

# The Risk and Benefits of Applying Artificial Intelligence in Business Discussions

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**Abstract.** Artificial intelligence (AI) is the development and implementation of algorithms to create a dynamic computing environment replicating human intelligence's fundamental processes. To make a computer think and act like a human requires three essential components: a computing system, data and data management, and powerful artificial intelligence algorithms [1]. With the development of AI technology, more and more companies are turning to AI, for example, to assist them in negotiations. Artificial intelligence is a powerful tool for the mathematical analysis of negotiation situations [2]. Negotiation is a process of social interaction and communication about the distribution and redistribution of power. Traditionally, negotiation assistance has been based on normative and prescriptive research, with analysts and experts as users. Electronic negotiation systems provide services to negotiators, addressing their needs rather than guiding their operations to comply with logic and optimization, as is common in software engineering [3]. Therefore, it was found that artificial intelligence is, to some extent, helpful in negotiation. This study will use some examples, like Pactum, to examine the advantages and disadvantages of AI in business negotiations, and in the end, it will suggest some solutions for the negative impacts.

**Keywords:** Artificial intelligence; business discussions; negotiation.

## 1. Introduction

From simple transactions to major multinational business talks, many events in life necessitate the use of negotiation. Negotiation is the process of achieving an agreement or finding a compromise while avoiding conflicts and disputes. Business Negotiation is a kind of negotiation, and it is a process between two or more parties (each with its own aims, needs, and viewpoints) seeking to discover common ground and reach an Agreement to settle a matter of mutual concern, resolve a conflict and exchange value. "Whether you want to be an entrepreneur or work your way up to be a partner in a consulting firm, negotiating representation is a life skill and global currency," says Niro Sivanathan [4]. Meanwhile, according to Forrester, over two-thirds of financial businesses have deployed or are in the process of using AI in areas ranging from customer insight to IT efficiency [5]. Artificial intelligence leverages computers and machines to mimic the problem-solving and decision-making capabilities of the human mind. Artificial intelligence is extensively employed in today's digital world, and more and more businesses are turning to it to help them negotiate. Many researchers have investigated automated negotiation, largely to examine its potential or to study its conceptual models. However, greater scientific investigation is needed, and there are no specific examples of its implementation. The overview paper will explore real-world instances of automated negotiation and go deeper into the implications and pitfalls of automated negotiation. Automated negotiations have several advantages, including better win-win transactions and less time, money, and stress [6]. In an interview with science, Baarslag claims that there is a large amount of information to prepare before a negotiation, that humans frequently fail to reach the best agreement that a computer can, and that computer negotiations can be done very quickly and used by autonomous negotiators to bargain in the market, buy a house, hold a meeting, or resolve a political impasse [7].

Pactum, as the case focused in this article, is a platform that employs artificial intelligence to automate supplier contract negotiations for organizations, and its 'negotiation-as-a-service' platform

is employed by several multinational corporations [8]. The examination of Pactum software in various firms will demonstrate that AI is capable of assisting businesses in commercial negotiations. The goal of this article is to examine how the usage of artificial intelligence in today's society influences business negotiations, as well as to try to discover specific approaches to reap the benefits of artificial intelligence while minimizing its negative effects on business. The major goal is to identify the benefits and drawbacks of AI in business negotiations by collecting and analyzing information.

## **2. The application of artificial intelligence in negotiating**

In recent years, artificial intelligence technology has developed rapidly, and AI has gone from being impossible to appearing around our life now. From voice assistants to service robots to "Alpha Dog" sweeping the Go world, AI is becoming increasingly widespread, and negotiating robots are becoming available [7]. Although the technology for negotiating with AI is not yet perfect, using AI to negotiate provides greater advantages. Negotiating software has quite a long history; a few negotiating support systems started appearing in the early 1980s, like Inspire and Negoisst [9]. Pactum is a platform that uses artificial intelligence to automatically negotiate supplier contracts for companies, using artificial intelligence and a chatbot interface to automate contract negotiations for some of the world's large companies, such as Walmart and Wesco International. By using the company's software, large customers like Walmart are able to generate between 2.8% and 6.8% profitability from each supplier deal negotiated [10]. Johnathan Mell from the University of Central Florida says, "AI as an adviser on your shoulder, whispering in your ear, I think they are lying, you should push harder" [9]. Various academics have developed models and discovered that in negotiations, robots could compute methods that allow negotiators to know exactly where they stand at this moment in terms of strengths and weaknesses and to determine whether or not to continue with the discussions [11]. One can speculate on what might happen if artificial intelligence could negotiate commercial contracts better than humans, but no one has taken action. Pactum, an AI-based platform provider, has put this to the test. With an \$11 million Series A round of investment, the platform, which enables multinational corporations to automate customised business conversations at scale, entered the battle.

## **3. The benefits of artificial intelligence in negotiation**

There are several benefits to using ai in negotiations. Firstly, AI increases the efficiency of negotiations, effectively reduces the error rate, and is not influenced by human emotions. Traditional negotiation, whether done in person, by mail, or by phone, is sometimes difficult to handle, prone to misunderstanding, and time-consuming [11]. Walmart will utilize Pactum's artificial intelligence-based tool to fix the problem, although admitting that negotiating the best terms with hundreds of thousands of suppliers is challenging. In principle, the technology will assist Walmart in negotiating the best rates with more suppliers. Other large corporations will choose Pactum to assist them in negotiating since artificial intelligence can perform things that people cannot readily do and can help make negotiations more efficient. According to a KPMG study, inefficient contracts may cost organizations between 17 and 40% of the value of a specific agreement [12]. Pactum contacts suppliers and negotiates terms using a chatbot interface after first understanding each other's demands [13]. Secondly, AI has no expressions or tone of voice, so the other party cannot tell whether what is said is true from micro-expressions and tone of voice. In negotiations, micro-expressions are most likely to betray a person's mental activities, and the other party can judge the mental activities from these details, which can be reduced if the negotiations are conducted by robots, leading to failure. According to research, even seasoned experts have varied and conflicted attitudes about negotiating. HBS professor Alison Wood Brooks discovered that worried negotiators make more modest first offers, have lower expectations of the transaction, and leave early in discussions [14]. Micro-expression processing is a difficult thing for humans to do. Robots might be a suitable solution to this

problem. The other person cannot discern emotions by their facial expressions. Even if someone has excellent negotiating abilities, he cannot employ them in front of a robot. Thirdly, AI can be programmed to quickly model the psychology of the negotiating partner so that it can perform a precise knockout blow and engage in "psychological warfare" with the other side. Before the negotiation, the robot is familiar with all elements of the other party's information, and it can also watch the other party throughout the negotiation in order to swiftly analyze the other party's psychological activity and assist humans in breaking through the other party's psychology. For example, after determining the value of a large company and the range of concessions the software must make, Pactum's software then uses a chatbot interface to negotiate with the supplier. It asks a series of questions that prompt the other party to reveal its preferences. In the chat, the bot also incorporates psychological strategies that reflect the conversation to the other person. The main advantage is that the chatbot asks questions that force the customer to choose between alternatives, and the system decides on a 'best price' based on a chart weighing the concerns of both parties. Finally, AI can negotiate for long periods of time, making it more likely that the deal will succeed. There is no chance of a deal failing because the parties are physically exhausted from a stalemate. Negotiators must spend a significant amount of time and effort organising information, and the expectations of human bargaining abilities are far higher, whereas artificial intelligence can assist us. Companies can use Pactum software to set negotiation objectives such as the price, delivery, payment dates, and quality assurance terms the company wants, basic information such as the ideal price for the deal, and red lines the company cannot cross. Pactum, which raised 11 million dollars in Series A funding led by Atomico, makes contract negotiations less laborious and enables companies to go beyond a few key terms that typically revolve around price brown-out payments [8]. The system learns during each negotiation to make the next one better. The only downside to the system is that it is not human, so its language processing system may be somewhat incomprehensible and irritate the other person during a chat with the bot.

#### **4. The disadvantages of artificial intelligence in negotiations**

From the above, the use of AI in business negotiation can bring many positive effects, so this essay will continue to analyze the causes of these adverse effects in order to reduce these negative effects. Wu Jun's investigation illustrates that AI has been able to have self-awareness as well as empathy, but this technology has not been fully realized due to social and ethical issues [15]. Hence, for the time being, the inability to reach empathy will remain a reason why AI cannot be widely utilized in business negotiations. The second point is that if humans rely entirely on AI for negotiation, mechanistic programming may lead to negotiation failure. Data are entered before the negotiation, but it is challenging to make ad hoc data changes while the negotiation is in progress. Because of the limitations of technology, it will be difficult to ensure there will be none of the problems happening during the action. The third point is that there are only two purposes for using AI in business negotiations: one is to eliminate manual labour, and the other is to prevent the impulse and whim of negotiators. The complete reliance on AI may lead to being caught by the other side's flaws because, so far, AI is unable to autonomously judge the actual importance of each interest to its side, then inevitably make the results unsatisfactory in the negotiations. So based on this background, it is difficult for people to rely on AI to complete the whole negotiation, and the purpose of saving labor becomes more difficult to achieve. The inability of AI to judge the subtext of people's communication will also become a significant drawback.

In summary, it can easily see that the way to control the adverse effects is to adjust the degree of reliance on AI for business negotiations according to the actual situation. As technology evolves, AI will become more and more capable, and even though they are not yet able to accurately analyze human emotions, it is possible that they will be able to do so in the future. Then, move on to examine the different instances where it is most beneficial to rely on AI to negotiate to different degrees. First, these instances can be divided into roughly these categories.

## 5. Different categories of examples for using AI

The first type is the complete inability to rely on artificial intelligence. This is the case where there are a lot of human emotions and future developments involved because AI cannot accurately judge the emotions between people and cannot assess future needs, so it is difficult to play in this kind of thing. For example, it is like a trade transaction between countries. Country A wants to export cucumbers to country B during the summer collection, and country B does not agree at first because he already does not have a very high demand for cucumbers. However, when country A found that country B had a large number of radishes in the winter, it offered to buy a large number of radishes in the winter in exchange, so country B had a reason to agree to the deal. Through much information will find today's level of technology, artificial intelligence is not too good to reasonably deal with things that have about the future, so this kind of instance, in general, can only rely on a human to complete.

The second type is semi-dependent on artificial intelligence. This kind is easier to understand, as an example, to suggest. Under the influence of today's epidemic situation, many large companies have passed the online interview program. So there are a number of people who will use AI to assist in negotiating salaries with their bosses after passing an interview. In these cases, AI cannot replace human beings because of emotional conflict. However, it can still make some rational suggestions to help people reach a mutually beneficial negotiation result. In detail, when the salary has reached the maximum limit that the boss can give, then the AI may try to get more benefits for people in other areas according to their specific needs; for example, one of their needs is family is the first in people's mind, then, when people cannot get a higher salary, the AI will suggest to people to ask the boss to work at home for a day periodically.

Type 3: Complete dependence on AI. There are not many instances of this because there are few one-shot deals in commercial trade. There is such a case on the eBay platform: "sniping agents". This program allows buyers to set a maximum price and then purchase the desired item at a reasonable price. This is a typical example of a business negotiation that relies entirely on artificial intelligence. Among these three methods of using AI, the full use of AI is the most beneficial because it saves the labor consumed, and the previously discussed drawbacks are noted to be improved when the technology allows it.

## 6. Conclusion

In conclusion, there are many problems with AI at this stage, and it is unlikely that AI will be able to replace humans in negotiations in the next five years. The benefits of AI can be used to assist in our negotiations and thus increase our chances of success. From the above analysis, it can be found that analyze the causes of these negative effects. Humans can provide data input to the robot, allowing the robot to fully understand the other party's situation before negotiating, as well as making predictions, which reduces the human workload. Make good use of the robot's expressionlessness as a feature in negotiations to prevent the other side from attacking us, and quickly analyse the other side's psychology to attack with precision. By applying different levels of AI in different situations, the advantages can be made more profitable at a time when AI is still limited by the state of the technology.

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