timely and efficient disbursement of loans to recipients is crucial for the Rang De model. Having been developed in direct opposition to the more costly model of microfinance, delivery of loans from Rang De needs to be cheaper to the borrower and sustainable, in a context ridden with technical hurdles (e.g. lack of financial infrastructure) and political ones (e.g. influence of exploitative moneylenders). In spite of these hurdles, Rang De distinguishes itself for a strong record of loan delivery.[2]

In the pursuit of this record, Rang De leverages digital technologies in two ways. The first is the construction of long-term relations with intermediaries, resulting into a system of trusted NGOs that spans a large part of the nation. Our field data reveal that impact partners share reports with Rang De, in which they detail the borrowers' situation and justify any case of missing repayment. What is crucial, in the relation with intermediaries, is the importance of nondigital contact, which consists in field visits where Rang De's impact team directly appraises the situation of borrowers and consolidates the relation with key individuals in the partner organisation.

The second way, enhanced through the recent Swabhimaan project, lies in multiple disintermediation activities. As suggested above, the Swabhimaan project embodies the goal of directly reaching communities whose marginalisation prevents them from even accessing self-help groups. To do so, technology is used to operate kiosks where financial literacy courses are imparted, a test is taken by borrowers and loan applications by previously financially illiterate women take place. After a successful pilot in Bangalore's Kolar district, the Swabhimaan project is to be scaled up to the rest of Rang De's states.[3]

It is the blending of intermediation and direct contact with borrowers, only recently shifted towards the latter, that allows Rang De to deliver loans in an effective and transparent way. The main finding coincides with the blending of digital and nondigital organisation and highlights the interdependence of these two forms of action in Rang De's work. In the absence of a digital platform, low-cost loan delivery would not be possible, but in the absence of face-to-face contact, a network of intermediaries would not exist. The combination of the two leads to financially and socially sustainable loan delivery.

---

[2] At our latest check (29 August 2017), 59,905 loans had been disbursed by Rang De since its establishment.

[3] https://www.rangde.org/swabhimaan, accessed 29 August 2017.

5.5.2   Building Trust of Social Investors

A precondition for the good functioning of Rang De is a large number of social investors, but it is difficult to reach the credibility needed for individuals to engage. As a current social investor details:

> I came across Rang De through a post on The Better India website and my reaction was SCAM, FRAUD! After all, what seems too good to be true is more often than not, just that – too-good-to-be-true. After what seemed like a lifetime of hearing about such initiatives that went wrong, I had low trust to start off with.

Our interviews reveal that suspicion is often the first reaction of those encountering Rang De. This requires the organisation to engage in systemic operations of trust-building, which are again supported by the digital platform and especially by the web interface. In particular, three actions – detailing of narratives, operations and impact – are performed through the web presence.

Detailing of narratives refers to provision of synoptic recounts on the borrowers' life stories. Browsing the website a list of borrowers appears, classifiable by state and type of activity. For each borrower a synthetic story of the emerging business is provided; this is often matched by photos and/or videos taken during the impact team's visit to the field. As witnessed during one of these visits, the impact team collects detailed narrative data on each borrower, and two members of the marketing team come along to convert such information into words and pictures which are then shared online.

Detailing of operations also happens on the website. A blog section, curated primarily by the impact team, is functional to inform prospective and current investors of the day-to-day workings of the organisation. In addition, social investors receive detailed reports on their loan repayments, which increases transparency of the key phases of the repayment process. Furthermore, the organisation's transaction reports are detailed in a specific section of the website, to abide by the principle of transparency that has been developed against widespread mistrust.

Finally, *detailing of impact* is both in terms of figures (reported on the website's home page) and in terms of life changes resulting from borrowers' access to a Rang De loan. Careful documentation of impact on borrowers is conducted during the field visits and reported on the website through short videos and written narratives of the changes reached. This helps developing empathy in the social investors, generating a mechanism of digital construction of emotive connections with the borrower. The use of social media, which Rang De pursues through a dedicated team, complements the website by diffusing awareness of this alternative financial model.

Rang De's twofold pursuit of an ambidextrous strategy is summarised in Fig. 5.1. This is what allows the simultaneous pursuit of social and commercial objectives, which are sustained by mutually reinforcing mechanisms. On the one hand, effective loan delivery feeds social investors' trust in the organisation, as it is reflected in the narratives, operations and impact that the website details. On the other hand, trust of increasing numbers of investors allows loan delivery to continue and is the
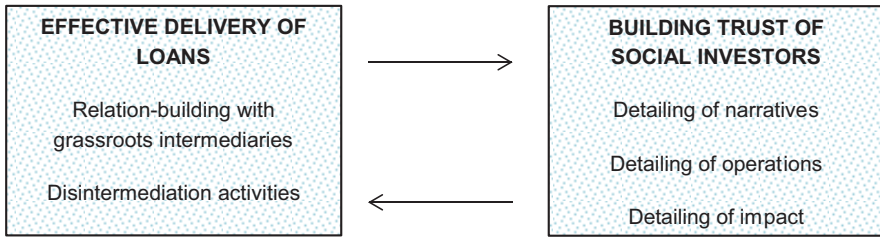
Fig. 5.1 Mechanisms informing Rang De's ambidextrous strategy

basis on which the recent scaling strategy, based on Swabhimaan's diffusion, has been developed.

5.6 Discussion

Social enterprise literature discusses the tensions emerging between social and financial logics, but the role of digital technologies in handling such tensions has not been the focus of systematic research. Our analysis fills the gap by revealing two coexisting actor-technology mechanisms, which explain how Rang De uses digitality in the pursuit of its twin goals. The virtuous cycle illustrated above, explaining effective loan delivery in spite of hurdles, also explains the presence of a wide pool of social investors and the high rate of retention of the existing ones.[4]

While based on a single case study, implications of this research are at two levels. First, it helps explain pro-poor finance in the Indian context, where many problems have emerged with the cost of microfinance. Our analysis reveals that, with a digital strategy aimed at transparency and trust-building, providers can reach a mass of investors that is functional to cost reduction for loans at large. If financial sustainability is pursued, an ambitious project like that of Swabhimaan may be possible, even if limitations dictated by cost and exogenous political factors may emerge.

Second, the study adds to the existing knowledge on pro-poor models of digital finance. In particular, strategic blending of digital and nondigital actions turns out to be crucial for sustainability. As the analysis reveals, the platform is not sufficient for an ambidextrous strategy to work well, and its success still requires face-to-face engagement with intermediaries. Furthermore, the ecosystem's harmony is essential for the model to work, and the importance of the virtuous cycle outlined here lies also in its ability to hold actors together. If so, a platform alone is not sufficient for financial inclusion, but an ecosystem lens (Jha et al., 2016) is crucial to build real life-changing systems.

---

[4] As of August 2017 Rang De had a total of 12,768 social investors. A total of £7.7 million has been disbursed as loans.

References

Banerjee, A., Duflo, E., Glennerster, R., & Kinnan, C. (2015). The miracle of microfinance? Evidence from a randomized evaluation. *American Economic Journal: Applied Economics*, *7*(1), 22–53.

Foster, C., & Heeks, R. (2013). Innovation and scaling of ICT for the bottom-of-the-pyramid. *Journal of Information Technology*, *28*(4), 296–315.

Gibson, C. B., & Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organizational ambidexterity. *Academy of Management Journal*, *47*(2), 209–226.

Gregor, S. (2006). The nature of theory in information systems. *MIS Quarterly*, *30*(3), 611–642.

Gupta, A. K., Smith, K. G., & Shalley, C. E. (2006). The interplay between exploration and exploitation. *Academy of Management Journal*, *49*(4), 693–706.

Hahn, T., Pinkse, J., Preuss, L., & Figge, F. (2016). Ambidexterity for corporate social performance. *Organization Studies*, *37*(2), 213–235.

Hart, S. L., & Christensen, C. M. (2002). The great leap: Driving innovation from the base of the pyramid. *MIT Sloan Management Review*, *44*(1), 51.

Heeks, R., & Arun, S. (2010). Social outsourcing as a development tool: The impact of outsourcing IT services to women's social enterprises in Kerala. *Journal of International Development*, *22*(4), 441–454.

Jha, S. K., Pinsonneault, A., & Dubé, L. (2016). The evolution of an ICT platform-enabled ecosystem for poverty alleviation: The case of eKutir. *MIS Quarterly*, *40*(2), 431–445.

Kuriyan, R., Nafus, D., & Mainwaring, S. (2012). Consumption, technology, and development: The "poor" as "consumer". *Information Technologies & International Development*, *8*(1), 1–12.

Kuriyan, R., Toyama, K., & Ray, I. (2006). Integrating social development and financial sustainability: The challenges of rural computer kiosks in Kerala. Proceedings of the International Conference on *Information and Communication Technologies and Development*, Berkeley (CA), 25-26 May 2006.

Madon, S. (2005). Governance lessons from the experience of telecentres in Kerala. *European Journal of Information Systems*, *14*(4), 401–416.

Mas, I., & Radcliffe, D. (2010). *Mobile payments go viral: M-PESA in Kenya*. Working Paper for the Bill and Melinda Gates Foundation, November 2010.

Masiero, S. (2011). Financial vs social sustainability of telecentres: Mutual exclusion or mutual reinforcement? *The Electronic Journal of Information Systems in Developing Countries*, 45(1), 1–23.

Mayasandra, R., Pan, S. L., & Myers, M. D. (2006). Viewing information technology outsourcing organisations through a postcolonial lens. In E. Trauth, D. Howcroft, T. Butler, B. Fitzgerald, & J. De Gross (Eds.), *Social inclusion, societal and organisational implications for information systems*. Berlin, Germany: Springer.

Mingers, J. (2004). Realizing information systems: Critical realism as an underpinning philosophy for information systems. *Information and Organization*, *14*(2), 87–103.

Pache, A. C., & Santos, F. (2010). When worlds collide: The internal dynamics of organizational responses to conflicting institutional demands. *Academy of Management Review*, *35*(3), 455–476.

Prahalad, C. K. (2012). Bottom of the pyramid as a source of breakthrough innovations. *Journal of Product Innovation Management*, *29*(1), 6–12.

Prahalad, C. K., & Hammond, A. (2002). Serving the world's poor, profitably. *Harvard Business Review*, *80*(9), 48–59.

Raisch, S., & Birkinshaw, J. (2008). Organizational ambidexterity: Antecedents, outcomes, and moderators. *Journal of Management*, *34*(3), 375–409.

Ravishankar, M. N. (2013). Public ICT innovations: A strategic ambiguity perspective. *Journal of Information Technology*, *28*(4), 316–332.

Sandeep, M. S., & Ravishankar, M. N. (2015). Social innovations in outsourcing: An empirical investigation of impact sourcing companies in India. *The Journal of Strategic Information Systems*, *24*(4), 270–288.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research techniques*. New York, NY: Sage Publications.

Walsham, G. (1995). Interpretive case studies in IS research: Nature and method. *European Journal of Information Systems*, *4*(2), 74.

Silvia Masiero is a Lecturer in International Development at the School of Business and Economics, Loughborough University, UK. Her research focuses on the use of information and communications technologies (ICTs) in the field of socio-economic development. Silvia holds a PhD in Information Systems and an MSc in Development Management from the London School of Economics and Political Science. Her research has appeared in scholarly outlets such as ***World Development***, ***Oxford Development Studies***, ***Information Technology for Development*** and the ***Economic and Political Weekly***.

M. N. Ravishankar is Professor of Globalisation and Emerging Markets and Head of the International Business, Strategy and Innovation (IBSI) Discipline Group in the School of Business and Economics, Loughborough University, UK. He conducts interdisciplinary research on the digital economy of emerging markets and their social and economic impacts. Ravi regularly contributes to international conferences and has published over 30 refereed journal articles on globalisation and emerging markets, management of digital technologies, social innovations and global sourcing. He is a Senior Editor of *Information Systems Journal* and is a Member of *IEEE Transactions on Engineering Management*'s editorial board.