

The Pathways for Improving the Efficiency of International Negotiations through New Media Technologies

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Abstract. In the face of inevitable globalization, international negotiations grow increasingly frequent and complex. At the same time, traditional models of negotiation are subject to limitations of spatial and temporal distance, information asymmetry, and cross-cultural communication barriers. With emerging media technologies still in the process of development, they overcome those traditional limitations and penetrate all steps of the process of negotiation, providing new opportunities for intensifying negotiation efficiency. This article takes "The pathways for improving the efficiency of international negotiations through new media technologies" as its research direction. This article outlines the key shortcomings of traditional models of negotiation and explores in an orderly manner how new technologies such as blockchain, smart translation, and virtual simulation can be utilized to optimize negotiation performance. The findings indicate that new media technologies are capable of penetrating cultural boundaries, increasing information openness and two-way trust, and significantly improving communication effectiveness. By illuminating the relationship between new media technologies and negotiation outcome consequences, this study addresses an important knowledge gap in the analysis of operative channels on the boundary of dynamic technological and international negotiation borders. It also gives a novel theoretical basis for facilitating the digital transformation of negotiating practice, with a view to ultimately level and standardize global collaborative processes.

Keywords: international negotiations, new media technologies, efficiency

1. Introduction

Following the deepening of globalization, international negotiation has become the indispensable means by which countries and actors resolve issues of concern and achieve win-win cooperation. However, traditional models of negotiation have three very broad weaknesses: one, geographical and temporal constraints, wherein negotiations have to bridge geography and time gaps, and the cost of transportation; two, information imbalance, wherein traditional negotiations rely on painstakingly collected information, irretrievably constrained by biases of perception and difficulty in collecting data; and three, cross-cultural communication barriers, wherein different languages and cultures create miscommunication, greatly reducing the efficacy of negotiations. With the broad development of emerging media technology, this condition has been broken real-time video

communication technology allows inter-time zone communication, intelligent real-time translation technology erases language differences, blockchain technology provides decentralization, and virtual simulation technology provides negotiation rehearsal. Use of these emerging media technologies not only makes international negotiation most efficient but also most optimal in terms of process. Thus, It is useful to use the new media technology in international negotiations. Here, this study look at how these new media technologies render international bargaining effective, in close association connecting globalization with information.

This study focuses on efficient channels through which new media technologies enhance international negotiation efficiency. The topic of this study is how to rationally use new media technologies to realize maximum information gathering, communication, and decision-making in international negotiations in order to enhance negotiation efficiency effectively. The overarching research questions are how more efficient negotiation can be ensured by leveraging alternative media that are not conventional media; through what specific channels these technologies influence negotiation efficiency; and what types of conflicts and countermeasures arise as a consequence of new media technology's existing use.

This research has two important practical implications. One is theoretical relevance: newly emerging media technologies, such as big data and AI, can gather information worldwide objectively, systematically organize previous and current case studies in ways that enable easier analysis of negotiation tactics, and facilitate interdisciplinary integration by integrating communication studies and international negotiation studies and offering a new and innovative perspective. Two possess practical value: as the speedup of globalization persists, cross-national bargaining has also become more widespread. Identifying the channels through which new media technologies enhance international negotiating efficiency can cost-effectively minimize expenses, diminish cultural miscommunication risk, and ease the negotiation process. This article specifically outlines the efficient channels through which new media technologies can be used in international negotiations, demonstrating their applicability.

In the intersection of international bargaining and emerging media technologies, there are scholars who are interested in a change in negotiating settings: from face-to-face talk over distances in space to instant communication through electronic media and cross-time zones asynchronous writing [1]. Some point out the application of technology supports for improving the facilitation of bargaining. Blockchain technology, for instance, as immutable, can also serve as a "third party" where bargaining parties are in a low-trust setting [2]. Another field of research examines the trust-making processes worked out by emergent media technologies, analyzing behavioral attributes and affective inclinations to inform bargaining effectiveness and outcome [3]. However, the weakness is that the above studies are still disjointed as they concern themselves with a single technology or just a single step of the bargaining process, without being integrative in perspective.

This article follows the pattern of "current influencing factors pathway analysis in specifics future prospects." The research was conducted through use employing literature review and case illustration methods, it demonstrates how the use of new media technologies in international negotiations enhances the efficiency of negotiation. Effective means for conducting international negotiations are offered by new media.

2. Existing issues in international negotiation efficiency and the application of technology

International negotiations, as a process of coordination of interests among different states and institutions, impact to what extent the parties are successful in their objectives. However, traditional models of negotiation sometimes limit negotiation success. Linguistic divergence can lead to

misinformation during information transmission, poor information seeking can delay available information, remote negotiations can prolong the trust development process, and cultural differences can lead to miscommunication. In the context of the speed of globalization, the insufficiency of conventional negotiation models has more and more turned out to be difficult to accommodate in the rapidly changing international setting, and therefore a wider area for using newer media technologies has emerged. Real-time communication, smart translation, blockchain, and virtual reality are new media technologies that are providing new solutions to international negotiations by altering communication environments, optimizing information collection, accelerating the establishment of trust, and optimizing communication processes, thus enhancing negotiation effectiveness.

2.1. The disagreement of traditional negotiation models

In general, national negotiations always fall behind enormously in effectiveness in four main categories: communication, information, trust, and culture. The following paper treats these problems from the four categories.

Communication is severely hindered and delayed under changing linguistic and cultural contexts. The most obvious issue is language differences. Despite there being wonderful translators, there are inescapable mistakes. For example, the "security guarantee" might be misread during bargaining, in bargaining, when either party requests "security guarantees against military aggression," through the translation, the other might read it as "security guarantees with arms provision." These kinds of misreadings would create misunderstanding and require a number of clarifications, thus minimizing negotiation effectiveness. Moreover, geographical limitations allow for limitations in cross-time zone synchronization communication and interaction, and thus communication latency and prevent timely response to requirements.

International negotiations usually occur in three cyclical phases: preparation, implementation, and execution. In all the above stages, the very central thing is information acquisition. The depth and scope of information possessed by the two parties are typically disparate, thus forging information asymmetry. This results in misunderstandings and ambiguous negotiation goals, which contribute to inefficiency decreasing [4]. Also, the traditional model's reliance on human information collection and interpretation makes data retrieval inefficient, dynamic updating of information untimely, and stakeholders' requirement coordination clumsy, all of which are constitutive to negotiation efficiency inhibition and delay in presenting timely information to the negotiating team.

International negotiation is a procedure of satisfying the interests of two parties and acquiring a win-win result. Therefore, the emergence of the procedure was always constructed on mutual trust between two parties. However, old models of negotiation are imperfect. There are traditional international negotiations that typically rest on space and time interrupted distance communication, and individuals lack a common communication that helps in the development of trust. There is no process of trust accumulation that results in lengthy trust-building cycles with high expenses. These cause a lot of problems.

One of the most important challenges to international bargaining is the conflict which arises owing to cross-cultural differences. Since each side has its own national culture and lifestyle, management style, and management preference, and team-working will also differ. For instance, India's high-context style and Israel's low-context style (both speaking English) are hard to interpret by both sides for negotiating in English. These various communication modes act as barriers to effective communication and hence negotiation effectiveness [5].

2.2. The empowering potential of new media technologies

With the evolving new media technologies, they increasingly overcome time and space limits, ease the flow of information, promote trust relations, and reduce cross-cultural misunderstandings. Issues with the conventional model of negotiation-communication barriers, information asymmetry, trust defects, and cross-cultural misunderstandings- are excellent practice backgrounds for strengthening new media technologies. New media technologies not only alleviate today's issues but also offer technological support for a new model of negotiation in the future.

With technological advancement in Artificial Intelligence (AI) and social media tools, smart translation technology and communication tools are available in international negotiation settings, almost eradicating communication barriers. AI translation software can translate in real time, scan and interpret existing content, bridge cultural gaps concerning terminology, improve the quality of communication, and lower the cost of interpretation overall. Apart from that, applications of real-time communication platforms such as Zoom and Teams make it convenient for teams on both sides to cross over spatial distances and engage in "virtual meetings". Under the "virtual meeting" setting, teams can perform barrier-free communication, experience collective senses of common ground, and be resistant to information exchange delays. This greatly improved the efficiency of the negotiations.

Integration of big data and AI is also more convenient for gathering information in international negotiations, narrowing the information gaps. Big data technology synthesizes multi-sources of data and mines them comprehensively, dynamically monitors them, and compiles historical cases to establish a general negotiation database. AI processes the collected data comprehensively and synthesizes and analyzes points. It subsequently builds user profiles and negotiates scenario simulations through real-time monitoring and preference analysis. These technologies enable both parties to gain faster, hurdle-free information synchronization, breaking surface information and providing multidimensional data-driven intelligence for international negotiation strategy development.

The problems of expensive cost and long periods of trust development in global negotiations can be addressed by the use of blockchain technology. Blockchain, as it is immutable, transparent, traceable, and decentralized, is the answer. When both parties are in a low-trust situation of daily international negotiation uses, blockchain may be the third impartial party as the recorder of meeting minutes to guarantee that negotiation records are stored forever and can't be modified. This guarantees the genuineness of content in negotiations, prevents either side reneging on promises made, and reduces the cost and time invested in establishing trust between parties and thus increases negotiation efficiency [2].

For cross-cultural misunderstandings and negotiation disputes based on the difference in cultures between countries, it is good idea that new media technologies should address the issue of translating language and cultural adaptation. Virtual simulation and AI technologies are perfectly suited to address this. For starters, AI facilitates instant translation of different languages and analyzing and interpreting metaphors of cultures. Virtual reality technology generates a number of virtual cultural environments and virtual agents according to the negotiation partner's cultural identity. Becoming acquainted with these virtual agents sparks good feelings, which equate to the "familiarity and cooperativeness" relationship. Secondly, virtual negotiators can respond to the words and utterances of the negotiators in real time, and these can be utilized for inferring live negotiation strategic responses and can greatly reduce cultural faux pas and unexpected situations in live negotiations [6].

3. Core paths for enhancing international negotiation efficiency with new media technologies

3.1. Rational use of online communication tools

With the developing new media technologies, unprecedented negotiation efficiency revolution has been realized with several channels of negotiation. Negotiation for the global environment has evolved from face-to-face negotiation to online real-time interaction, breaking across time, distance, and transportation costs. Microsoft Teams, as a core digital communication platform, transcends geographical distances to wonderful effects through the use of "real-time interaction + good collaboration + adaptation to scene," such that simultaneous interpretation and face-to-face interactions become feasible. The real-time translation and high-definition communication plug-in capabilities of Microsoft Teams give both sides the chance to enjoy "face-to-face communication" irrespective of distance by employing cameras, while simultaneously observing and recognizing each other's micro-expressions so as to gauge the level of satisfaction for offers made, as a reference to the trend of the negotiation. Additionally, Microsoft Teams' integration in Microsoft Office tools offers document sharing and visualization of information. Both parties can avail themselves of the shared editing feature to input immediate changes, thus minimizing time costs, message delay, and ultimately maximizing negotiation effectiveness [7].

3.2. Establishing trust

In international negotiations, the introduction of blockchain and other distributed ledger technologies can enable real-time recording of key agreements, creating immutable electronic memorandums. This not only ensures the transparency and reliability of records but also effectively prevents information from being altered or lost, thereby strengthening the trust base between the parties and enhancing both the efficiency and security of negotiations. A multi-dimensional credibility scoring mechanism can be established, integrating corporate credit ratings, government compliance records, and past negotiation performance to form a quantitative evaluation of the overall reliability of an organization. When paired with digital identity verification technologies (such as digital identity interoperability systems), it can ensure that the identities of the participants are authentic and valid. For example, the cross-border digital identity cooperation between Singapore and the European Union has enabled secure identity authentication and information sharing across different jurisdictions. By inputting this data into the credibility scoring model, negotiators can quickly identify potential risks before negotiations, assess the counterpart's performance capacity and trustworthiness, thus optimizing negotiation strategies and reducing uncertainty [8].

3.3. Using AI technology to analyze and remind cultural differences

In multinational negotiations, systems can integrate holiday and taboo avoidance reminder functions. By using preset databases and real-time updates, the system can identify important religious or traditional holidays in the other party's country. For example, during negotiations in the Middle East, the system will issue reminders about sensitive periods such as Ramadan and Eid in advance, preventing meetings from being scheduled during fasting hours in the day and minimizing the risk of cultural conflict and disrespect. Additionally, the system can provide real-time suggestions regarding taboos specific to certain countries (e.g., gift-giving taboos, symbolic color meanings), helping the negotiation team adhere to local cultural norms [9]. Furthermore, using AI-

powered etiquette and language simulation training modules, negotiation scenarios from different cultural backgrounds can be constructed. For example, when negotiating with a Japanese company, the system will simulate formal opening remarks, bowing etiquette sequence, business card exchange methods, and appropriate expressions, providing a feedback report after the conversation to assess the politeness of language, tone softness, and adherence to etiquette. Through this immersive training, negotiators can familiarize themselves with cultural details before formal meetings, enhancing the precision and sensitivity of cross-cultural communication.

4. Challenges and related recommendations

4.1. Challenges

In some developing countries, the adoption of technology by negotiation teams is slow, and limited equipment and network conditions can lead to situations where "hardware lags behind software." To narrow this gap, lightweight, low-barrier online negotiation tools could be promoted. Additionally, establishing multilingual technical support centers in the region to provide training, remote assistance, and emergency response services can ensure that all user groups have equal access to new technologies.

In cross-border negotiations, a large amount of sensitive data may face the risk of privacy breaches and algorithmic bias during transmission and processing. A solution is to implement local model training, where data is processed locally and only model parameters are shared. This approach protects privacy and reduces the risk of data leakage. Simultaneously, it is important to strengthen the detection of algorithmic fairness to minimize decision imbalances caused by data biases.

Conflicts between machine-driven decisions and human judgment are common among negotiation experts. Most experts and users may lack trust in AI systems. To address this, interpretable technologies should be incorporated into the system to show the decision-making basis and scoring logic of AI algorithms. By providing transparent metrics and traceable records, experts and users can better understand and gradually accept technology-assisted judgments, rather than having AI fully replace human experience [10].

Currently, many countries and regions do not recognize the legal validity of electronic signatures, blockchain memorandums, and other digital outcomes, which may weaken their enforceability in international negotiations. There is a need to encourage international organizations, such as the United Nations Commission on International Trade Law (UNCITRAL), to expedite updates to international regulations and promote the recognition and implementation of new technologies within cross-national legal frameworks, ensuring that digital negotiation outcomes are legally protected in all countries and regions.

4.2. Strategies

It is recommended to establish a clear development and enhancement plan for negotiation teams in emerging markets and developing countries, offering multi-level training programs. The curriculum could include online theoretical learning (principles and applications of new media tools), practical training (use of communication platforms, video conferencing, and collaborative file systems), and simulation exercises (cross-cultural negotiation scenarios, emergency response, etc.). Through phased assessments and case reviews, it will ensure that trainees not only master the use of tools but also possess the ability to apply them flexibly in complex international environments.

Develop secure solutions to implement the "available but invisible" principle in cross-border data sharing. Data should be encrypted and model training conducted locally, with only differentially private parameters being shared. At the same time, blockchain technology should be used to record all data access and model updates, creating an auditable and traceable security chain. This mechanism protects privacy and enhances trust in the data processing process.

There should be a call to encourage the UNCITRAL to update international negotiation-related legal frameworks by adding specific regulations for electronic communication and new media participation in negotiations. This should clarify the legal validity of electronic memorandums and signatures under cross-national legal frameworks and define the legal status and boundaries of AI-pushed recommendations in negotiation outcomes and responsibility allocation. Through institutional innovation, digital results can gain equal legal recognition, eliminating compliance concerns related to the application of technology.

5. Conclusion

This paper systematically analyzes the empowering potential and application pathways of new media technologies in international negotiations. Through AI, blockchain, big data, and virtual simulation technologies, it breaks through cultural barriers, enhances information transparency and trust, and optimizes communication efficiency. By integrating credibility scoring, cultural sensitivity reminders, and security mechanisms, the paper proposes strategies to address challenges such as the digital divide and institutional lag. This provides theoretical support for the digital transformation of cross-national negotiations and promotes more efficient and equitable international cooperation.

Authors contribution

All the authors contributed equally and their names were listed in alphabetical order.

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