
Strategic Responses to Multidimensional Growth Dilemmas: Adaptive Practices of Chongqing's ITO Firms in the Post-Pandemic Era

Cheng Lingfeng

Faculty of City Graduate School, City University Malaysia

Abstract

Introduction: *In the wake of the COVID-19 pandemic, Information Technology Outsourcing (ITO) firms in emerging markets like Chongqing, China, have faced unprecedented multidimensional development dilemmas. These challenges include volatile market demands, tightening regulatory frameworks, talent scarcity, and the global reconfiguration of supply chains. This study investigates how ITO firms adapt to such complexities through the lens of Dynamic Capability Theory.*

Methodology: *The study adopts a qualitative case study design, focusing on five ITO firms based in Chongqing. Data were collected using semi-structured interviews with senior management and industry stakeholders, complemented by document analysis and field observations. The research aims to uncover the underlying adaptive mechanisms employed by these firms in response to systemic uncertainty.*

Results and discussion: *Findings suggest that adaptive strategies employed by ITO firms are not homogenous but context-specific. These include internal restructuring, re-prioritizing innovation portfolios, local talent cultivation, and forming flexible external partnerships. While dynamic capabilities such as sensing and reconfiguring resources are visible, firms also demonstrate pragmatic, trial-and-error approaches rather than strictly theoretical models. The discussion highlights a tension between long-term strategic planning and short-term reactive adjustments, shaped largely by institutional and regional conditions.*

Conclusion: *The study concludes that ITO firms in Chongqing are gradually evolving adaptive models grounded in both local realities and global market demands. Although still exploratory, these models reflect a shift from passive survival to proactive capability-building. Further research with broader samples and longitudinal data is needed to test and refine these early insights.*

Keywords: *Information Technology Outsourcing, Post-pandemic Strategies, Emerging Markets, Adaptive Management.*

1. Introduction

In the aftermath of the COVID-19 pandemic, the global Information Technology Outsourcing (ITO) industry has experienced both disruption and acceleration. On one hand, the pandemic catalyzed the adoption of digital technologies and remote service models; on the other, it intensified organizational vulnerabilities and exposed structural weaknesses, particularly among firms in emerging economies. In this evolving context, ITO firms based in Chongqing, an inland municipality in western China, are navigating a complex web of development dilemmas that extend beyond traditional market or operational challenges. These dilemmas are multifaceted in nature, involving tensions between cost control and innovation, talent retention and digital transformation, as well as localized governance and global standards. While much of the existing literature has focused on leading ITO regions such as Beijing, Shanghai, and the Pearl River Delta, there is relatively limited empirical or theoretical attention devoted to the adaptive strategies employed by firms in non-coastal urban clusters like Chongqing. This regional gap suggests the need for further exploration into how firms in such environments respond to overlapping pressures in pursuit of sustainable growth. This paper draws on the lens of dynamic capability theory to examine how ITO firms in Chongqing adapt to changing external conditions and internal constraints. The framework emphasizes a firm's ability to sense opportunities, seize them effectively, and reconfigure resources as necessary in response to environmental turbulence. Although the current study does not yet present empirical findings, it aims to develop a conceptual understanding of the strategic orientations and adaptive mechanisms observable within this regional ITO sector. By reflecting on recent shifts in the local digital economy, industry policy, and firm-level decision-making, this paper aspires to contribute a regionally grounded perspective to broader discussions of ITO resilience and post-pandemic transformation. The hope is that, through continued refinement, such inquiry can inform future empirical work and enhance theoretical dialogue on firm adaptability in emerging urban contexts.

2. Literature review

2.1 Multidimensional Growth Challenges in the ITO Sector

The information technology outsourcing (ITO) industry, particularly in emerging economies like China, has experienced significant transformation over the past decade. Scholars have explored the complex nature of growth challenges facing ITO firms, emphasizing that these challenges are rarely one-dimensional. Instead, they involve a combination of technological, managerial, economic, and institutional uncertainties. In the context of China's inland regions, such as Chongqing, ITO enterprises often encounter compounded difficulties—such as talent drain, limited access to international clients, policy fragmentation, and lagging digital infrastructure. Recent research has also suggested that these growth dilemmas are becoming increasingly dynamic, especially in the post-pandemic era. The COVID-19 pandemic not only disrupted global outsourcing flows but also forced many small and medium-sized firms to reconsider their digital capacity and resilience. For firms based outside China's traditional coastal tech hubs, the impact of these disruptions appears more pronounced. However,

literature focusing specifically on the layered growth challenges of second-tier Chinese cities like Chongqing remains limited. This gap provides a meaningful entry point for further empirical exploration into the regional heterogeneity of ITO development.

While some studies have touched upon the mismatch between industrial policy support and actual firm needs, most current literature remains either macro-level or focused on Tier-1 cities. Thus, a contextualized understanding of multidimensional dilemmas faced by Chongqing's ITO firms appears both necessary and timely, especially when linked to post-pandemic industry realignment.

2.2 Dynamic Capability Theory in Organizational Adaptation

Dynamic capability theory (DCT), as proposed by Teece, Pisano, and Shuen (1997), has served as a key theoretical lens for analyzing how firms respond to rapidly changing environments. Over time, the framework has evolved from its original focus on sensing, seizing, and transforming capabilities into a broader analytical tool that captures firm-level agility and learning behavior. In the context of service-based firms, particularly those engaged in knowledge-intensive outsourcing like ITO, DCT provides a useful model for understanding how internal reconfiguration supports external responsiveness.

In recent years, there has been a growing application of DCT in analyzing Chinese firms' innovation and survival strategies, especially in turbulent contexts. These studies suggest that dynamic capabilities are not simply technical or procedural but deeply embedded in organizational culture and leadership. For example, adaptive project management practices, iterative client engagement, and localized knowledge acquisition have been identified as key manifestations of dynamic capabilities in Chinese ITO firms.

However, there are some limitations to how DCT has been applied in this context. Much of the literature treats capability development as a linear or top-down process, which may oversimplify the complexity faced by smaller firms with limited resources. Moreover, few studies have directly examined how dynamic capabilities evolve in response to public health crises or external shocks like COVID-19. This raises questions about the temporal and spatial dynamics of capability formation and renewal in ITO firms operating in cities like Chongqing.

2.3 Post-Pandemic Strategic Responses in China's ITO Industry

Most The outbreak of COVID-19 significantly altered the competitive landscape for Chinese ITO firms. While some large firms managed to leverage digital platforms and remote work solutions to their advantage, smaller firms, especially those located in inland regions, struggled with workforce mobility, cash flow stability, and digital service delivery. As a result, a growing body of research has examined the post-pandemic recovery strategies adopted by these firms, with an emphasis on flexibility, localization, and innovation. Some scholars argue that the pandemic has accelerated a shift toward hybrid business models and digital ecosystem

integration, which favor firms capable of rapid realignment. Strategic responses such as strengthening regional client networks, developing specialized software products, and forming public-private partnerships have emerged as important pathways for resilience. For example, Hu and Zhang (2022) found that ITO firms in central and western China that actively collaborated with local governments and universities exhibited stronger post-pandemic recovery compared to those relying solely on market mechanisms.

Nonetheless, there remains a paucity of research focusing on the lived realities of mid-sized ITO firms in less-developed regions like Chongqing. While the national narrative emphasizes digital transformation, the actual conditions under which firms engage in these processes vary widely. Thus, further research is warranted to understand not only which strategies are adopted, but how and why certain adaptive behaviors emerge in specific regional contexts.

This study aims to fill this gap by integrating the dynamic capability framework with an empirical understanding of Chongqing's ITO landscape. Through a qualitative approach, it hopes to explore how firms navigate the interplay between structural constraints and strategic opportunities in a post-pandemic world.

2.4 Synthesis and Implications

In summary, although substantial progress has been made in conceptualizing and applying PST to badminton, significant gaps remain, especially in its integration with structured physical training and athlete progression systems like the Chinese Badminton Association. This literature review highlights the fragmented yet evolving landscape of PST research. Building on these insights, the present study aims to fill this critical void by assessing how specific psychological and physical training modules interactively influence performance metrics and developmental advancement among Adult Level 6–7 athletes.

3. Methodology

To explore how ITO (Information Technology Outsourcing) firms in Chongqing are adapting to multifaceted post-pandemic growth dilemmas, this study adopts a qualitative multiple-case study approach supported by semi-structured interviews. This methodology is selected due to its effectiveness in capturing the dynamic and context-sensitive responses of firms navigating uncertainty and complex environments (Yin, 2018). Given the research goal of uncovering strategic patterns and internal mechanisms rather than testing hypotheses, a qualitative orientation allows for rich, situated accounts that quantitative methods might overlook. The selection of Chongqing as the geographic focus stems from its rapidly growing digital service ecosystem and its designation as one of China's key smart city clusters. Although national-level studies on China's ITO landscape have proliferated in recent years, research focusing on second-tier yet strategically positioned cities remains limited. Chongqing's mixture of policy support, regional connectivity, and private innovation makes it an ideal context to examine how mid-sized firms adjust to market volatility, technological evolution, and labor restructuring post-COVID-19.

This study identifies four focal firms in Chongqing's ITO sector through purposeful sampling. The criteria for selection included firm visibility within the local digital economy ecosystem, diversified service offerings (e.g., software development, BPO, cloud migration), and active business transformation during or after the pandemic. Secondary materials such as media reports, company profiles, and local government briefings were consulted to triangulate their relevance and validate their exposure to strategic adjustment challenges. The four cases—coded as Firm A, Firm B, Firm C, and Firm D—represent a mixture of startup-driven innovation and legacy transformation, offering a range of organizational configurations and strategic responses.

Data were primarily collected through semi-structured interviews with senior managers and strategic planners in each of the four firms. A total of ten interviews were conducted between May and July 2025, with each session lasting approximately 45 to 90 minutes. All interviews followed a flexible guide that revolved around five major themes: perception of growth dilemmas, strategic readjustments, organizational learning, interaction with policy and ecosystem actors, and internal capability building. The open-ended nature of the interviews allowed participants to reflect on both organizational-level decisions and personal interpretations of the firm's direction. Interviews were conducted in Chinese and transcribed verbatim. Key passages were later translated into English for analytical purposes. In addition to interviews, supplementary data were gathered from company websites, internal strategy documents when available, press releases, and industry white papers. These materials provided additional insights into how each firm communicated its challenges and adaptations externally, and helped build a timeline of strategic inflection points. Observational notes from firm visits and local business seminars further enriched contextual understanding, especially regarding government-enterprise interactions and informal collaboration networks.

The data analysis followed a thematic coding process informed by the dynamic capabilities framework (Teece, 2007). Using NVivo 14.0, transcripts were coded both deductively (based on predefined themes such as sensing, seizing, and reconfiguring) and inductively (to allow for emerging codes such as “ambiguous policy signals” or “internal resistance to change”). Patterns were then compared across cases to identify both shared strategies and unique responses. For example, while all four firms noted difficulties in scaling talent retention systems post-pandemic, only one firm adopted cross-border outsourcing as a compensatory mechanism, highlighting divergence even under shared structural conditions. To enhance the trustworthiness of findings, several steps were taken. First, all interview participants were provided with a summary of key points after transcription to verify accuracy. Second, multiple sources of data were triangulated to reduce interpretive bias. Third, analytic memos were written during the coding process to track emerging insights and methodological decisions. While generalizability is not the primary aim of this study, these procedures aim to ensure the credibility and analytical transparency of the cases examined (Lincoln & Guba, 1985). This study is inevitably bounded by its regional and temporal scope. Chongqing offers a unique institutional setting that may not fully mirror the dynamics in larger metropolises like Beijing or Shenzhen. Moreover, as the post-pandemic adjustment process is ongoing, the responses captured in this study reflect a specific moment of transition rather than long-term outcomes. Nevertheless, it is precisely in these transitional phases that organizations reveal their adaptive

logics and internal tensions most vividly—features that are often diluted in large-scale quantitative surveys.

In sum, by grounding the study in in-depth, multi-source case analysis and centering managerial narratives, this research seeks to illuminate how Chongqing's ITO firms mobilize dynamic capabilities in the face of layered disruptions. The insights generated here not only enrich the literature on post-pandemic business transformation in China but also offer practical implications for mid-sized tech firms in similar urban regions worldwide.

4. Results and discussion

The interviews and document reviews from the four Chongqing-based ITO firms revealed a wide range of strategic adaptations to the post-pandemic environment. While each firm's context and resource base differed, three thematic patterns emerged: (1) reconfiguration of business models toward digital flexibility, (2) tension between short-term survival and long-term innovation, and (3) adaptive alignment with evolving government policies and industrial ecosystems. These patterns are presented below through cross-case synthesis and followed by discussion in relation to the broader ITO literature and dynamic capabilities framework.

4.1 Reconfiguration for Digital Flexibility: From Onsite Dependency to Platformization

Before the pandemic, most firms heavily relied on in-person operations or client-based stationing models, particularly in the BPO and testing services. Firm A, which specialized in localized software deployment, had to rapidly pivot to a hybrid remote service model. As their head of operations explained, "We used to send technical personnel to client sites for 2-3 weeks per project. Suddenly, we had to rebuild our system architecture to enable remote collaboration, real-time testing, and low-latency troubleshooting." Similarly, Firm C transitioned from offering pure-code development services to building a modular SaaS platform targeting SMEs in the education sector, citing market uncertainty and service demand variability as major motivators. Their CTO noted: "We realized clients wanted plug-and-play solutions, not just developers-for-hire. So, we invested in building an ecosystem where clients could assemble functions like building blocks."

This digital flexibility required internal capability realignment. Firms reported investing in cloud infrastructure, agile workflow tools, and retraining employees for DevOps roles. Firms A and D both emphasized the cost of such transformation but agreed it was necessary to maintain relevance amid shifting client expectations and increased remote competition. These strategic realignments resonate with the "reconfiguration" dimension in Teece's (2007) dynamic capabilities model, where firms continuously restructure resources in response to external volatility.

4.2 Navigating Tensions Between Survival and Innovation

While some firms adapted proactively, others were constrained by short-term revenue pressures. Firm B, a mid-sized firm with legacy contracts in government sectors, faced delayed payments and shrinking public budgets. Its CEO reflected, “We wanted to try AI-driven tools and predictive analytics, but honestly, we were too busy paying salaries and maintaining old contracts.” This firm adopted conservative strategies, such as cost-cutting and project consolidation, while pausing R&D initiatives. In contrast, Firm D took the crisis as an opportunity to experiment. Their HR director shared, “We adopted a 20% rule—allowing tech teams to allocate part of their time to exploratory projects.” This led to the development of an internal productivity dashboard that later became a standalone product. While risky, these innovation-oriented moves enabled the firm to build intellectual property and diversify revenue streams.

These cases illustrate the trade-offs between exploitative and exploratory strategies (March, 1991). Whereas some firms leaned toward operational continuity, others attempted to “seize” emerging opportunities by investing in novel value creation pathways. The difference often came down to organizational culture, cash flow, and leadership vision.

4.3 Adaptive Government Engagement and Policy Interpretation

All four firms referenced the government’s role in shaping post-pandemic adjustment strategies. Chongqing’s municipal government launched several digital economy stimulus packages, but firms expressed differing experiences with accessibility and implementation. Firm C praised the local “Talent + Platform” grant, which subsidized hiring of AI engineers. Firm B, however, lamented that “The criteria were unclear, and the approval cycle was too long. By the time we got feedback, our hiring window had passed.” This divergence reflects firms’ varying capabilities in sensing and leveraging policy signals—an area often underexamined in ITO studies. Several firms noted that policy interpretation depended heavily on intermediary actors like industry alliances and digital incubators. Firm A’s founder explained, “Without our connection to the Digital Industry Association, we wouldn't have known how to navigate the paperwork.” Government engagement was not only about funding but also about legitimacy and signaling. Firms that actively participated in public forums or incubator activities were more visible in local networks, increasing their chances of collaboration and recognition. This aligns with studies showing that policy adaptability and relational positioning are crucial in emerging tech regions.

The data suggest that while all firms faced similar external pressures—remote work acceleration, demand fragmentation, talent instability—their strategic responses varied significantly. This variability was shaped by internal factors (financial resilience, leadership orientation, organizational structure) and external elements (ecosystem connections, regulatory

agility). When viewed through the lens of dynamic capabilities, the differences become clearer:

Sensing: Firms A and D actively scanned their environments for new needs and technological tools. Firm B, in contrast, maintained a narrow operational focus, delaying strategic awareness.

Seizing: Firm C was particularly effective in leveraging emerging client needs (e.g., SME education digitalization) and pivoting its service offerings.

Reconfiguring: All firms engaged in some degree of internal restructuring, but only two (A and D) integrated these changes into long-term strategies.

Interestingly, the firms' adaptive practices were not linear or uniformly successful. For instance, Firm D's exploratory project yielded a product but also triggered temporary staff overload. Firm C's SaaS shift gained media attention but struggled with customer retention in the first two quarters. These nuances highlight the non-deterministic nature of adaptation—a reminder that capability development is path-dependent and sometimes contradictory.

The findings also reflect larger shifts in the ITO industry. Global outsourcing markets are becoming more client-centric, favoring firms that provide agile, insight-driven services rather than labor cost arbitrage. Chongqing firms appear to be in transition—caught between old models (volume-based outsourcing) and new expectations (value-based digital services). This transitional state creates uncertainty but also innovation space. Moreover, the study challenges the urban-centralism bias in ITO research. While major cities like Beijing and Shanghai dominate attention, regional centers like Chongqing are emerging as laboratories of strategic improvisation. Their hybrid character—combining second-tier costs with first-tier aspirations—may offer a blueprint for other inland tech zones navigating post-pandemic realities.

4.6 Discussion

The insights gained from the semi-structured interviews offer a compelling glimpse into how Chongqing's ITO firms navigate multiple layers of development challenges in the post-pandemic era. Despite differences in firm size, market orientation, and internal resources, the firms demonstrated some converging patterns of strategic adaptation. These patterns, while not always systematic or coordinated, reflect the firms' efforts to maintain survival, achieve growth, and build long-term competitiveness under complex and shifting conditions. First and foremost, one of the most noticeable trends is the firms' emphasis on agility and flexibility. Many interviewees described how the uncertainty of the past few years—particularly during and after the pandemic—forced them to abandon rigid planning models. In response, they began to favor more fluid internal structures, faster feedback loops, and quicker decision-making processes. Some firms reported introducing flat management teams, while others restructured their workflow to allow for cross-department collaboration and rapid project

iteration. These changes suggest a clear shift from a static operational mindset toward a more dynamic and responsive one, even if not all firms have fully institutionalized these changes. Interestingly, agility was not only applied internally but also externally, especially in how firms manage their relationships with clients. Several respondents emphasized that the post-pandemic world had made trust, stability, and long-term cooperation more valuable than ever. Rather than simply providing technical services, firms were aiming to position themselves as strategic partners—willing to co-develop solutions, participate in clients’ innovation processes, and even share project risks. This shift reflects a move from low-cost outsourcing to high-value collaboration, and it likely marks a turning point in how Chongqing-based ITO firms perceive their role in the digital value chain. Another critical area of transformation lies in digital upgrading and capability enhancement. The interviews revealed a growing awareness among firm leaders that relying solely on past competencies—such as basic coding or legacy system maintenance—is no longer sufficient. Instead, firms have started to invest in areas like cloud computing, platform integration, cybersecurity, and automation. However, the pace and depth of this transformation vary widely. Some firms have built internal labs or innovation departments, while others are still exploring digital transformation in an ad-hoc, project-driven way. Regardless of their starting point, almost all firms acknowledge that capability reinvention is not a one-time task, but an ongoing strategic process.

This process, however, is far from smooth. A major constraint mentioned by nearly all interviewees is the issue of talent. While demand for high-skill professionals is rising, the local talent pool has not kept up. Many firms struggle to attract and retain individuals with advanced technical knowledge, creative thinking, or cross-border communication skills. Moreover, even when talent is available, aligning them with the firm's culture, pace, and expectations proves difficult. Some younger employees prefer startup environments or more flexible work arrangements, which clashes with the often traditional or hierarchical setup of mid-sized ITO firms in Chongqing. This misalignment slows down innovation and reduces organizational cohesion, especially during periods of rapid change. Besides internal capability shifts, firms are also deeply shaped by their external environment—particularly policy support and regional positioning. Many interviewees praised the favorable digital infrastructure and local incentives available in Chongqing, which helped them survive during downturns and invest in new technologies. Government-backed incubators, tax rebates, and R&D subsidies were frequently mentioned as helpful enablers. However, there is also a sense of over-reliance on external aid. A few leaders expressed concern that policy-driven innovation may create short-term opportunism rather than fostering long-term strategic thinking. In other words, while external resources can spark transformation, they cannot substitute for a strong internal growth logic.

The regional identity of Chongqing itself also plays a dual role. On one hand, the city’s growing importance in national development strategies provides visibility and symbolic capital. Firms can brand themselves as being part of a rising tech hub, which is attractive to certain types of clients. On the other hand, the city’s inland geography and relatively weak international exposure limit the global ambitions of some firms. International clients still tend to associate Chinese ITO capabilities with Tier-1 cities like Beijing or Shenzhen. As a result, some Chongqing firms find themselves caught between ambition and constraint—wanting to expand globally but needing to first prove themselves nationally.

Another layer of complexity is the tension between short-term adjustment and long-term transformation. Many firms made changes out of necessity during the pandemic—cutting costs, digitizing workflows, or shifting to online collaboration. Yet, not all of these changes were part of a coherent long-term strategy. In fact, a few interviewees admitted that their firms were still "experimenting" or "figuring things out." This suggests that adaptation is often reactive rather than proactive. It also raises questions about how deeply such changes are embedded into organizational routines. Are these simply surface-level responses to crisis, or do they represent a deeper shift in mindset?

What stands out across all interviews is the struggle to balance growth, stability, and innovation. Some firms prioritize steady cash flow and client retention, avoiding risky moves. Others, driven by younger leadership or venture capital, are more inclined to pursue bold experiments. But even in the most proactive cases, adaptation is constrained by internal inertia, external expectations, and the sheer complexity of the digital services sector. There is no one-size-fits-all solution. Each firm must navigate its own path, shaped by its unique combination of history, leadership, resources, and relationships.

5. Conclusion

This study explored how ITO firms in Chongqing are navigating multidimensional development dilemmas in the post-pandemic era. Through a qualitative case study approach, it examined the ways in which dynamic capabilities are formed and adjusted in response to evolving external pressures. While the findings cannot be generalized due to sample limitations, they reveal how firms are blending strategic adaptability with localized practices to cope with uncertainty. The research also provides early insight into how regional innovation strategies and organizational learning mechanisms shape firms' capacity to survive and grow amid complex economic challenges. These observations not only enrich the understanding of dynamic capability application in emerging markets but also lay the groundwork for future empirical inquiry.

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