Evolving organizational design for digital enterprises in developing countries: A dialectic perspective

Abstract. Digital enterprises in developing countries (DECDs) must meet challenging demands from clients, while generating positive outcomes for society. This implies maintaining several dialectic tensions in a sustainable equilibrium. Drawing on an in-depth qualitative case study, we identify and discuss three tensions pertinent to DECDs: positive social impact-profitability, accuracy-scalability and trust-vigilance. We then emphasize interdependencies between these tensions and explain that addressing one tension may indirectly enhance or constrain other tensions. We further provide empirical evidence on the three tensions and show how DECD organizational design evolves over time in response to these tensions.

Introduction

Prior studies and media reports have extensively discussed the duality of the impact generated by digital enterprises in developing countries (DECDs). On the one hand, some scholars documented the economic development and worker empowerment brought about by outsourced digital work in emerging markets such as India (e.g., Sandeep & Ravishankar, 2016). On the other, critics exposed the unethical, exploitative and marginalizing facets of out- and crowd-sourcing of routine digital work (Kuhn and Maleki, 2017).

DECDs (e.g., IT-BPO organizations, crowdsourcing platforms) must meet challenging demands from clients, while generating positive outcomes for society. This implies a need to balance contradictory tensions and favoring the interests of one category of stakeholders while neglecting others may lead to undesirable outcomes such as lack of market competitiveness for the enterprise or worker exploitation. Prior management literature (Wareham et al., 2014) suggests that addressing contradictory tensions is a matter of organizational design and using the appropriate control levers can maintain the tensions in a sustainable equilibrium. However, in order to design effective organizational arrangements, it is imperative to understand the main tensions faced by DECDs as well as the ways in which these tensions are interacting with each other. Ignoring the interactions between tensions may lead to implementing ineffective or even harmful organizational designs. Against this backdrop, we articulate two research questions: (i) what are
the main tensions affecting DECDs and how are these tensions interacting with each other? and (ii) how do DECDs design organizational arrangements that address this interplay of tensions?

Taking inspiration from Hegel’s dialectical method of reasoning, we identify and discuss three tensions pertinent to DECDs: positive social impact-profitability, accuracy-scalability and trust-vigilance. We then emphasize interdependencies between these tensions and explain that addressing one tension may indirectly enhance or constrain other tensions. We further provide empirical evidence on the three tensions and we show how managers can balance the tensions by designing dynamic and integrated control systems, thereby linking our findings to the configurational theory of control (Cardinal et al., 2010).

This paper builds on a qualitative case involving CloudFactory (CF), a fast growing DECD, with a declared social mission of providing meaningful digital work to one million people in the developing world. This empirical context is interesting for two main reasons. First, CF relies on a dynamic business model to provide a wide variety of services to highly demanding technology companies based mainly in North America and Western Europe. Corroborated with their explicit social mission, this makes CF an exemplary of DECD prone to experiencing acute tensions. Second, with its main delivery sites located in Kathmandu (Nepal) and Nairobi (Kenya), the company manages to provide compassionate and empowering solutions in the developing world where various forms of exploitation are quite common. Thus, our insights suggest that ingenious organizational design can compensate for legal and institutional voids.

**Conceptual framework**

Our conceptual development is informed by Hegel’s dialectical method of reasoning, whereby the opposition of two definitions or views leads to the development of more sophisticated and inclusive concepts. Transferring Hegel’s belief that reason necessarily generates contradictions to an organizational context, dialectical forces compete for inherently limited resources, generating intra-organizational conflict and, eventually, contributing to the emergence of more accommodating organizational arrangements (Benson, 1977). Diverging interests are a potential source of dialectic tensions and, implicitly, a driver for organizational transformation (Benson, 1977). Similarly, we argue that routine data processing requires a
tripartite relationship involving the clients, the DECD and the workers. In this relationship, the DECD faces the challenge of managing the tensions derived from the diverging interests of clients and workers.

**Mission: Social Impact vs Profitability**

The clients usually aim to off-load large volumes of routine work and reduce processing time and costs (Bergvall-Kareborn and Howcroft, 2014). Workers, on the other hand, expect job security, fair wages, and reasonable working hours (Taylor et al., 2014). Even after accounting for wage differentials between developed and developing countries, the clients’ cost-cutting objectives will ultimately collide with workers’ demands for fair wages. Thus, the DECDs must make a clear choice regarding their mission. If the DECDs choose to pursue profitability, then they may transfer the pressures from clients onto the workers by cutting wages and personnel numbers, while increasing working hours (Taylor et al., 2014). Conversely, if the DECD chooses to pursue a mission of positive social impact, then they may maintain the workers’ fair wages, while absorbing clients’ cost-cutting pressures and accepting lower profitability.

Despite a growing body of empirical evidence regarding hybrid organizations that successfully marry social impact and profitability, the two divergent missions generate both external and internal tensions (Battilana and Lee, 2014). Externally, hybrid organizations struggle to attract resources from investors and build legitimacy in the eyes of clients. Internally, hybrids that pursue dual missions experience resource allocation tensions, inter-personal conflicts and, ultimately, mission ‘drift’ as one of the competing goals gains prominence at the cost of the other (Battilana and Lee, 2014).

**Value proposition: Accuracy vs Scalability**

DECDs face an inherent trade-off between delivering accurate output and processing large volumes of data. While accurate output requires closely managed workers, processing large data volumes demands a vast workforce. Managing a vast workforce can be difficult, costly and poses major logistics problems. This value proposition trade-off is reflected in a choice between two business models that are not easily reconciled: the typical IT-BPO model and crowdsourcing.

The IT-BPO organizations use an in-house, fully-employed workforce to provide services of varying complexity, including routine data processing as well as higher value added analytical workflows.
(Taylor, 2014). The IT-BPO model relies on highly standardized, Taylorist workflows and tight controls monitoring attendance, working time, breaks, productivity and quality of output (Taylor, 2014).

Crowdsourcing, in the context of routine digital work, is defined as an internet-supported activity in which a vast pool of amorphous and distributed individuals perform routine tasks posted by clients (usually referred to as ‘requesters’) on a third-party platform in exchange for micropayments (Deng et al., 2016). Crowdsourcing involves very few output quality controls and dissatisfied requesters can rely exclusively on transactional controls and refuse payment for low-quality work. Workers, on the other hand, cannot appeal the requesters’ decisions (Deng et al., 2016).

**Operations: Trust vs Vigilance**

The tripartite relationship client-DECD-workers can be fraught with distrust and opportunistic behavior (see Nooteboom, 1996). Feeling exploited, workers may not be motivated to perform the tasks to the best of their ability. Similarly, clients may suspect workers of opportunism and show little willingness to pay fair wages, thereby creating a vicious cycle that may be preventing exchanges between actors. Such risk can be reduced if a third party (i.e., the DECD) acts as arbitrator (Williamson, 1975). Thus, the vigilance of DECDs can enable exchanges even if workers are inclined towards opportunism. However, in the context of routine digital work, vigilance can be costly and is essentially limited as double-checking millions of minute tasks is clearly an impossible endeavor.

An alternative to vigilance is building trust among the actors involved in the tripartite relationship. Trust-based transactions reduce the costs of designing and deploying vigilance (see Nooteboom, 1996) and address the inherent limitations of vigilance. However, trust can only be built over time, through mutual investment and, paradoxically, by exercising trust itself. Using ‘mistrustful means of governance’ will likely inhibit the emergence of trust (Nooteboom, 1996). Another caveat of trust-based transactions is that the incentives to behave opportunistically increase as partners become more trustworthy and trusting. The temptation to act opportunistically further depends “on the efficiency and reliability by which such defection can be detected” (Nooteboom, 1996; p. 989). Therefore, a certain amount of vigilance is required to maintain trust, while excessive vigilance may prevent the emergence of trust.
**Interplay of dialectic tensions**

These tensions do not manifest independently of one another. They are interdependent and a company’s attempt to address tensions at one level will influence the ways in which the tensions manifest themselves at other levels (see table 1). For example, an easily scalable crowdsourcing business model may enhance the breadth of the social impact delivered by a platform intermediary operating on a global scale. However, a BPO model would allow the enterprise to deliver a deeper social impact within a specific community or limited geographical area. Similarly, the value proposition will impact the DECD’s revenues and profitability. Scalability delivered via a crowdsourcing model allows the processing of a larger volume of tasks, thereby generating higher revenues. The BPO model is inherently limited in terms of task volume, but delivers accurate output allowing DECDs to charge a higher profit margin for each task processed.

Further, the crowdsourcing model is plagued by lack of transparency and information asymmetry, thereby reducing workers’ trust in both platform intermediaries and requesters. Given the global scale and anonymity assumed by crowdsourcing platforms, vigilance is difficult to implement, costly and limited in scope and effectiveness. On the other hand, BPO organizations can choose the development of trust relationships with workers, the implementation of vigilance mechanisms or both.

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<th>Interaction (via crowdsourcing)</th>
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<td>Crowdsourcing business models enhances the breadth of social impact. Crowdsourcing business models constrain the depth of social impact.</td>
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<td><strong>Profitability</strong></td>
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<td>Scalability (via BPO model)</td>
<td>Crowdsourcing business model constrain development of trusting relationships.</td>
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Vigilance may affect profitability in contradictory ways. While the DECD’s vigilance enables transactions between two opportunistic partners (i.e., clients and workers), thereby allowing the generation of profits, vigilance mechanisms can be costly to set up and enforce and, thus, they reduce the DECD’s profitability. Moreover, vigilance can negatively affect social impact. Vigilance (especially through tight controls) can be perceived as stressful and exploitative constraints that negatively influence the well-being of workers and, thus, the social impact generated by the organization. Conversely, trust will generally affect positively the social impact of the organization by reducing stress and increasing comfort. Like vigilance, trust can have a dual effect on profitability. On the one hand, trusting the workers can enhance profitability by reducing the need to implement costly vigilance mechanisms. On the other hand, establishing and maintaining trust among workers may require costly and time-consuming efforts (see Sandeep and Ravishankar, 2016) that will negatively influence the bottom-line.

**Control mechanisms and systems**

Control is a managerial tool that can address and mitigate organizational tensions stemming from needs and requirements of various stakeholders with divergent interests and objectives (Kirsch, 2004). Organizational control encompasses any process or method through which managers direct attention and motivate individuals to act in manner that is consistent with and desirable for the achievement of organizational objectives (Cardinal et al., 2010). Control is exercised by applying formal and/or informal control mechanisms in relation to specific control targets (inputs, behaviors, and outputs) (Cardinal et al., 2010). Organizations hardly ever use singular control mechanisms. Usually, they design control systems consisting of complex configurations of multiple interdependent mechanisms. Depending on the emphasis placed on formal or informal controls, four types of control systems have been identified: market control systems, bureaucratic control systems, clan control systems and integrative control systems (Cardinal et al., 2010).
Case Background

The process of AI development is generating an increasing demand for routine data processing (see Kaplan, 2017). Unlike algorithms-based apps, deep learning AI relies on “enormous collections of examples in digital form” (Kaplan, 2017). Human labor is currently the sole viable solution for processing these vast digital datasets (the examples, in Kaplan’s words) needed to “train” apps that will return correct results (Gray and Suri, 2017). Thus, the advent of AI is generating repetitive, routine work that, paradoxically, cannot be automated and humans performing millions and millions of simple tasks represent the key ingredient “behind the AI curtain” (Gray and Suri, 2017).

CloudFactory (CF) is a distributed workforce company that enables the processing of large datasets related to AI development as well as a wide range of other on-demand digital services which include data-entry (e.g. transcription of receipts, invoices, business cards, financial statements, lease records, medical records, insurance claims, etc.), transcriptions of audio and video recordings, content moderation, image tagging and training for Optical Character Recognition (OCR) engines. Currently headquartered in Reading, UK, the company has production sites in Nepal and Kenya.

Methods

Given the exploratory nature of our study, we adopted an inductive, grounded theory research design (Glaser and Strauss, 1967; also see Wareham et al., 2014). We collected our data in three separate rounds spanning a 14-month period, between January 2017 and March 2018. We conducted 45 semi-structured interviews with CF staff across all hierarchical levels. To analyze our data, we used open coding and continued by grouping information into descriptive and analytic categories (Glaser and Strauss, 1967).

Findings

This section illustrates the evolution of CF’s organizational design in relation to the dialectical tensions that it experienced. We structure our findings around four stages observable in the company’s evolution.1

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1 Space restrictions prevent us from presenting our findings in this conference paper proposal. However, if accepted, detailed findings will be discussed during the conference.
Implications and conclusions

In this paper, we provide detailed insights regarding the evolution of a DECD’s organizational design in response to three emerging dialectical tensions: *social impact-profitability*, *accuracy-scalability*, and *trust-vigilance* (see Figure 1 below for a summary of this evolution). At Stage 1, the company adopted a pure crowdsourcing business model that emphasized scalability at the cost of accuracy. Given the limited control mechanisms compatible with the pure crowdsourcing model, the DECD faced difficulties in addressing the clients’ demands for high accuracy output. Moreover, the low accuracy output did not allow the company to pay meaningful wages to workers, thereby negating any possibility to generate positive social impact. Consequently, at Stage 2, the company adopted a more refined crowdsourcing model involving distributed, yet ‘vetted’ (i.e., tested and trained) workers. The Stage 2 model exposed the company to an interplay of dialectic tensions, but also enabled the development and implementation of a complex control system. Although this ingenious control system mitigated to some degree the intensity of the dialectic tensions, the quest for higher profitability and perceived limitations of microtasking processes drove the company to further alter its business model. Thus, at Stage 3, the company adopted a hybrid business model combining features of the crowdsourcing model with BPO characteristics. In essence, the company added in-house workers performing digital tasks directly on client systems to its already existing distributed workforce processing microtaks on the company’s proprietary platform. While distributed workers provided services monetized on a per-task basis, the in-house workforce delivered subscription-based services. The company’s formal output controls, that had enhanced accuracy at Stage 2, proved inadequate for in-house workers. Consequently, the company developed automated behavior controls and relied on informal output controls (i.e., client feedback) to monitor the performance of in-house workers. As subscription-based services proved far more attractive for clients than microtasking services and gained prominence in the company’s portfolio, new tensions emerged. The in-house workforce was not easily scalable and, implicitly, restricted the breadth of the social impact generated in the local communities. Thus, the company envisioned a future Stage 4 when it would use distributed workers (instead of in-house) to provide
subscription-based services. However, the transition to Stage 4 remained conditioned by the development of more refined automated behavioral controls that could be integrated with clients’ formal output controls.

**Figure 1. Evolution of organizational design in relation to dialectical tensions**

**Implications for Theory**

Our longitudinal case provides a dynamic dialectical analysis that captures the production and transformation of novel organizational designs in the context of routine digital work. We provide extensive insights regarding the process of organizational becoming as well as the mechanisms through which organizational designs are established, maintained and transformed. While prior IS research explained how control mechanisms evolve during different project stages (Kirsch, 2004), we show in this paper how more ample organizational designs, including control mechanisms as well as business models, evolve over time, driven by an interplay of equally dynamic set of dialectic tensions.

As we zoom in and focus squarely on the evolution of control systems (see Cardinal et al., 2010) in the context of routine digital work, we find that control systems specific to pure crowdsourcing models, which are (mainly) *market-based*, often lead to high transaction costs (Williamson, 1975) as the anonymous nature of the workforce favors opportunistic behavior. Consequently, DECDs may adopt (additional) *bureaucratic* (i.e., highly formalized) controls typical for BPO organizations. However, due to the immense volumes of data requiring processing, bureaucratic controls will enable only limited vigilance while
enhancing operational costs. Ultimately, DECDs may have to introduce character-shaping clan controls (e.g., values, norms, practices) aiming to reduce workers’ temptation to engage in opportunistic behavior.

**Implications for Practice**

From a managerial perspective, our study illustrates the shortcomings of ‘open market’ type of digital work platform intermediaries, such as MTurk, while emphasizing the merits of the ‘managed marketplace’-type of platforms where the intermediaries take more responsibility in relation with both clients and workers. On the one hand, ‘open market’ type of platforms enforce minimal controls and function at the limit or outside the boundaries of labor laws and regulations. Consequently, the opportunistic behavior of participants (i.e., requesters and workers) in these digital marketplaces leads to a vicious cycle involving exploitative wages paid for low quality work. On the other hand, a managed platform intermediary imposes structures and controls ensuring the protection of all participants’ interests and guarantying high quality output for clients and fair wages of workers.

For the past decade, the dominant strategy for platforms of all types, from microtasking to ride sharing, involved a focus on fast growth and scale building. ‘The winner takes all’ and ‘bigger is better’ were the managerial mantras capturing such strategies (Wareham et al., 2014). However, a large number of companies with more differentiated value propositions are emerging as competitors for volume-driven intermediaries, such as MTurk. DECDs like TaskUs, Crowdflower and CloudFactory are positioning themselves as more ethical alternatives to MTurk and catching the eyes of clients and investors alike.

**References**


