Journal of Ecohumanism
2024
Volume: 3, No: 3, pp. 422 – 438
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i3.3344

The Peculiarity of Civil Liability for Errors of Artificial Intelligence in the Banking Sector under Omani Legislation

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Abstract

This study aims to highlight the issues of civil liability resulting from errors in AI banking applications. To date, there is ambiguity about whether it is possible to grant virtual legal personality to AI systems. Methodology: The researcher used the analytical method to understand the mechanisms of AI applied in banking operations, assess the effectiveness of these applications, and analyze the legal texts. Additionally, the inductive method was employed to fit the uses of AI in the banking sector. Results: The main findings of the study can be summarized as follows: The possibility of assigning civil liability to AI entities for errors they commit is applicable only in one case, which is when the AI banking system is the tool causing the damage. Conclusion: The study concludes that there is a need to amend certain legal texts in the Transactions Law. The study suggests that the Omani Civil Transactions Law of 2013 should be updated to align with the nature of AI in banking. This includes developing general legal rules related to the responsibility of employers for the actions of their employees and the custody of objects, ensuring they fit the specific errors of AI in banking. The study also provides some recommendations and proposals regarding the particularities of civil liability in the field of AI banking.

Keywords: *AI In Banking, Civil Liability, Error, Damage, Causal Relationship.*

Introduction

In our present time, there are many means by which banks can improve the quality of their services and increase their revenues by employing AI in banking services. Thanks to this, AI has gained a prominent position in the financial banking sector. For example, customer experience has shifted from direct communication to virtual assistants who respond to customer inquiries, such as checking balances, activating credit cards, or even closing them (interactive chat robots).

Another benefit of AI in the banking sector is its use in fraud detection. AI monitors transaction patterns for each customer, analyzes data, and intervenes in unusual transactions by either rejecting or approving them or alerting a staff member for further verification. The rapid approval process for car, home, personal loans, and credit cards is due to complex algorithms and intelligent programs that assess the client's credit status and communicate swiftly with various departments to create a comprehensive financial profile of the client.

Despite the significant benefits of AI in banking services, there needs to be a balance between this rapidly growing technology and its immense benefits on one side and the potential risks that might negatively impact the bank and the consumer on the other side. For instance the impact on the client regarding personal and financial data, assets, and potential fraud that may affect the robustness and stability of banks. Banks are considered safe havens where individuals store their savings and invest through large deposits, as the primary factor attracting customers is trust in a particular bank.

Therefore, regulatory bodies and the state must find this balance to keep up with the global rush towards AI in financial technology and digitization. They must ensure that this technological advancement is not exploited in ways that benefit fraudsters, facilitate hacking, money laundering, and terrorism financing, which threatens both financial and societal stability.

Research Objectives

The research aims to determine the adequacy and relevance of current laws in Oman to the rapid and significant developments in AI applications. It also seeks to understand the continuity and independence

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of banks in performing their tasks without relying on specialized AI and technology companies. It questions whether these specialized companies might eventually replace banks or if a close partnership between these companies and the banking sector will be necessary.

Research Problem

All financial institutions and banking sectors strive to employ AI in various applications to serve their interests, whether for increased profitability and returns, timesaving, or customer service improvement. However, like any new technology, implementing these modern techniques carries high risks that could significantly impact the reputation of banks or cause financial risks and losses. Additionally, there is the issue of civil liability arising from errors in AI applications, raising the question of who bears the responsibility? and who should compensate for errors if the bank employee has no role in the error and there is no proven causal link between the damage and the harm?.

Research Methodology

The study relies on the analytical method initially to understand the mechanisms of AI used in banking operations and the effectiveness, seriousness, and reliability of these intelligent applications, and the potential positive and negative effects.

It also involves understanding and analyzing the current legal texts and determining their suitability and alignment with the challenges and risks that may arise from using these applications civil liability exposure to error. It also uses the deductive or inductive method to derive legal rules suitable for the uses of AI in the banking sector.

First Section

Civil Liability for Errors in AI Banking Applications

If the elements of civil liability are generally based on harm, damage, and causality according to the Omani Civil Transactions Law of 2013, then it is necessary to fully address this liability, especially knowing that errors might be committed by AI itself or its applications, leading to harm to others. This raises the issue of civil liability. We need to discuss civil liability for AI banking errors in terms of assigning liability according to general rules or the need to develop new liability theories that match this incredible development in a world witnessing new AI applications every day.

First Requirement

Attempt to Assign Liability According to General Rules

If national legislation has not dedicated any law or regulatory legislation to govern actions arising from AI applications, then it is necessary for jurisprudence or the judiciary to seek solutions in the general rules of civil liability stipulated in the Omani Civil Transactions Law of 2013.

Subchapter I

The Applicability of Civil Liability Elements to

AI Banking Entities

The elements of civil liability in Omani legislation are harm, damage, and causality. However, the question is whether these elements apply to AI banking services?.

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Law No (176) of the Omani Civil Transactions Law states: "Every harm to others obliges its perpetrator, even if not distinguishable, to compensate."

Harm means "infringing on a legitimate right or interest," which is achieved by exceeding the required limit or falling short of the required level. Accordingly, the term harm includes all forms of intentional and negligent violations and failure to take precautions, whether by negative or positive act. Consequently, can AI intentionally or negligently commit an infringement on others?

Law No (176) of the Omani Civil Transactions Law states: "Every harm to others obliges its perpetrator, even if not distinguishable, to compensate."

By "harm," we mean "infringement on a legitimate right or interest," which occurs by exceeding the necessary limit to stop or failing to reach the required limit. Accordingly, the term "harm" includes all forms of intentional and negligent assaults, neglect, and lack of caution, whether through a negative or positive act. Consequently, can we imagine that artificial intelligence could commit an assault on others intentionally or negligently?

Law No (176) of the Omani Civil Transactions Law states: "Any harm caused to others obliges the perpetrator, even if non-discriminating, to compensate." This principle is based on what is established in Islamic jurisprudence, namely: "No harm and no harming" and the principle that "Harm must be removed".

The basis of liability for harmful acts in the Omani Civil Transactions Law is not fault; rather, civil liability is established according to Law No. (176) of the law based on the theory of risk-bearing. Therefore, every harm to others obliges its perpetrator to compensate for the damages suffered by the other party, and it is not required for the person causing the harm to be distinguishable. According to the Omani Civil Transactions Law, liability for harmful acts is not linked to the discernment of a minor who damages others' property; they are still held liable even if not distinguishable. The question arises: can AI be considered non-distinguishable?

The answer to this question comes from some legal jurisprudence opinions that consider AI lacks discernment because it is a material entity incapable of making decisions like humans.

This is supported by a legal opinion stating : "It is still premature to talk about applying agency rules or granting robots and AI programs legal personality, as they have not yet reached a sufficient level of development to accurately determine the source of their actions and therefore hold them accountable for their actions independently of their user. Moreover, these programs lack awareness and free will, as well as financial solvency and their own financial liabilities. This means, practically, the human user bears all financial consequences of their actions. However, this does not necessarily mean denying their unique characteristics and granting them functional or technical capacity that allows them to perform tasks and enter contracts independently, with the condition of insuring them and limiting their use initially to technically qualified companies capable of bearing the financial and technical consequences that may arise from AI."

The Omani Civil Transactions Law does not specify the actions that constitute harm, leaving this determination to the judge, who is guided by the general principle of the law against causing harm. There is a general duty on all people not to harm others, and violating this duty constitutes harm .

Regarding AI in banking, it is evident that AI in banking cannot be aware and conscious of behavior, and therefore it is illogical to treat AI in banking as such.

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According to the Federal Civil Transactions Law, harm can be direct or indirect. The second paragraph of Law No (176) of the Omani Civil Transactions Law states: "If the harm is direct, compensation is obligatory without transgression, but if it is indirect, transgression is required".

Direct harm occurs when the act of destruction is focused on the object itself, based solely on the act without any intervening action, such as a person tearing a book owned by another, smashing someone else's car, burning a house, or forging a document, etc.

Thus, direct harm is the destruction of property without any intermediary between the act and the damage, such as killing, burning, or directly destroying another's property.

In this case, a physical connection between the act and the resulting damage is not required if the act itself caused the damage and was its reason without any intermediary.

The criterion for liability for a direct harmful act is objective; once the personal damage occurs, if the damage was directly caused, the perpetrator is responsible for compensating for this damage. The basis of liability in this case is not fault but rather the act itself, provided the act leads to damage, making it an objective liability based on the concept of risk-bearing.

Indirect harm is established by proving an act on something that leads to the destruction of another thing, such as cutting a rope attached to a lamp resulting in the lamp falling and breaking. This constitutes direct damage to the rope and indirect damage to the lamp. In other words, indirect harm does not attribute the result to the act alone but involves another act, meaning that the person, even if not directly causing the damage, facilitated its occurrence.

The person causing the harm is responsible for the damage and must compensate if the harm was intentional or even if transgressive. For example, if someone digs a well on their property with the intent to harm another's livestock, and one of the livestock falls into the well, the person who dug the well is responsible for compensating the owner for the lost livestock.

In assessing transgression, an objective criterion is used, measuring the behavior of the responsible person against that of an ordinary person, representing the average, neither excessively vigilant nor habitually negligent.

Regarding the application of the rules on harmful acts to AI banking errors, it is often observed that harmful acts in the field of AI banking typically manifest as professional errors. A professional error is defined as: "any act issued by a professional that constitutes a breach of the principles of the profession, the rules of the art associated with it, or one of the obligations imposed by law or contracts upon them."

Second: Damage

Liability for a harmful act is not established unless harm has been caused to another because of this act. Damage is a fundamental element of liability and the central pivot around which compensation revolves, and it is the source of liability. Damage is the harm that affects a person in a right or legitimate interest recognized by law. The burden of proving damage lies with the injured party, and the occurrence of damage is considered a material fact that can be proven of proof, including witness testimony and circumstantial evidence.

Damage can be of two types: material damage and moral damage. We will discuss these two types through the general rules provided in the Omani Civil Transactions Law, while linking them with the element of damage that may result from AI applications as follows:

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Material Damage

Material damage is the harm that affects a person in their body or property. Examples include injuries from car accidents, such as fractures, fatalities, or disabilities. Thus, material damage can be physical harm affecting a person's bodily integrity and life, or it can affect a person's financial interests negatively, impact their financial resources, deprive them of a high-value benefit or advantage, or impose costs, burdens, and expenses because of this harm. For material damage to be recognized, two conditions must be met:

First Condition: The damage must impair a right or financial interest of the injured party. Material damage occurs if there is an infringement on the injured party's right or financial interest. Compensation can be sought for damages that represent an infringement on the right to bodily integrity. Examples include:

Harm to a person's life or bodily integrity, or any physical assault that incurs medical expenses or impairs their earning capacity.

Damages representing an infringement on a real right of the injured party, such as the destruction of a house, car, farm, etc.

Infringement on a personal right of the injured party, such as inciting a debtor not to fulfill their obligation to the creditor.

Infringement on a moral right or intellectual right of the injured party, such as the infringement of an author's right or a trade name.

Infringement on a legitimate financial interest of the injured party, such as loss of opportunity or interruption of work.

Second Condition: The damage must be actual. For liability to be established, the damage for which compensation is sought must be actual, meaning it has either occurred or will inevitably occur in the future, even if it has not yet manifested (this refers to damage whose cause has been realized, even if its effects have not yet fully materialized).

Examples of actual damage include bodily injury or financial loss already sustained by the injured party, known as current damage. Future damage, which will inevitably occur in the future, such as future disability resulting from a car accident, entitles the injured party to compensation immediately upon claiming it. If it cannot be assessed immediately, compensation may be delayed until the extent of the damage becomes clear. In such cases, the judge may award partial compensation, preserving the injured party's right to claim full compensation once the extent of the damage is determined.

Third: Causal Relationship

The causal relationship plays a crucial and central role in civil liability as it constitutes the third element of civil liability. Civil liability cannot be established without a causal link between the harmful act and the resulting damage. The causal relationship is responsible for determining the act that caused the damage to the person, especially when the damage could potentially result from the actions of more than one person or multiple actions. Adopting the presumption of causality does not negate the necessity for the causal relationship between the harmful act and the damage to be actual, meaning that the damage suffered by the injured party must be a natural and usual consequence of the harmful act. Any doubt about the causal relationship prevents its establishment. In cases of direct harm, there must be a direct relationship between the responsible person's act and the damage.

One of the essential aspects of civil liability is proving the causal relationship between the harmful act and the damage sustained by the injured party . The injured party, who claims to have suffered damage, must prove the existence of a causal relationship between the act and the resulting damage. This can be established of proof, including relying on judicial presumptions. Once the causal relationship between the

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harmful act and the damage is proven, the presumption of the injured party's entitlement to compensation is established. The issue of the causal relationship is considered challenging to prove because the harmful act committed by, for example, a municipal inspector may take the form of an action or omission, making it difficult to determine the impact of the act. Sometimes, especially when the damage results from multiple causes, this complexity increase .Proving liability for damages or defects caused by AI banking systems falls on the entity responsible for using these AI systems, reducing the burden of proof on the injured party.

Subchapter II

Problems of Assigning Civil Liability Based on General Rules for AI Banking Errors

One of the most significant legal issues concerning AI technologies is the extent to which they can possess legal personality. It is known that the Omani legislator has limited the grant of legal personality to natural persons and legal entities only. Law No (49) of the Omani Civil Transactions Law states:

A legal person enjoys all rights except those that are inherently linked to the natural human being, within the limits prescribed by law.

Thus, it has:

Independent financial liability

Capacity within the limits determined by its founding document or by law

The right to litigate

An independent domicile

A legal person must have someone to represent it in expressing its will

Here, we ask whether it is possible to classify AI technologies under any of the recognized legal persons. In attempting to answer this question, we will highlight the essential similarities between AI banking technologies and both natural and legal persons as follows:

Similarities between AI Technologies and Natural Persons

It is evident that a natural person is every human being whom the law recognizes as capable of acquiring rights and bearing obligations, distinguished by certain human and legal characteristics acknowledged by the legislator from the standpoint of humanity. In contrast, AI technologies, including those in banking, do not possess the human characteristics available to natural persons. AI, being a set of programs and algorithms, might resemble humans in some abilities like thinking and acting, but it differs from them in genetic and other inherent characteristics biological characteristics.

For example, AI banking technologies do not possess human organs, do not have blood flowing through them, and do not breathe. They are entities designed to mimic humans, whether in appearance, thinking, or behavior. Additionally, the Egyptian legislator, as well as all other legislations, has not considered AI or its applications as part of natural persons, nor has there been any legislative initiative addressing this issue. Although AI, whether banking or non-banking, is a modern phenomenon, legislative regulation for it has not yet been established, and we hope it is under consideration and study. One of the significant steps towards bridging the gap between natural persons and AI systems was when Saudi Arabia granted Saudi citizenship to the humanoid robot known as "Sophia" in late 2017. This event marked the first time a robot received the nationality of a state and its passport.

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This raises questions about the legal basis for granting this robot Saudi citizenship and the implications of this decision. However, what matters in this context is that nationality is granted only to natural persons who constitute a part of the state's population, a criterion that only applies to natural persons. Thus, what Saudi Arabia did is seen as a step towards bridging the gap between natural persons and AI systems, but it does not classify these systems as natural persons.

Similarities between AI Technologies and Legal Persons

It is known that legal or juridical persons, in general, are those legal entities consisting of a group of people or assets that the legislator has recognized with legal personality independent of the individual personalities forming them, to the extent that aligns with the purpose of their establishmen .The Omani legislator has recognized the legal personality of juridical persons, just like natural persons, even though juridical persons do not possess the same human characteristics as natural persons. Law No. (49) of the Omani Civil Transactions Law states: "A legal person enjoys all rights except those that are inherently linked to the natural human being, within the limits prescribed by law." Here, the question arises regarding the possibility of comparing AI technologies to juridical persons to grant them legal personality?.

There is no doubt that, as of the preparation of this message, there is no legislative regulation for AI systems in general. However, we can answer this by drawing parallels between juridical persons and AI technologies, including banking AI. Juridical persons are not natural persons and lack human characteristics, yet the legislator has granted them legal personality due to their importance in practical life. The legislator has sufficiently regulated them legally and assigned a legal representative, a natural person, to enable this juridical person to practice its legal life through this representative.

Similarly, AI banking technologies, like non-banking AI, lack the characteristics of natural persons, like juridical persons. However, the legislator has recognized juridical persons and regulated them, assigning them a legal representative, unlike AI technologies, which the legislator has not yet recognized or regulated legislatively. Therefore, AI technologies cannot be compared to juridical persons.

In this context, legal opinions regarding granting legal personality to AI technologies vary between supporters and opponents. We will present our view on this matter and apply it to AI banking applications as follows:

First: Legal Opinion Supporting the Granting of Legal Personality to AI Technologies

This view, which supports AI banking entities enjoying legal personality, is backed by the European Parliament's decision issued on February 17, 2017. This decision included a proposal to the European Commission to adopt civil law rules in the field of robotics and attempt to create a special legal personality for robots, even temporarily, to recognize highly developed intelligent robots in the banking sector as electronic persons responsible. The importance of granting legal personality to AI banking entities, according to this view, lies in providing a legal basis to argue for the legality of obligating these robots to compensate for damages they cause to others.

Therefore, the European Parliament preferred proposing the idea of holding robots personally accountable for the harmful acts arising from them. this instead of holding the AI manufacturer, designer, or user accountable. This is embodied by recognizing robots with a legal personality called robotic personality, which can be activated by establishing a special insurance system for them. Applying this viewpoint, it has been partially adopted in the state of Nevada, USA, where robots have been implicitly granted some authorities of a juridical person. They have been subjected to registration procedures in a special register created for this purpose, allocated financial liability for insurance, and made responsive to compensation claims filed against them for damages they cause to others in their external environment.

The European Union's new approach (the AI Act, also known as the "Law Future") clarifies that only high-risk AI systems should be placed on the Union market, put into service, or used if they comply with certain mandatory requirements. These requirements must ensure that high-risk AI systems available in the Union

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or whose outputs are used in other ways in the Union do not pose unacceptable risks to important public interests of the Union as recognized and protected under Union law, including fundamental rights, democracy, governance, law, or the environment. To ensure compatibility with sectoral legislation and avoid duplication, the requirements for high-risk AI systems must consider sectoral legislation such as the banking sector or banking services, which set requirements for high-risk AI systems included within the scope of this regulation, such as Regulation (EU) 745/2017

On medical devices and Regulation (EU) 746/2017 on in vitro diagnostic devices or Directive 42/2006 / EC on machinery.

Additionally, special AI systems—specified high-risk systems—should be limited to those that have a significant adverse effect on the health, safety, and fundamental rights of individuals in the Union. This regulation reduces any potential restrictions on international trade, if any. Given the rapid pace of technological development accompanying the banking and financial services sector, as well as potential changes in the use of AI systems, the list of high-risk areas and cases should be and usage cases listed in Annex III should be subject to continuous review through regular evaluation practices.

AI systems can have adverse effects on individuals' health and safety, especially when these systems function as safety components for products. This aligns with the Union's harmonization legislation to facilitate the free movement of products in the internal market and ensure that only safe and compliant products reach the market. It is essential to prevent and mitigate safety risks that the product might generate due to its digital components, including AI systems. For instance, increasingly autonomous robots, whether in manufacturing or personal assistance and care contexts, must operate safely and perform their functions in complex environments. Similarly, in the health sector, as in the banking sector where the risks to life and health are particularly high, advanced diagnostic systems and human decision-support systems must be reliable and accurate.

The extent of the negative impact an AI system has on fundamental rights protected by the Charter is particularly significant when classifying an AI system as high-risk. These rights include the right to human dignity, respect for private and family life, protection of personal data such as banking confidentiality, freedom of expression and information, freedom of assembly and association, non-discrimination, the right to education, consumer protection, workers' rights, the rights of persons with disabilities, gender equality, intellectual property rights, the right to an effective remedy, a fair trial, and the right to defense and the presumption of innocence, and the right to good administration.

In addition to these rights, it is important to highlight that child have specific rights as stipulated in Article 24 of the Charter of the European Union and in the United Nations Convention on the Rights of the Child (detailed in General Comment No. 25 of the Convention on the Rights of the Child concerning the digital environment). Both require considering children's vulnerabilities and providing the necessary protection and care for their well-being. The fundamental right to a high level of environmental protection, as enshrined in the Charter and implemented in Union policies, must also be considered when assessing the severity of harm that an AI system might cause. including health and safety of individuals or the environment, and other services, especially those related to banking services.

Regarding AI systems that serve as safety components for products, or are products themselves, and fall within the scope of certain Union harmonization legislation listed in Annex II of this regulation, it is appropriate to classify them as high-risk under this regulation if the relevant product undergoes conformity assessment to ensure compliance with essential safety requirements with a third-party conformity assessment body according to the relevant Union harmonization legislation. These products include machines, toys, lifts, equipment and protective systems intended for use in potentially explosive atmospheres, radio equipment, pressure equipment, recreational craft, cableway installations, appliances burning gaseous fuels, medical devices, and in vitro diagnostic medical devices.

The element of error committed by AI banking entities is characterized by its riskiness, and there are several criteria for classifying this risk. An AI system should not be classified as high-risk under this regulation

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merely because the safety component of the product is an AI system, or the AI system itself causes the error leading to civil liability when AI is considered a machine. AI is considered high-risk under the criteria specified in relevant legislation applicable to standalone AI entities that have the capability to act independently without human intervention. Thus, highly hazardous AI systems refer to AI entities capable of acting on their own, distinct from those that form safety components for AI, or are themselves products listed in any of the fields defined by law, including the use cases listed in Annex III of the proposed law, which should be classified as high-risk in light of their intended purpose. There are many criteria to determine whether AI entities pose a significant risk to the health and safety of individuals or fundamental rights people, such as using an AI system as a safety component in technical infrastructure with an environmental impact. In the field of civil liability for AI banking errors, it is essential to identify the significant risk causing the damage. This involves assessing the impact of this risk in terms of its severity, likelihood of occurrence, duration, and its effect in causing harm. Additionally, it is necessary to consider whether the risk can affect an individual or many people or a specific group of people, causing them harm.

For example, this damage can lead to a high degree of risk even if the likelihood of AI causing harm is low, affecting a natural person or a group of people over a long period without immediate visible effects. The harm caused by AI entities' errors remains and is based on the same methodology and criteria anticipated for any future amendments to the list of highly hazardous AI systems. The damage resulting from AI entities' errors comes from service providers. Service providers whose AI systems fall within one of the fields and use cases listed in Annex III and who believe their systems do not pose a significant risk to health, safety, fundamental rights, or the environment should notify national supervisory authorities with a reasoned statement explaining why the AI system does not pose a significant risk. This could take the form of a one-page summary of relevant information about the AI system's intended purpose and why it does not pose a significant risk to health, safety, fundamental rights, or the environment.

Second: Legal Opinion Opposing the Granting of Legal Personality to AI Technologies:

Some legal viewpoints oppose the idea of granting AI entities legal personality like natural and juridical persons for two reasons: one technical and the other legal.

First Reason: Technical Reason

This concerns the serious deviations that might occur due to granting AI entities legal personality. Such a grant would lead to the non-responsibility of AI technology designers and users, resulting in reduced diligence in manufacturing or using AI technologies or safe robots, because if liability is to be attributed here, it would fall on the entities themselves and not on their manufacturers, producers, owners, or users.

Additionally, the expected social benefit from developing AI banking technologies does not necessitate granting them unfair legal positions, otherwise, we might find ourselves facing non-real legal personalities someday

Second Reason: Legal Reason

Granting legal personality to AI entities, including banking AI, would create fundamental paradoxes that would be difficult to resolve in the future. For example, it would be challenging to separate the error of the robot or the technical system from the error of its operator or owner. How can we, in the case of recognizing the robot's personal liability, assess the behavior of the intelligent technical machine individually when its ability to learn and self-operate is linked to the owner or user. Furthermore, it is difficult to distinguish between the error of the AI banking system and the error of its programmer or manufacturer, except in cases where the error is attributed to the negligence of the system's user or due to the user providing incorrect data or deviating behavior, which resulted in the error causing harm to others.

Some writers believe that general rules of liability for acts of things can be utilized, particularly in areas with gaps not covered by the special system related to liability for defective products, especially in cases where the damage arises from the abnormal operation of a decision-support system. Decision-support systems

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can perform several tasks with relative autonomy, but they always remain under the control of the user or designer, as they can always turn them off or not follow recommendations. Thus, the liability for structural risks related to the design of the decision-support system can fall on the manufacturer according to the rules of liability for defective products. Conversely, the liability for operational risks related to using the thing can fall on the owner, such as a hospital or a doctor using the thing in relation to a patient. This distinction is not abstract, as operational risks can originally be attributed to structural risks.

Third: Modern Judicial Applications of Robots as AI Systems:

In modern judicial applications it appears that the term "electronic proxy" was used by the American judiciary in 2016 to refer to independent computer programs.

This perspective was aligned with the French Court of Cassation, which in 2018 referred to an email reply robot as merely a "computer program" without granting it any proxy status for its operator, serving merely as a tool facilitating data flow in the digital space for public needs.

Consequently, the phase brought by the theory of the human proxy did not introduce any change in the legal status of AI systems, as they remained considered things, albeit intelligent ones.

Therefore, some Arabic jurisprudence initiated the idea that "it is time to treat (electronic systems) like human beings."

We foresee that it is not surprising that in the future, legal personality may be granted to AI systems, making them eligible to own financial assets officially registered in their name, encumbered by liabilities arising from their unlawful actions and credited with the proceeds of their lawful activities. Current generations of unsupervised AI systems have become capable of working, producing, and creating, which may allow them to earn wages deposited into their financial assets.

Thus, some jurisprudence anticipates the coming virtual personality as a theoretical approach, where the electronic person bearing legal obligations and acquiring rights is essentially a set of rights and duties. The content of these rights and obligations are the events related to AI.

This would enable AI systems to bear financial liabilities resulting from their errors in case of solvency or to fall back on their human proxies in case of insolvency.

The truth is that granting legal personality to AI entities, although somewhat a legal fiction and highly hypothetical at present, is inevitable soon due to the increasing reliance on these technologies. In this context, we can respond to the viewpoint opposing granting this personality to AI technologies through the following points:

Regarding the objection based on the serious deviations that might occur if such recognition is granted granting legal personality; we can argue that recognition does not negate the role of the designer or owner of the AI technology. The focus remains on the stringent design standards and inclusion of all security and safety rules, emphasizing their importance in these technologies.

It is not valid to argue against granting legal personality to AI technologies by claiming that the social benefit they bring does not necessitate such recognition. As mentioned, these technologies have and will continue to play a significant and influential role in the social reality we live in, in various aspects. No one can deny this role.

Regarding the difficulty in distinguishing between the error of the AI technology itself and the error of its designer or owner, we can address this in the upcoming discussion. We will identify the cases where the error can be attributed to the machine or technology itself, those attributable to the owner or user, and those attributable to others, to determine the civil liability of each party involved with AI technology.

Journal of Ecohumanism
2024
Volume: 3, No: 3, pp. 422 – 438
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i3.3344

Second Section

Innovating New Theories of Liability to Suit AI Requirements

If civil liability based on the general rules in the Federal Civil Transactions Law is suitable for application to persons, the question arises as to whether civil liability for errors of AI entities used in the banking sector needs further research and the innovation of new liability theories. This question requires an answer through examining the need to innovate new liability theories suitable for the nature of AI entities in the banking sector through the following Requirements:

First Requirement

Justifications for the Need to Innovate New Liability Theories

Electronic agents are among the most common AI programs in the banking world, where many bank websites on the internet employ these programs, with their roles varying depending on their development level and capabilities. While first-generation applications of electronic agents or intermediaries show limited intelligence, autonomy, and movement, their role is confined to merely searching among options, comparing prices, and suggesting offers that may meet their users' needs.

In the banking context, we find that the second and third-generation applications of intelligent electronic agents exhibit a high degree of autonomy and the ability to negotiate on behalf of banks and make deals with clients based on their acquired expertise and self-modified instructions, without any human knowledge or intervention in their operations.

Unlike traditional programs that operate only within the predefined instructions set by banks in a predictable manner, intelligent programs operate autonomously and unpredictably according to the dictates of their surrounding environment in the digital banking space. They make decisions without referring to their users, which may raise concerns about the liability that may arise from the actions of these intelligent banking programs. What should be done if a banking robot causes harm to a client ?

Moreover, the difficulty is compounded by the fact that the failure of an intelligent program or banking robot is not always due to negligence or errors in programming and development, or to issues in use and guidance. Sometimes it is related to the nature of the program, the digital environment, or other factors and parties that are hard to pinpoint precisely, such as viruses, technical malfunctions, and other causes linked to the inherent characteristics of banking AI programs and their ability to operate autonomously and unpredictably.

These advanced capabilities of banking AI programs raise many questions about their role in the contractual process and whether they meet the basic requirements and conditions necessary for forming banking contracts. They also provoke numerous debates about how the law should perceive these programs, which do not merely follow user commands but also take initiatives and make decisions.

Sometimes there are calls for granting legal personality and the accompanying financial assets to banking AI programs, like granting legal personality to individuals and companies. At other times, there are calls to create a special register or an authority to register and license AI banking applications according to proper procedures.

Some have also advocated for applying agency rules to the relationship between human users and AI banking systems, with the possibility of holding advanced generations of these systems partially liable, especially in cases where they exceed the limits of their authority the estimation to the trial judge.

In our view, it is still too early to talk about applying agency rules or granting legal personality to banking robots and AI programs, considering that they have not yet reached a sufficient level of development to accurately determine the source of their actions and thus hold them accountable for their actions

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independently of their users. These programs also lack awareness and free will, as well as financial solvency and their own financial assets. This means that practically, the human user bears all the financial consequences of their actions. However, this does not necessarily mean not recognizing their unique characteristics and granting them what is known as functional or technical capacity, allowing them to perform tasks and make deals independently, with the condition of insuring them and limiting their use initially to technically qualified companies capable of bearing the financial and technical consequences that may arise from AI.

Conversely, some have called for subjecting the liability for damages caused by intelligent machines to the concept of custody, which obliges the natural or legal person with actual control over the thing under custody to guarantee any damage arising from it unless it is due to a foreign cause beyond their control, such as force majeure, the act of a third party, or the fault of the injured party. For machines with a special composition that users cannot fully control, some jurisprudence has decided to attribute the liability for their damages to the producer, considering them primarily responsible for manufacturing defects and the internal composition of the machine. Applying this, a doctor is considered a custodian responsible for any damage caused by medical robots and devices to the patient, except for unavoidable circumstances. Similarly, the producer of those machines and robots is responsible for any damage resulting from manufacturing defects or internal structure issues.

It is also joint liability that allows any interested party to sue both the wrongdoer and the employer together. This makes it impossible to apply such liability to robots due to their lack of legal capacity for litigation and the impossibility of suing them judicially. Therefore, the robot, despite still being considered a tool in the eyes of the law, is not in the legal position of an employee to the human user. This is in contrast to the human worker, who is often an employee of the employer and subject to their control, management, and supervision under an employment contract, which creates a type of subordination that cannot be denied.

Based on the above, there must be a mechanism to assign liability in a way that balances the interests of design, production, and usage parties and considers the level of development that AI technology has reached. It is not logical to deal with this technology in the same way as inanimate objects and tools. It is also unreasonable to place full responsibility on the user or producing companies of this technology, as this would drive these parties away from using or developing AI technology, thereby depriving society of its immense benefits.

Therefore, it is necessary to review the legislation concerned with information technology in a realistic manner that aligns with the nature of AI programs and their role in related sectors, balancing the different interests of the involved parties. However, until such a review is conducted, developing technical and ethical practices and standards at the local level to regulate AI technology and raising awareness of its various aspects and potential risks could help fill the gaps. Since custody is determined by the degree of control and dominance over the thing in use, applying the custody theory, which dates back decades, is not compatible with the reality of advanced generations of AI programs characterized by autonomy and self-learning ability. This may prevent the possibility of predicting their actions or subjecting them to the complete control and direction necessary to implement this theory. This has led some to call for applying the liability of the employer for the actions of their employee to the relationship between the human user and AI banking systems, holding the human user responsible for the actions of the technical system as an employer. legislative gap and ensures the ability of concerned parties to understand the implications of the technology in an acceptable manner or at least gives them the opportunity to correct any error in a timely manner.

The UAE legislation is credited for requiring all health facilities and practitioners in the state to insure against civil liability arising from medical errors and risks resulting from or due to the practice of the profession. This enhances the ability to compensate victims of medical errors and leads to a type of shared responsibility for medical liability, considering that medical errors are not limited to doctors but can involve any healthcare provider, including nurses, pharmacists, and lab technicians. The most critical issue remains to accurately determine and document the source of the error, which can be challenging with the use of self-controlling medical robots due to the multiplicity of production, maintenance, development, and programming entities, as well as the overlap between human and robotic roles. Additionally, the issue of

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informed patient consent based on full awareness of available options and potential risks remains a prominent challenge that should not be overlooked amid the increasing use of AI programs in the medical field.

Second Requirement

Visions for Civil Liability Theories for AI Entities in Banking

After identifying the shortcomings of traditional liability systems in the field of AI, comparative jurisprudence has called for the need to think about comprehensive theories of civil liability rules governing AI in various fields, including the banking sector. Some have called for the establishment of an absolute liability system on the developers of these modern technologies (liability of the AI technology manufacturer in banking), while others have advocated for recognizing legal personality for intelligent entities to hold them directly accountable for the damages they cause in the banking sector. These theories will be the subject of the following studies:

First: The Theory of Absolute Liability for AI Acts

The "absolute liability" theory, classified by jurisprudence among the modern approaches to the liability of AI entities, suggests that the law finds itself, in some cases, compelled to resort to the concept of absolute liability to enable injured parties to receive compensation as soon as the minimal cause is established. This means that the defendant's liability is established merely by causing damage, and it is only a matter of time before responsibility is realized. American jurisprudence justifies this type of liability in cases where the judiciary deems it reasonable to hold a person accountable for the entire risk of their activity and the consequences of compensating for the damages caused, considering them the appropriate party to prevent or compensate for these damages.

American jurisprudence has called for the possibility of applying the principle of absolute liability to intelligent systems, especially in cases where humans completely lose control over the behavior of these systems. This is particularly evident in self-controlling AI entities in the banking sector, where the characteristic of intelligence and autonomy in their behavior surpasses that of robots used in other entities, as they independently make decisions that can harm others. When these damages occur, they often result from unexpected actions and decisions made by intelligent systems. This explains why scholars, led by Professor Clacker David, insist on the necessity of applying new rules for absolute liability, as they strongly impose themselves in this field.

In one of his recent articles, jurist Vadeck C. David emphasized the need to establish a strict liability system completely separate from fault in this field, stating, "We must establish a strict liability system for AI acts, entirely separate from classical concepts related to fault." He pointed out that the concept of fault here does not solely encompass negligence but extends to any technical or technological cause behind the damage. He went further, stating that this type of liability should be implicitly applied, even in the absence of a defect in the smart system's manufacture or design. He considered that "the purpose of establishing this principle is to infer the liability of parties responsible for bearing the cost of compensating for damages for the benefit of the injured parties who acted appropriately." The jurist also explained how to apply the provisions of absolute liability to smart cars, interpreting that these cars should be treated as "an agent with no principal." In this context, he proposed establishing a system of liability for the actions of others according to the same logic, to hold accountable the individuals involved in managing these smart cars, even if their conduct is free from any negligence or fault. More precisely, in practical terms, the jurist proposed holding accountable the individuals involved in the smart car industry as companies, including not only manufacturers but also the designers of the smart programs that operate them, as well as all distributors and intermediaries in marketing this technology. The innovative aspect of this system is that we are not required to understand and assess the behavior of the concerned car; we only need to establish the causal relationship to determine who bears the burden of compensating for the damages.

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This theory has been described by American jurisprudence as radical or revolutionary because it reminds us of the intelligent formula devised by English jurisprudence in the last century to shift the burden of proving negligence onto producers and manufacturers, known as the "res ipsa loquitur" rule, meaning that the fact speaks for itself to prove negligence. Jurist Vadeck confirmed this by stating that the theory of absolute liability is almost equivalent to this principle, if not another formulation of it.

Second: The Theory of Granting Legal Personality to AI Entities

This idea was advocated by jurisprudence calling for holding banking robots accountable for their actions, considering that this would only be possible by granting them legal personality, to directly bear the burden of compensating for the damages they cause. Although this idea still seems fictional and far from reality, it has been partially adopted in the state of Nevada, USA, where robots have been implicitly granted some powers of a juridical person. They have been subjected to registration procedures in a special register created for this purpose, allocated financial assets for insurance, and made to respond to compensation claims filed against them for damages they cause to others in their external environment.

In the same European effort to embody this idea, the European Parliament, in a bold step in its decision issued on February 16, 2018, proposed to the European Commission to adopt civil law rules in the field of robotics and, why not, draw inspiration from the idea of creating a "special legal personality for banking robots," even temporarily, to recognize the most advanced intelligent robots as responsible electronic persons, committed to compensating for the damages they cause to others. The European Parliament preferred the proposal of holding banking robots personally accountable for the damages they cause instead of adhering to the thesis of holding the manufacturer, designer, owner, or user of the robot accountable. This is achieved by recognizing the legal personality of the robots within what some have called a "robotic personality" with the possibility of harnessing a special insurance system for them.

From the review of most legal opinions on both European and American levels, it appears that this thesis is not quite accurate for several reasons. Even the European association supporting the robotics project, as a research project funded by the European Union to develop this industry, did not support in its 2012 book, which proposed obtaining a green paper to address legal issues in the field of banking robotics, the idea of granting these entities any legal status akin to that of natural persons.

French jurists G. Loiseau and M. Bourgeois also recognized the futility and risks of this step, noting the serious deviations that could result from recognizing robots with legal personality. The first concern is that such recognition would lead to the non-responsibility of producers and users of smart devices, reducing their diligence in manufacturing or using non-dangerous or safe robots, as liability in these cases would fall on these intelligent entities. Additionally, the expected social benefit from creating these entities does not necessitate granting them extraordinary legal statuses, otherwise, we might find ourselves in the future facing non-real legal personalities. Professor Coulon emphasized that this recognition aiming to establish the principle of personal liability for robots would create fundamental paradoxes that would be difficult to resolve in the future. Among the most important are:

Difficulty in Separating the Error of the Robot or Intelligent System from the Error of its Operator

How can we, in the case of recognizing the robot's personal liability, assess the behavior of the intelligent machine individually, knowing that its ability to learn and self-operate is linked to the person operating it?

Difficulty in Isolating the Machine's Error from that of its Designer or Manufacturer

Except in cases where the damage occurs due to the user's negligence or teaching it deviant behavior resulting in harm to others.

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Conclusion

At the end of the research, we reached several results and recommendations as follows:

First: Results

The possibility of attributing civil liability to AI banking entities for errors they commit is applicable only in one case: when the banking AI itself is the tool that causes the damage. The idea of applying civil liability rules to AI in banking itself is currently an unachievable idea as long as AI entities lack legal personality, being non-conscious and unable to make decisions without human programming involvement.

The rules of individual civil liability have become incapable of providing legal protection to the injured parties from banking AI. This is especially true as many professionals are involved in manufacturing, programming, and operating these AI entities. Additionally, the complexity of AI entities themselves makes linking the error to the responsible person extremely difficult. This has led to an increase in technical and professional errors causing damage. Therefore, the idea of collective responsibility is the most suitable for this type of liability, aiming to prevent evasion of responsibility under the pretext of the absence of a causal link between the act of banking AI entities and the damage to bank clients, that is, the inability to prove fault. It is more appropriate to work on special legal rules for this liability that do not rely on the idea of a causal relationship.

Attributing civil liability for AI errors according to the general liability rules in the Omani Civil Transactions Law faces many legal problems. This is especially true since the liability rules in the Civil Transactions Law are designed to hold humans accountable, not robots. Civil liability is based on the responsible human or juridical person. Therefore, there is a need to establish special legal rules for civil liability for AI errors in the future.

Second: Recommendations

Amend certain legal provisions in the Civil **Transactions Law to align with the nature of banking AI** and develop the general legal rules concerning employer liability for employee acts and the custody of objects to match the nature of banking AI errors.

Encourage the Omani legislator to amend the Federal Civil Transactions Law to include legal provisions applicable to civil liability for banking AI, keeping pace with significant developments in the field of banking AI.

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