

Research on the Impact of Telecommuting on Enterprise Innovation – Intermediated by Job Reshaping

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Abstract: Teleworking refers to an office way that uses the mobile Internet to carry out work anytime and anywhere without traditional office scenarios and interpersonal relationships. It includes a variety of modes such as home office, remote office, mobile office, and hybrid office. With the development and popularization of cloud computing, artificial intelligence, industrial robots, and other technologies, more positions will be able to adopt remote working mode, and more and more enterprises are trying remote working and other innovative working modes. This study will take remote working as the background, compare and analyze cases of remote working enterprises in different regions and fields. Furthermore, a comprehensive analysis has been conducted to meticulously delineate the attributes, as well as the merits and demerits. It is found that in the context of remote working, employees' work-reshaping behavior is affected and whether they have active personality traits has an impact on work-reshaping behavior. With different sounds, the innovation ability of enterprises has been improved to a certain extent. To a certain extent, this article will inspire enterprises to open up a new office model, enrich the management model and selection standards, and help enterprises improve creativity and implement innovative development.

Keywords: Telework, job crafting, innovation capability, proactive personality trait

1. Introduction

The outbreak of the COVID-19 pandemic has led to a surge in the prevalence of remote working. In the post-pandemic era, with the integration of virtual technologies such as cloud computing and 5G with basic communication infrastructure, remote working has become an increasingly important new model of modern work. More and more enterprises have begun to experiment with or popularize remote working, and thus, research on this mode of working holds significant importance. The primary question this study seeks to address is whether the reshaping of employee work behavior under the new working model will impact corporate innovation. To date, numerous mature models and theories regarding employee behavior and job crafting have been developed both domestically and internationally, providing valuable insights and methodological guidance for this research. However, most previous studies on remote working have focused on personal factors, leadership characteristics, work performance, and the balance between work and family, with few examples examining corporate innovation capability as the dependent variable. This study will investigate corporate innovation capacity in the context of remote working, with employee job-crafting behavior as the mediating variable and proactive personality traits as the moderating variable. This approach is

expected to inspire enterprises to adopt new working models, enrich management practices and staffing criteria, and thereby enhance their creativity and drive innovative development.

2. The pathways through which remote working influences innovative capacity

In the context of remote working, employees are liberated from the direct supervision of their supervisors and the pressures associated with complex interpersonal relationships. As a result, their job-crafting behaviors are likely to change. Afsar et al. [1] have pointed out that job crafting, by altering the boundaries of work tasks, inevitably leads to the expansion and extension of interpersonal resources and connections within new working contexts and perspectives. Employees can obtain new knowledge and information from these social resources, thereby continuously updating their innovative ideas. Mazmanian et al. [2] found that, based on the Job Demands-Resources (JD-R) model, work resources can enhance employees' work motivation and produce positive effects. To dynamically adapt to the changes brought about by work resources, employees will spontaneously engage in the matching of JD-R through job crafting, thus providing possibilities for innovation and achieving a fit between themselves and their work. In this context, employees' perceived work autonomy and flexibility are significantly higher compared to non-remote workers.

The conceptual model of the impact of remote working on corporate innovation is illustrated in Figure 1. In the remote working context, employees' job crafting behaviors, including cognitive crafting, relational crafting, and task crafting, are affected, which in turn impacts the corporate innovation capability. The presence of proactive personality traits is a key factor influencing employees' task crafting. Subsequent studies have shown that employees with proactive personality traits are more capable of engaging in job crafting in the remote working context. Their proactivity and flexibility are conducive to the innovative development of remote working enterprises.

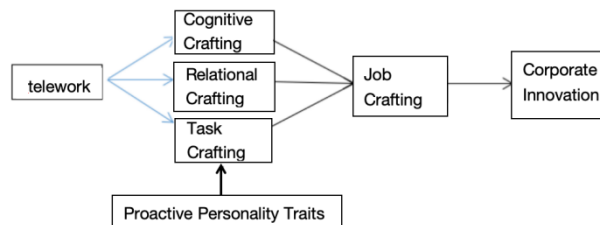


Figure 1: Conceptual model of the impact pathways of remote working on corporate innovation

2.1. Job crafting behavior in remote working contexts

Scholars Wrzesniewski and Dutton were the first to introduce the concept of job crafting, positing that employees would spontaneously alter the boundaries of their work tasks and relationships to align their needs, abilities, and preferences with their jobs [3]. This contrasts with the traditional task assignment model, as job crafting involves employees adjusting their perceptions and division of work by integrating their own characteristics and the nature of their tasks, thereby maximizing their personal value while simultaneously creating greater value for the collective. Job crafting encompasses cognitive crafting, relational crafting, and task crafting.

The impact of remote working on employee job crafting is illustrated in Figure 2. First, cognitive crafting refers to employees changing their understanding and perception of work itself, thereby generating a different sense of meaning in their work, which in turn creates new value. In the context of remote work, the inevitable derivation and expansion of social resources provide employees with diverse experiences, prompting cognitive crafting and subsequently increasing their enthusiasm and creativity at work. Xisheng Liang, focusing on corporate employees, explored the relationship

between work cognition and on-the-job behavior, finding a positive correlation between the two, with the highest correlation observed between work cognition and positive work behavior [4].

Job Crafting		
categorization	behavior and results	influence
task crafting	Employees autonomously increase or decrease the number of tasks, expand or narrow the scope of their work, and alter their performance within the job.	It impacts creativity and accomplishes twice the outcomes with half the endeavor.
relational crafting	Employees alter the scope of their social circles or the quality of their interactions.	The alleviation of employee stress, the manifestation of individualization in the workplace, the concomitant feelings of loneliness and diminished sense of identification with the company.
cognitive crafting	Employees alter their perceptions and understanding of work tasks, relationships, or the nature of the job itself, thereby ascribing new meaning to their work and generating different value.	Influence employees' perception of the value of work, their degree of engagement, and the stimulation of their creativity.

Figure 2: Conceptual model of the impact of remote working on job crafting

Second, relational crafting involves employees changing the scope of their social circles or the quality of their interactions. For instance, computer technicians enhance their social connections by sharing experiences with novices and providing assistance to partners [5]. In remote working scenarios, employees experience reduced direct contact with colleagues and supervisors, thereby alleviating potential pressure from supervisors and anxiety caused by peers, leading to an increase in their well-being. However, prior research indicates that a team's creative potential can only be fully realized when team members engage in in-depth and effective interactions, allowing for the full utilization of internal team resources. Thus, the impact of relational crafting on innovation capability is determined by multiple factors, especially individual personality traits, rendering the situation relatively complex and beyond the scope of this study.

Lastly, task crafting refers to employees autonomously reducing or increasing the number of tasks, expanding or narrowing the scope of work, or altering their performance within the job. In remote working contexts, employees' autonomy and flexibility in work arrangements are significantly enhanced, allowing them to reallocate tasks by integrating their own and job characteristics, thereby stimulating creative potential and enhancing corporate creativity.

2.2. Proactive personality traits in remote working

Bateman and Crant [6] found that employees with proactive personality traits are less restricted by the environment and will exhibit more innovative behavior. They constantly explore new ways, so they are more likely to detect change opportunities and take action to reshape the work until they succeed. Employees with proactive personality traits can better adapt to changes in the environment brought about by interpersonal relationships in the remote work scenario. They will actively communicate with colleagues and leaders, maintain and enhance group creativity, and thus reduce the negative impact of environmental changes on relationship reconstruction. At the same time, employees with this trait can more keenly perceive innovative ways to reshape tasks, enhancing the positive impact of

task reshaping on creativity enhancement. Therefore, employees with proactive personality traits are more suitable for the remote work mode.

3. Empirical case studies of innovation practices in corporate remote working models

The outbreak of the COVID-19 pandemic has led to a surge in the prevalence of remote working, positioning it as one of the significant pathways for economic stability and employment security. Prominent companies such as Facebook, Google, Microsoft, and Apple have normalized remote working by introducing diverse hybrid work systems. In the post-pandemic era, with the development and expansion of emerging technologies, a substantial number of job positions requiring remote working have emerged. Consequently, an increasing number of enterprises have begun to experiment with this mode of working. Previous survey results have indicated that companies adopting remote working exhibit stronger innovation capabilities compared to those that do not. Therefore, the focus of this study is to conduct case analyses of typical companies that have implemented this working model, to explore its characteristics, and to investigate the positive and negative impacts of this working model on corporate innovation capabilities from multiple perspectives [7].

3.1. Ctrip: the hybrid work experiment

Ctrip, the largest online travel service company in China, experimented with remote working as early as 2010. According to the system, on Wednesdays and Fridays, each business unit and functional department of the company could implement or gradually introduce a hybrid working model of 1–2 days per week based on actual management needs. In this model, eligible employees could choose their own workplace for 1–2 days per week, which could be their home, a café, or even a resort.

In 2021, Ctrip launched the “2021 Hybrid Work Experiment”, a six-month trial involving 1,612 employees. The experiment included two control groups, with employees whose birthdays fell on odd-numbered days assigned to the hybrid working group (working from home on Wednesdays and Fridays) and those with even-numbered birthdays assigned to the office-based group (working in the office every weekday). The results showed that the hybrid working model significantly reduced employee turnover by 35%, increased job satisfaction, and enhanced employee creativity. Specifically, the performance of employees working from home improved by 13% over nine months, attributed to reduced sick leave and a more productive working environment. For the company, total factor productivity increased by 20%–30%, and an average cost saving of approximately RMB 14,000 per employee per year was achieved.

However, the relevance of this experiment to the current study is limited for two reasons. First, Ctrip did not adopt a fully remote working model. Second, the short duration of the experiment did not sufficiently demonstrate the long-term advantages or disadvantages of remote working. Therefore, it is not considered a primary focus of this study.

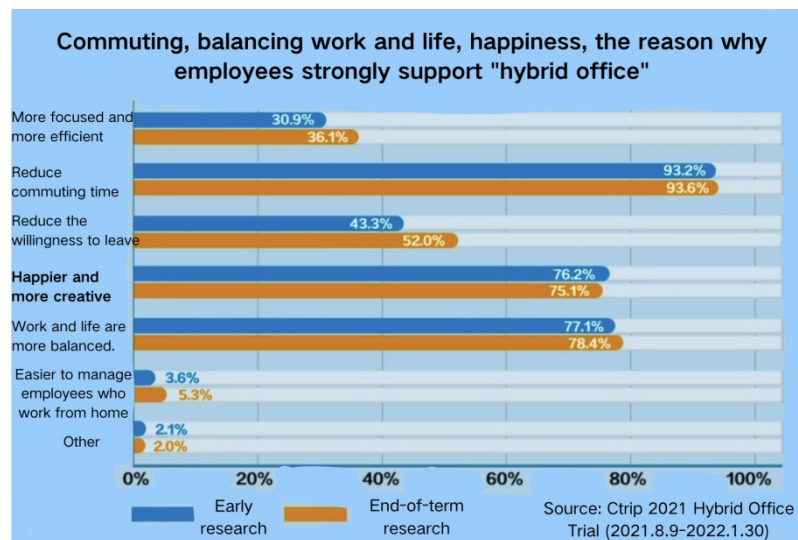


Figure 3: Employee feedback results of ctrip's 2021 Hybrid Work Experiment
Automatic: the fully remote working model

Automatic is a company that fully embraces remote working. With a substantial scale, Automatic currently employs approximately 2,000 staff members across the globe, and its valuation has reached 7.5 billion to date. An examination of Automatic's financial allocation reveals that the remote working model has eliminated the costs associated with office leasing. The significant savings generated from this have been redirected into employee work allowances. This not only dispenses with the myriad trivial matters associated with office leasing but also grants employees greater flexibility in their work. It enables employees to fully exercise their initiative, manifest proactive personality traits, and maximize work efficiency through enhanced remote working experiences. From the perspective of Automatic's corporate culture, the company emphasizes results-oriented practices and encourages innovation. Theoretically, there are no traditional hierarchical relationships; all work is conducted through project teams. Typically, each project team consists of 2 to 12 members, and there is no fixed position of "project manager". The company encourages teams to experiment with new work combinations and collaboration methods, focusing on tangible outcomes. This approach can mitigate the friction often associated with traditional hierarchical relationships, channel employees' energy more effectively, and motivate them to explore new possibilities while fostering their creativity. Amidst the digital labor transformation wave represented by the internet, Scott Berkun argues that creators, rather than professional managers, are the core of the company. For creators such as programmers, writers, and designers, the traditional management model is stifling their creativity.

Despite these numerous advantages that distinguish it from traditional office models, Automatic is unable to operate the remote working model flawlessly. Scott Berkun summarized these challenges in his personal blog as five reasons: (1) lack of allies in the headquarters; (2) a cautious corporate culture; (3) unclear role definitions; (4) poor communication; and (5) hiring the wrong people [8]. The second, fourth, and fifth issues can be alleviated and resolved by hiring employees with proactive personality traits. The third issue, unclear role definitions, is an inevitable part of the exploration process in remote working innovation models. It should be addressed through optimizing management structures and improving various company mechanisms. These shortcomings may also exist in traditional office models, but they are more pronounced in remote working models. Particularly in the context of remote working, hiring employees with proactive personality traits is even more critical.

4. Analysis of the advantages and disadvantages of remote working models and recommendations for measures

In the contemporary era marked by the rapid advancement of information technology, the remote working model is gradually transitioning from the periphery to the mainstream. The rise of this model is not only a result of technological impetus but also an effective strategy in response to external factors, such as sudden public health emergencies and environmental changes. A thorough exploration of the advantages of remote working holds significant implications for corporate management, employee development, and the allocation of societal resources.

4.1. The advantages of the remote working model

From the perspective of business operations, remote work has endowed companies with greater flexibility. Companies are no longer constrained by traditional office spaces and can assemble teams and conduct business anytime and anywhere. For example, during the pandemic, many multinational corporations swiftly transitioned to remote work models, ensuring the continuous operation of their global businesses. At the same time, remote work has significantly reduced operational costs for companies. Expenses such as office space rental, utilities, and maintenance of office equipment have been greatly diminished. According to relevant research, companies that adopt remote work models can save approximately 30% on office space rental costs. This allows companies to allocate more funds to core business expansion, innovation, and R&D.

For employees, the remote work model has brought a high degree of integration between work and life. Employees no longer need to spend a large amount of time commuting and can use the saved time for rest or work. A survey of 1,000 remote workers revealed that over 80% of employees reported that remote work has significantly improved their work-life balance [9]. This balance greatly enhances employee job satisfaction. In terms of productivity, the remote work environment reduces distractions found in the office, allowing employees to focus more on their tasks. At the same time, employees can adjust their working hours according to their own circadian rhythms and complete tasks during the most productive periods. For example, some early risers can efficiently complete important work in the early morning, while night owls can concentrate on tasks in the evening. Remote work breaks geographical barriers, enabling companies to recruit talent globally. This allows companies to build more diverse teams, gathering talents with different cultural backgrounds and ways of thinking. Diverse teams can bring a wealth of creativity and solutions to companies, enhancing their innovation capabilities and market competitiveness. For example, in the technology industry, many startups have attracted top technical talents from around the world through remote work models and have grown rapidly. This global flow and integration of talent have brought broader development space for companies. From a societal perspective, remote work has positive implications for environmental protection. A large number of employees working remotely reduces energy consumption and exhaust emissions during commuting. Statistics show that if 50% of office workers work remotely three days a week, millions of tons of carbon emissions can be reduced annually. Moreover, remote work reduces the demand for office space resources, which is conducive to the rational use of land resources and sustainable urban development. In today's world, where resources are increasingly scarce, this has significant strategic importance.

4.2. The disadvantages of remote work models

In the context of remote work, the timeliness and accuracy of communication are significantly compromised. Compared to traditional face-to-face interactions, although a variety of online communication tools are available, information transmission often experiences delays. This is particularly problematic in work scenarios that require rapid decision-making, as it can greatly hinder

the progress of tasks. Moreover, non-verbal cues, such as facial expressions and body language, which convey emotions and attitudes, are difficult to capture accurately in online communication. This can lead to misunderstandings and reduced communication efficiency and effectiveness.

Regarding team collaboration, remote work weakens the close connections and synergy among team members. Working from different locations makes it challenging for members to synchronize their work progress and share ideas in real time. For example, in software development projects, programmers need to frequently discuss code logic and functionality implementation. In a remote setting, the inability to engage in spontaneous discussions can easily result in code conflicts and redundant development of features, thereby affecting the overall efficiency of the project.

Additionally, managers face difficulties in monitoring employees' work status in real time. In an office environment, managers can directly observe employees' level of engagement in their work. However, in remote work settings, the private nature of employees' workspaces makes direct supervision impossible. This may lead to a lack of self-discipline among some employees, who may engage in non-work-related activities during working hours or procrastinate, essentially "slacking off."

Furthermore, the accuracy of performance evaluation is compromised. Remote work blurs the boundaries of working time and space, rendering traditional performance assessment methods based on working hours and attendance obsolete. Work outcomes are also more susceptible to external factors such as internet connectivity and equipment issues, making it difficult to assess employees' efforts and capabilities solely based on outcomes. As a result, the evaluation outcomes may be biased and fail to effectively motivate employees.

Moreover, prolonged remote work can induce feelings of loneliness and isolation among employees. The absence of daily interactions and social engagement with colleagues in the office can make employees feel disconnected from the team. The accumulation of such negative emotions over time may impact employees' mental health, reduce job satisfaction, and diminish overall well-being.

Finally, remote work limits employees' opportunities for career advancement. Reduced face-to-face interactions with supervisors and senior leaders mean that leaders have less direct knowledge of employees' work performance. During promotion decisions, employees with insufficient visibility may struggle to stand out. This is especially true in companies where interpersonal relationships and internal recommendations play a significant role in career advancement, placing remote workers at a distinct disadvantage [10].

4.3. Innovative optimization measures for remote work models

Innovative optimization of remote work models hinges critically on the construction of a diversified real-time communication platform system. Companies should integrate various tools such as instant messaging, video conferencing, and project management to form an integrated communication and collaboration platform. For instance, Microsoft's Microsoft 365 suite integrates functions like Teams communication and SharePoint document collaboration, enabling employees to conduct instant messaging, online meetings, and collaborative document editing within a single platform. Through such platforms, delays and omissions in information transmission can be minimized, ensuring the timeliness and accuracy of communication.

Moreover, it is essential to establish clear and standardized communication protocols. These protocols should specify communication channels and feedback timelines for different types of information. For example, urgent matters should be communicated through instant messaging tools and confirmed by phone, while progress on important projects should be regularly reported in video conferences. Google, for instance, requires employees to update their task progress daily via designated project management tools during critical project phases and to hold weekly online team

meetings for review. This ensures coordinated work among team members and enhances communication efficiency and collaboration effectiveness.

In terms of supervision, introducing intelligent work monitoring systems represents an innovative management approach. Software such as TimeCamp and ActivTrak can automatically record employees' computer activities, application usage duration, and website browsing history. These systems analyze employees' engagement and efficiency without infringing on their privacy. By generating detailed reports through big data analysis, they provide managers with objective assessments of employees' work status.

Additionally, implementing a management strategy focused on objectives and outcomes is crucial. Companies should break down work tasks into specific, quantifiable goals, allowing employees to independently plan their work schedules and methods while being clear about the required outcomes. Performance evaluations should be conducted regularly, centered on the achievement of these goals, with corresponding rewards or feedback provided. For example, some teams under ByteDance adopt the Objectives and Key Results (OKR) management model, which focuses employees on key objectives and encourages high-efficiency work driven by outcomes. This approach makes the management process more flexible and scientific.

To alleviate the psychological stress of remote work, companies can organize a variety of online mental health care activities. Regular mental health seminars can be held, inviting professional psychologists to teach online and share methods for coping with stress and loneliness. Establishing online psychological counseling services can provide one-on-one consultation channels for employees. Additionally, organizing various online social events, such as virtual birthday parties and themed parties, can enhance emotional connections among employees and foster a sense of team belonging.

In terms of career development, it is important to establish a dedicated promotion pathway and training system for remote work. Promotion criteria should be tailored to the characteristics of remote work, emphasizing indicators such as work outcomes and project contributions. Online vocational training courses should be offered, covering both professional skills and essential remote work skills, such as online communication and time management. For example, Amazon provides a wealth of online learning resources for remote employees, encouraging them to enhance their capabilities and create equal opportunities for career advancement.

5. Conclusion

The remote work model, by virtue of the flexibility it affords employees, can engender innovative forms of work collaboration and content, thereby enhancing corporate innovation capabilities. In the digital age, characterized by advanced technology, digital technology companies should place greater emphasis on the development and utilization of remote work models. Moreover, when recruiting personnel, these companies should focus on identifying employees with proactive personality traits and encourage them to engage in job-crafting behaviors to maximize their innovative potential.

Empirical evidence suggests that companies adopting remote work models exhibit stronger innovation capabilities than those that do not, and firms with a higher proportion of employees possessing proactive personality traits tend to demonstrate greater innovation capacity. Thus, remote work can be considered an optimal choice for innovative enterprises, which should actively recruit employees with proactive personalities.

The remote work model offers significant advantages in enhancing corporate operational flexibility and cost-effectiveness, improving employee job satisfaction and productivity, promoting talent diversification and globalization, and supporting environmental protection and sustainable resource utilization. With continuous technological advancements, remote work is poised for broader application and development in the future, emerging as a vital force in driving socio-economic

progress. Both enterprises and society should actively embrace this transformation, fully unlocking the potential of remote work models to achieve a win-win situation for all stakeholders.

For companies that adopt remote work, it is imperative to optimize their working models through innovative measures in several key areas: strengthening communication and collaboration mechanisms, innovating supervisory and management models, and focusing on employee well-being and career development. By doing so, these companies can further enhance their innovation capabilities and solidify their competitive edge in the evolving business landscape.

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