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## **The Future of Concluding Governmental Contracts in Light of the Smart Contracts “An Applied Analytical Study in Light of the Block Chain Technology and Digital Currencies”**

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### **Abstract**

The current study is summarized in showing the future of governmental contracts in light of the novelties of the technical and technological revolution, where the smart applications became of its most important. We dealt with this study through two requirements; the first requirement dealt with the essence of smart governmental contracts through four branches. In the first branch we dealt with the concept of smart governmental contracts, in the second branch we talked about the types of smart governmental contracts , in the third branch we displayed the characteristics of smart governmental contracts and finally in the fourth branch we dealt with the legal nature of smart governmental contracts . The second requirement was allocated to talk about the possibility of concluding governmental contracts through smart contracts as a future vision by dividing it into three branches; the first branch was allocated to highlight the essence of smart mediator of agent, the second branch was allocated to set a perspective of the smart governmental tender leading to smart governmental bidding in the third branch, and finally the conclusion which included the main result the study found and the most important recommendations.

**Keyword:** governmental contracts, smart governmental contracts , smart applications, block chain, default currency, smart governmental tender, smart governmental bidding.

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### **A general introduction**

#### **First: Identifying the study and its important**

The technical and technological development didn't stop at discovering and exploiting the common modern communication means such as e-mail and others where the administration has previously experienced its use and adaption in the area of concluding governmental contracts which led to shaping the electronic governmental contracts and appeared in an organized legal

context. It is known that the technical and technological development didn't stop at a definite point as we hear from time to time that smart applications, techniques or communications means have appeared which work on contracting the concepts of material meet by concluding contracts and ending the traditional concepts related to the cash pay means where all of that led to what is called the smart contracts concluded by the smart applications which of their images apply closed block chains or what is called the "block chain" application which is mainly depended on performance of financial compensation of those contracts by paying through virtual digital currency, which the most important of are "bit coin" and "gold coin" .

It is worth noting that there is a big difference between this new type and electronic governmental contracts , where the first type is completed depending on automated programing when concluding them in light of absence of the human element, while the latter is done by electronic means depending in their work on the complete human element control. The importance of this study lies in showing the extent of the possibility of benefiting from the applications of closed block chains in concluding the governmental contracts and their role in revealing the concept of smart governmental bidding and tender as one of the developed governmental contracts forms.

### **Second: The study problematic**

The study problematic lies in searching answers to the following several questions:

1. What is the efficiency extent of texts of Jordanian Electronic Transactions Law No. 15 of 2015 and The Jordanian Government Procurement System No. 28 of 2019 in understanding the concepts and vocabulary of the smart contracts in general and applying the closed block chain in particular?
2. Are the smart contracts and digital currency considered as a safe secure means which the public administration can trust in when concluding their governmental contracts?
3. What are the challenges may face the public administration when adopting the idea of smart contracts when concluding the governmental contracts ?
4. Is it possible for us to confront smart governmental contracts as the same with electronic governmental ones such as the smart governmental tender and bid and what are their concepts?
5. What is the legal nature of the concluded governmental contracts by smart applications through the smart agent?

### **The study problem**

Since the study subject was new which is considered to be unique, we faced many problems represented in the following:

1. There were no judicial rules issued by judiciary related to this issue.
2. There were no study, thesis or specialized researches dealing with the study subject particularly the governmental contracts .
3. There were no books or resources dealt with the study subject specifically.

#### **Fourth : New in this study**

Although there were studies dealt with smart contracts and their connection to the scientific and legal fact, but we didn't find in our real study any studies that dealt with the study subject, then drop their concepts on the rules of governmental contracts by our perception to set a legal organization of the governmental contracts similar to the electronic governmental ones ; so it can be said that this study is one of the first specialized studies related to this subject.

#### **Fifth : The study methodology**

In this study, we used the applied analytical method, which required us to divide it into two requirements as follows:

**The first requirement: The essence of the smart governmental contracts**

**The second requirement: The possibility of concluding governmental contracts by the smart contracts.**

#### **The first requirement**

##### **The essence of the smart governmental contracts**

#### **Preface and division**

The technological development led to a great influence on the traditional contract theory although this influence was only a difference of means that the contract concluded according to them such as the internet, e-mail, instant message and other modern communication means. Based on the public administration care in keeping pace with the technological development and exploiting it well to run the country facilities and adapting them to serve their conducts and activities, it becomes clear that it continuously seeks to go with what happens related to the technical development, and this what we find in many comparative legislations which adopted the idea of subjection of the technological revolution to serve their goals which contributed in the emergence of the concept of electronic public administration greatly <sup>(1)</sup>. It is worth saying that

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<sup>(1)</sup> Among these legislations what has issued by the French legislator in The Private Law of Public Contractions 1075 of 2018 and the Jordanian legislator of The Unified Jordanian Government Procurement System No. 28 of 2019 published in the official newspaper on

smart contracts are still newly established and didn't reach the legal domain, as they still within the programing protocols and didn't exceed them to appear as legal entities which motivated us to face them in order to prepare them to accept legal drops which the public administration may perform to keep pace with the digital revolution like dropping them on governmental contracts in general. In our opinion, we think that electronic governmental contracts are of the most important features that led to the public administration desire to adopt everything new concerning the modern communication means, where with them there is no obstacle to adopt the idea of smart contracts concluded by smart applications. In this requirement, we will deal with the concept of smart contracts, their types, characteristics and legal nature as follows:

**The first branch: Concept of smart governmental contracts**

**The second branch: Types of smart governmental contracts**

**The third branch: Characteristics of smart governmental contracts**

**The fourth branch: Legal nature of smart governmental contracts**

**The first branch**

**Concept of smart governmental contracts**

The American scientist "Nick Szabo" had an influence role in emergence of smart contracts in 1994 and also in "Bit Gold" in 1988 before emergence of Bit Coin and block chain <sup>(1)</sup>. In the area of defining smart contracts, we find that most of the available definitions came through pure banking financial studies where we didn't find a specific definition for them in the legal area. A smart contract can be defined as "A contract that connects two parties or more, which can be programed electronically then implemented its items automatically as soon as specific actions took place or terms previously defined depending on the block chain technique <sup>(2)</sup>. Another party defined it as "A group of protocols of computerized transactions which implement the terms of a contract <sup>(3)</sup> It was defined from other point of view as "A form of one-sided promise

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1/5/2019 Is. 5572, and the Egyptian legislator of contract regulation Law concluded by public authorities No. 182 of 2018 published in the official newspaper on 3<sup>rd</sup> of October Is. 39 repeated and its executive regulation.

<sup>(1)</sup> Ahmad Khalid Al-Bloushi, Introduction about smart contracts, A paper introduced to the Seminar of Boon 39<sup>th</sup> of Islamic economy held in Jeddah between 13-14/ May, 2019, p 173.

<sup>(2)</sup> Previous reference, p 173 .

<sup>(3)</sup> A smart contract is a self-executing contract with the terms of the agreement between buyer and seller being directly written into lines of code. The code and the agreements contained therein exist across a distributed, decentralized block chain network. The code controls the execution, and transactions are trackable and irreversible. **Jake Franken Field, What Is Smart**

implemented as soon as the computer receives specific instructions, which contains coded contracted conditions in the computer language instead of the legal one found in the traditional contract which according to it automated terms are imposed by a protocol set in the net –block chains- where the automated feature is dominating the procedures of concluding a contract <sup>(1)</sup>.

From the above we conclude that the smart contracts are a new develop image of the electronic contracts depending through their work on smart applications higher than the level of the modern communications means from technical side based on specific protocols and programs where inside them are coed computer languages that work on implementation of contracted terms agreed on them by the two sides automatically when ensuring of implementing specific terms based on the coded language as the block chains start to implement the contract keeping the two sides interests. From our point view, we think that the possibility of defining smart governmental contracts as “The contract concluded by a public moral person by using the different smart applications completely in order to run a public facility or organize it and the administration intention appeared to adopt the rules of public law”. The bottom line is that our attempt to set a concept for smart governmental contracts is closed to the concept of the traditional administrative contract but only in the method of its conclusion. It is worth saying that there is a difference between electronic governmental contract and the smart one, as the latter is based on what is more recent than the modern communication means and exceeds them to reach the top of technical development in the recent era. Where some of those who were interested in view it as a type of madness as it simulates fiction and no more than that. Whereas we find our study subject of an importance similar to those studies which dealt in their beginnings with electronic governmental contracts , and thus it is possible apply the concept of smart governmental contracts on the ground.

### **The second branch: Types of smart governmental contracts**

The types of smart governmental contracts vary according to the forms of smart applications, and this variance due to the characteristics of technical programing which are based on and forming the smart applications. The researcher M. Agbini Moyo had a major role in locating the types of smart contracts types in general which we will drop them in a way that enables the administration to benefit from them as follows:

**First : A smart contract in a natural language with using some coded functions in a digital form.** This type is written by the public administration on normal supported papers using the

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**Contract, journalist report**, published on 8 Oct, 2018, Available Via the link <http://www.investopedia.com>.

<sup>(1)</sup> This definition was mentioned in a published article entitled What Is a Smart Contract? available through the following electronic link: (<http://www.legalvision.com.au>).

most common language like English language, where some of its stages were completed automatically like paying some amounts of money on the expenses of a contract such as the first payment to contractors or executor of government tenders <sup>(1)</sup>.

**Second: A smart contract with a natural language and coded performance technique.** This type is on supporting papers, and its automated application isn't restricted to the stage of the automatic paying stage but it exceeds it to implement some contracted commitments that the public administration asks who engaged of it automatically. In our opinion, we think through this type the smart applications are used in the core of implementing contracted commitments by automated programs whether they are as a whole or partially within closed private block chains which called block chains.

**Third: A contract starts automatically through smart coding and written by the language of programs within a time context defined automatically, and the implementation of contract commitments are carried out by natural languages.** This type depends on its automated beginning in its smartness only, whereas the rest of the contracted process is implemented manually using tables. In our opinion, we think this type of contracts is characterized by automated limitation since it includes all the contracted process stages.

**Fourth: A smart contract which legally approved where it is prepared by the public administration and implemented by the administration and automated contracted people in all of its stages where it can be implemented automatically without any need to human and material interference.** In our opinion, we think that this type is what we seek for through this study. Therefore, from the above it is possible to imagine a new fifth type related the governmental contracts as the privacy of the public administration is more clearly.

Fifth: A smart contract which is legally approve concluded by the administration and implemented automatically to run a public facility for presenting public services to the public by using smart applications based on its implementation of the contract inclusions on the closed block chain depending on the digital currency “bit coin “ as a method to pay the financial commitments emerged from it. From the above, we can say that the elements of the smart administrative contract are the following:

1. The people of the public law “public administration” as on side of the contract.
2. The contract place should manage a public facility.
- 3, Smart applications are “ closed block chain”.

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<sup>(1)</sup> Qutob Mohammad Sano, Smart contracts in light of foundations and intentions “analytical vision”, a scientific paper introduced to the Conference of the international Islamic Jurisprudence academy, the 24th period held in Dubai in 2019, p 26.

4. Virtual currencies “bit coins” which represent tools to pay the financial commitment.

The bottom line is that we think that the possibility of talking emergence of smart governmental contracts became permissible in the recent era, where the technological revolution finds in it a fertile environment in light of what it witnesses of rapidness, emergence of communication means and smart applications from time to time, where public administration works hard and make use of everything available to benefit from what is new on the technical revolution and what the latter leads to techniques and smart communication. Here a problem emerges which lies in the extent of safety in using digital currencies in the stage of implementing the contract and pay the financial payment for its both sides. In our opinion, we see the resource of these problems as follows:

1. Lack of spread of the culture of dealing with digital currencies among individuals, companies and public administrations, and this due to in our opinion to the new currencies and its emerging as methods of financial payment.
2. Non-stability of digital exchange rates in the international financial markets will make an obstacle to progress in adopting the smart governmental contracts since the financial stability of currencies by which the public administration perform their financial commitments to those who contracted with have great importance, as it may lead to strain the administration an inflicting heavy losses on it because of price fluctuation of those currencies and absence of their international stability.
2. Lowness of public confidence in general and public administrations in particular with such currencies until this time in spite of their spread in many countries of the world.
3. There is no clear legal regulation which determines the features of development of smart trustfulness to refer to when performing of the financial compensation for the two parties of the contract based on the limitations of fixed contracted commitments under the smart administrative contracts.

### **The third branch**

#### **Characteristics and features of the smart governmental contracts**

Through our future vision concerning the idea of applying the smart governmental contracts , we should mention the characteristics and features of those contracts which may form the core of their future legal approval, through which we may reach the justifications of adopting this idea by the administration and adapting it in the area of concluding their contracts to have a legal independent entity which are similar to the ones concluded electronically by the administration. In order to achieve that, we will deal those characteristics and features as follows:

### **First : Characteristics of the smart contracts**

1. The smart applications ability to form a contract and what it includes of contracted processes through direct or indirect computerized languages and programs in the form of processed instructions and orders directed by the computer to cause a legal effect and a definite result kept on digital supporters called electronic records <sup>(1)</sup> .
2. Smart applications are computer programs designed and prepared by electronic means <sup>(2)</sup> .
3. Smart applications are computer programs work independently by the person using them, through transferring and processing information automatically using information processing systems prepared before <sup>(3)</sup> .
4. Smart applications are described as autonomous and automatic application, where they establish, amend and send informational electronically, automatically and autonomously in the definite time when the considerable and computerized terms are available on the computer system without the human or the two parties of the contract intervention, where these applications send all electronic letters automatically <sup>(4)</sup> .
5. Smart contracts are electronic ones in their origin and nature, but what distinguished them from the latter is the nature of means using in concluding smart contracts which are describes by the progressed technical development including automatically and autonomously in work because they are programed to implement computerized processes to achieve a specific result.

### **Second: Features of the smart governmental contracts**

#### **1. Accuracy and speed in concluding and implementing contracts**

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<sup>(1)</sup>Article 2 of the Jordanian Electronic Transactions Law No. 15 of 2015, published in the Official newspaper Is. 5341 on Page No. 5292, on 05-17-2015, defined the electronic record as: "An information message that contains a record, a contract, or any document of another type created, stored, used, copied, sent, communicated or received using the electronic medium.

<sup>(2)</sup>Article 2 of the Jordanian Electronic Transactions Law, previously referred to, defines electronic means as: "The technique of using electrical, magnetic, electrical, or electromagnetic means, or any similar means.

<sup>(3)</sup> Asa'ad Obaid Aziz Al-Jamili, Sadam Faisal Kukez Al-Mahmadi, Froming a contract by electronic means " A comparative study", published study, Journal of Faculty of Law, Bahrain University, Vol. 12, Is. 2, 2015, 39.

<sup>(4)</sup>Electronic information messages mean: "Information that is generated, sent, received, or stored by any electronic means, including e-mail, short messages, or any electronic exchange of information." See the Jordanian Electronic Transactions Law, mentioned previously.



The administration usually intends to be accurate when concluding contracts since they include accurate details which require care and caution since they are related to critical and sensitive issues which aim to run the public facility to achieve public interest in, addition to the administration need to meet the needs and satisfy desires rapidly that can't be delay through its concluded contracts. In our opinion, the administration conclusion of their contracts through those applications gives it the two elements of accuracy and speed, as smart programs work to bring offers and send invitations with whom the administration want to conclude contracts automatically, by which exploiting the privacy of smart applications and their ability to seek the ruling principles to conclude its contracts particularly the principle of transparency <sup>(1)</sup>, besides not to wait sending and receiving the documents and copies of contracts, as they are sent automatically when the terms are achieved and based on which the block chains have been programed on.

## **2. Getting rid of governmental routine**

The smart governmental contracts work to get rid of common governmental routine when starting to prepare the documents and notebooks of the contracts, and help public when filling tender application forms, as block chains allow to view the contracts forms and filling them electronically and revise them easily without a need to go to governmental departments where time and efforts are wasted, and get rid of the bureaucratic procedures which positively reflected in increase of contracted public acceptance with the administration <sup>(2)</sup>.

## **3. Reducing the spread of crimes of corruption related to public employment**

Those applications work to remove the material meeting between the two sides of the contract particularly that one between public administration men and the contracted public with it, as the smart applications form, conclude and implement contracts automatically. Based on the above, we think that in our opinion the concluded contracts by the smart applications will contribute in reducing the crimes of bribe, exploiting power and favoritism by public administration people to material or moral benefits.

## **4. Strengthening contracted confidence in electronic records**

The smart applications are characterized by their ability to keep, recall and they aren't able to be amended after kept on electronic supporters, and this is what can be provided by closed block chain; it is not possible to conclude any amendment, deletion or removing any of the contract

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<sup>(1)</sup> Ahmad Khalid Bloushi, previous reference, p 173.

<sup>(2)</sup> Eyhab Khalifa, Block chain: The coming technology revolution in the world of money and business, published article in the Journal Of future for Advanced studies and researches, Is. 3, 2018, p 5.

inclusions agreed on and concluded <sup>(1)</sup> . In our opinion, we think that this characteristic has received a wide promotion and acceptance among the public administration people from one side, and the contracted public with it from the other side because of what they give of tranquility and reliance on forms and formula concluded by the smart applications.

## **5. Getting rid of compliance contracts or model contracts**

Some of the legal jurisprudence thinks that one of the most important characteristics of smart contracts is enabling public to get rid of the idea of compliance contracts or model ones <sup>(2)</sup> , as resorting to such type of contracts will contribute greatly in allowing space and release the customer's freedom to choose the product he wishes to buy or determine the bodies he wants contract with away from the power of monopoly thanks to the virtual area which will allow several markets or products which the customer desires. We think that it could be benefited from that in the area of governmental contracts through allowing space to the public administration in bringing more number of offers presenters and bidding process to contract with at the world level, and by doing this, we can get rid of monopoly of some bodies to their contraction with the administration and reduce protest about contractors' lack of knowledge about all of items and terms of a contract.

After we have reviewed the characteristics and features of the smart governmental contracts , we could say that those contracts will create a new revolution in the area of governmental contracts which will contribute in setting the road map to such types of contracts; after the idea of electronic governmental contracts was a strange idea to most of jurisprudence, it became acceptable to them and received a wide promotion among them. Thus, we emphasize on giving the idea of smart governmental contracts the essential juristic attention to set it in an independent legal system and context that suit the vocabulary and concepts of governmental contracts .

### **Fourth branch**

#### **The legal nature of smart governmental contracts and their legislation**

The smart governmental contracts are the most recent vocabulary within the context of public administration actions which necessarily will face several challenges and questions to define their legal nature and show the extent of their legislation, which will deal with in this branch trying to reach the legal nature of those contracts as care to ensure that we legitimize the administration restriction to such type of contracts.

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<sup>(1)</sup> BlockChain Technology, Sutardja Center for Entrepreneurship & Technology Technical Report (Berkeley University of California), October 16, 2015, p. 1, available at :(<http://www.bit.ly/2a0UB7R> ).

<sup>(2)</sup> Asa'ad Oaid Aziz Al-Jamili, Sadam Faisal Kokez Al-Mahmadi, previous reference, p 42.

### **First: The legal nature of smart governmental contracts**

Many juristic disagreements have emerged in order to determine the legal nature of the smart contracts in general, and this is of course applied to the smart governmental contracts . From the artificial intelligence science perception <sup>(1)</sup>, these contracts are only programming protocols which don't reach independent legal entities which can be relied on in the legal science area <sup>(2)</sup>, and at the same time we don't find jurisprudence has defined this type in order to face it but only in some legislations as in Arizona State which considers smart contracts like normal ones which accept judgment before its courts <sup>(3)</sup> , and this motivated us to investigate the problem of determining the legal nature of these contracts as follows:

#### **1. First trend <sup>(4)</sup> :**

The owners of this trend think that the smart contracts are digital ones depend on the technique of block chain which allow to control the commitments of each part of the contract, i.e. they think through these contracts the digital formula given to the two parties of the contract. With this, we think that the owners of this trend depended in their determining of the nature of these contracts on what they are characterized with related to the digital technique refer originally to the nature of the digital supporters on which the two parties of the contract depend on and keep what they have of merits and rights. In our estimation to this opinion , we didn't find that the

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<sup>(1)</sup>Artificial intelligence means: "Simulating human intelligence and understanding its nature by creating computer programs capable of simulating intelligent human action. Artificial intelligence is presently everywhere around us, beginning with self-driving cars, drones, and translation software, so artificial intelligence is Which is related to mental abilities such as the ability to adapt to life circumstances, benefit from previous experiences and experiences, analysis, thinking and planning, problem-solving, sound conclusion and feeling for others. " For more about artificial intelligence in the United Arab Emirates, refer to the Ministry of Economy publications, First Quarter Initiatives, 2018, available on electronic site: (<http://www.economy.gov.ae>)

<sup>(2)</sup> Neriman Masoud Bu Raghda, Contracts of block chain "Smart contracts" from the contracts law perception , published study, Algerian Journal for law sciences, Vol. 56, Is. 2, 2019, p 106.

<sup>(3)</sup> Qotub Mustafa Sano, previous reference, p 36.

<sup>(4)</sup> Définition, ou plutôt début d'une définition de Régis de Boisé, le fondateur de l'entreprise de blockchain LeBonBail, La révolution des « smart contracts » : quelle intelligence pour quels contrats ?, Les Echos, publié en ligne le 16 décembre 2016, disponible sur : (<https://www.village-justice.com>).

-Referred to this vision in Neriman Masoud Bu Raghda, previous reference, margin 4, p 107.

owners of this opinion succeeded in determining the nature of these contracts because they don't have enough information about the structure of the contracts technically which distinguishes them from all other contracts concluded electronically and make from them independent legal idea, and then create an independent legal system that rules them.

## **2. Second trend <sup>(1)</sup> :**

The owners of this trend think that the smart contracts look like the legal nature of the common contracts within the traditional theory even their shape is distinguished and strange. We think that the owners of this trend tried to determine the nature of the smart contracts based on their novelty and weirdness only and didn't mention these details which serve the legal studies and contribute in creating an independent legal system for these contracts with an indication to a clear absence of these contracts from the vocabulary of the legal science which didn't face this problem until this moment.

## **3. Third trend <sup>(2)</sup> :**

The owners of this trend think that the smart contracts are only a technical mean depending on computer programs which are used in implementing a previous contracted agreement through coding it and implemented automatically faster and more secure, and this should be done through what is called the electronic agent or mediator <sup>(3)</sup>. We think that the owners of this trend considered these contracts from the technical aspect and didn't mention the nature of these contracts legally although they mentioned the role of the agent or electronic mediator in the stage of conclusion which the Jordanian legislator defined its concept in the Electronic Transactions Law mentioned before.

## **4. Fourth trend <sup>(4)</sup> :**

The owners of this trend think that the smart contracts are only a copy of the contract but issued in a computerized form, where the items of the contract are computerized on a form of algorithms designed for implementation of the contract but not the contract itself. In our consideration to this vision, we think that it depended also on the nature of those terms as they

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<sup>(1)</sup> Philip Elmer-Dewitt, « Cyber extra », New York Magazine, 23 décembre 1996, p23 .

<sup>(2)</sup> Fayrouz Mahfi , Farida Mahyobi, The legal nature of the electronic agent in concluding contracts of electronic trade, MA Thesis, Faculty of law an political sciences, Abdel Rahman bin Mira University, Bajaya, Algeria, 2016 – 2017, p 24-25.

<sup>(3)</sup>Article 2 of the Jordanian Electronic Transactions Law, mentioned to previously, defines the electronic mediator as: “The electronic program that is used to implement a procedure or respond to a procedure automatically to create, send or receive an information message”.

<sup>(4)</sup>Neriman Masoud Bu Raghda, previous reference, p 107.

considered as computer programs on a form of algorithms which form a model prepared previously to empty the items of the traditional contract through electronic supporters.

### **5. The researcher's point of view**

In our attempt to determine the nature of the smart contracts , we think those contracts are not new types but updated image of the traditional contracts based on the modern electronic means represented in smart applications like block chain and other smart applications which depend in their work on computer programs stored in the form of algorithms based on the directed programmed languages, where these applications conclude the contraction and negotiation process through what is called the mediator or electronic agent, and thus they are within the context of those contracts concluded electronically, but we think they surpassed them in the means of forming the contract, and its conclusion and implementing it. In short, we do not think that we face a new type of contract, but modern ones that are marked by smartness and may be by somehow strangeness since they depend on unique techniques and programs based on artificial intelligence which is the output of technological and technical development, where the public administration should adopt in all of its activities and actions.

### **Second: Legitimacy of the smart governmental contracts**

The imposition of legitimacy is one of the most important basis that the public administration seeks to investigate in all its activities and actions which marked by modernity, where the administration should respect the principle of legitimacy in its relations with the individuals under the threat of deciding that it is incorrect <sup>(1)</sup> , and till this moment we didn't find anything that prevents Jordan from follow up the technological and technical development and adapting to its service, as it always thinks that the criteria of its development and flexibility lies in the extent of understanding the legal texts which organize its action towards this development. It is worth saying that the smart governmental contracts are the output of that development which the administration won't delay its implementation when concluding its contracts as keeping pace with that international development and orientation which has been taken seriously, so we should address a problematic that is "What is the extent of legitimacy of smart governmental contract "? In our answer to this question, we think the legitimacy of this development exists by the evidence of the position of Jordanian legislator which permits the administration in having the possibility to conclude its contracts based on what have been mentioned in texts of the new government procurement system which was preceded by the legislator issuing of the Electronic Transaction Law. Therefore, the public administration is able to depend on the electronic means

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<sup>(1)</sup>Taima Al-Jerf, The Principle of legitimacy and controls of the public administration's submission of law, 3<sup>rd</sup> Edition, Dar Al-Nahda Al-Arabiya, Cairo, 1976, p 2.

and smart applications in order to form and implement governmental contracts <sup>(1)</sup>, where their electronic and traditional businesses became equal <sup>(2)</sup>, so the electronic businesses of the administration are subjected to this principle respecting the rules and foundations of administrative law in a way that they don't go away from them <sup>(3)</sup>. In our opinion, we think that the legitimacy principle is able to absorb the electronic transform in the administration businesses, as it is impossible to imagine the administration ability to keep pace with electronic development apart from this principle, and we can say that the legitimacy principle is also able of adapting validity and legality of all the actions and activities of the administration in its electronic shape, as an inevitable result of the characteristics of the administrative law, which is flexible and can be amended and changed. We think also that the administration changing of its style in running its public facilities that meet the needs and desires of individuals is a praised and desirable approach, where a part of jurisprudence think that the principles of traditional administrative law aren't expected to be an obstacle before administrative development <sup>(4)</sup>.

Thus, the administration resorting to the idea of smart applications and adapting it in the area of concluding governmental contracts achieve a group of advantages, as these applications will enable the public administration to get rid of routine, bureaucracy and common complexity in the area of public administrative business, and these applications will also give confidence and security to all administration's businesses and those techniques concerning the closed block chain in particular, which are marked by their inability to be amended, deleted or changed, and in our opinion, we think that all of what have been mentioned go with keeping the public interest which is considered as the holy spirit of the administrative law. What emphasizes the above is that the texts of The Jordanian Electronic Transactions Law and the Governmental Procurement System have set a base to approve an independent legal system for these contracts since the Jordanian legislator in light of the two previous legislations didn't define the electronic means

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<sup>(1)</sup>See the same meaning in: Mohammed Suleiman Shbair, The legal framework for e-mail "An analytical study", unpublished research, p 20.

<sup>(2)</sup>Muhammad Suleiman Shbair, The legal framework for e-mail "An analytical study", published research, Journal of Al-Azhar University, dedicated issue of the faculty of law 5<sup>th</sup> Conference, 2017, p 461.

<sup>(3)</sup> A'ad Ali Al-Hmoud Al-Qaisi, Unified electronic model of the administrative decisions, a research presented to the Seventeenth Scientific Annual Conference entitled "Electronic Transactions", held between 19-20 /5/ 2009, p 80, Researches, Vol. 1, faculty of law, University of Abu Dhabi.

<sup>(4)</sup>Muhammad Suleiman Shbair, The legal system for administrative electronic mail "an analytical study", previous reference, pp. 461-462. Hamdi Al-Qubeilat, Electronic Public Administration Law, 1<sup>st</sup> Edition, Wael Publishing House, Amman, 2014, p. 16, Othman Za'al Al-Ma'aytah, Electronic government and its influence on Public Facilities, MA Thesis, Faculty of Law, Cairo University, 2009, p 35.

exclusively believing of variety of those means which can't be counted where the smart applications are considered a part of them, but what lacks this image of contracts the clear legal text which allows the administration to conclude its contracts through it, where it doesn't make this a place for doubt or interpretation about the legality of those contracts.

### **The second requirement**

#### **The possibility of concluding governmental contracts by smart contracts**

##### **Preface and division**

In our imagination, the administration will conclude its contracts by smart application, and we believe in that through what the Jordanian legislator has decided in Electronic Transactions Law and Government Procurement System, and what follows of systems related to electronic purchase process <sup>(1)</sup>, so we find that the legislator defined the transactions as procedures that order commitments between its parties whether they are civilian, commercial or with a governmental department <sup>(2)</sup>, and it is possible to be concluded using electronic means <sup>(3)</sup>.

It is notable that the legislator didn't define those means exclusively and left the concept of that for any similar mean. We think that leaving that concept refers to the legislator's satisfaction in the development and diversity of these means, or the appearance of images or other technical means such as smart applications and others since what the technological revolution is marked by innovation and the absorbing of everything new in that context, which allows to face the possibility of concluding governmental contracts using smart applications similar to that concluded by electronic means, We also think that the idea of smart contracts is based on the idea of a smart mediator or agent in concluding smart governmental tender or bid, and this is what we will deal with in this requirement as follows:

**First branch: Existence of mediator or smart agent**

**Second branch: Smart governmental tender**

**Third: Smart Public Bit**

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(1 ) Electronic Purchase Instructions for 2019, published in the Official newspaper No. 5614 on page No. 39, on 1-2-2020. Instructions for the Organization and Use of Electronic Purchase Instructions No. 1 of 2018, published in the Official newspaper No. 5496 on page No. 175 on 01-16-2018.

<sup>(2)</sup>Article 2 of the Electronic Transactions Law, previously referred to, defines transactions as: "Any procedure that takes place between one or more parties to create an obligation on one party or a mutual obligation between two or more parties, whether this procedure relates to a commercial or civil business or is with a government department ". The same article also defined electronic means as: "The technique of using electrical, magnetic, optical, electromagnetic or any similar means.

<sup>(3)</sup> Article 2 of the same law defined electronic means as "The technique of using electrical, magnetic , light or Electromagnetic means or any similar means".

### First branch

#### The entity of smart mediator or agent

##### First: The concept of smart mediator or agent <sup>(1)</sup>

An electronic mediator or agent is defined technically as “Everything works and aware of his environment by private sensors and has an ability to affect this environment by effects” <sup>(2)</sup> . Another party defined it as “A computerized system lives in an environment with a degree of dynamic and complexity, senses and affects this environment independently to achieve goals and tasks assigned to him” <sup>(3)</sup> . Whereas from the legal aspect Article 2 of Jordanian Electronic Transactions Law defined the electronic mediator as “The electronic program used to implement a procedure or respond to a procedure to conduct automatically to establish, send or receive information messages” <sup>(4)</sup> . Article 2 of the UAE Law for Electronic Transactions and trade as “An electronic system or program of a computer which may behave or respond to an action completely or partially independently without supervision of any normal person at the time when the disposition or response is made to it” <sup>(5)</sup> . From the above, we think that a smart mediator or agent plays a serious and active role in the negotiations processes and conclude and implement contracts through several smart mediators such as search engines, personal assistants and agents of sellers and buyers <sup>(6)</sup> . Therefore, we can imagine an important future for him like contributing in tenders and bids which the public administration concludes with the public in order to meet the needs and desires of its people, where tenders and bids are concluded through the smart mediator without intervention by the human public administration in light of the modern legal jurisprudence orientation to admit the legal capacity of that mediator <sup>(7)</sup> .

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<sup>(1)</sup> Jordanian legislator didn't stipulate in the texts of applicable Electronic Transactions Law on the term of smart agent, but it pointed to in Article 2 to the term of an electronic mediator only.

<sup>(2)</sup> Nabila Kurdi, Contraction through smart agent in the electronic trade and problems emerged from it, MA Thesis, faculty of law, Yarmouk University, Amman, 2011, p 8.

<sup>(3)</sup> Ahmad Qasim Faraj, The use of the smart agent in electronic commerce, “A Comparative legal Study in the framework of its essence and the enforcement of his actions”, published research, Al-Mufiker Journal, Faculty of Law and Political Science, University of Mohamed Khaider, Biskra - Algeria, Is. 16, December 2017, p. 17

<sup>(4)</sup> See Article 2 of Electronic Transactions Law, mentioned to previously.

<sup>(5)</sup> UAE Law for Electronic Transactions and Commerce No. 1 of 2006..

<sup>(6)</sup> Ahmed Kamal Obaid, The legal capacity of the smart agent and its role in determining the liability resulting from its electronic transactions, published research, University of Sharjah Journal of Legal Sciences, Al-Majd 16, Is. 2, 2019, p. 360.

<sup>(7)</sup> For more details on legal capacity and modern jurisprudential theories that have adopted the necessity of recognizing the legal capacity of the smart agent, see: Ahmed Kamal Obaid, previous reference, p. 362 and beyond.



## **Second: Characteristics of a smart mediator or agent**

Voices recently rose about adopting the idea of an electronic agent or mediator, and there is no doubt that this idea has many features that have made it a desirable modern trend in conclusion of many electronic transactions and contracts, among these characteristics are:

### **1. Independency**

The most important characteristics of a mediator or electronic agent is its complete independency from the two parties of the contract, as it depends completely on all data, terms and items set by its users, and it also depends on its prior experiences performed to negotiate and conclude contracts, as it is able to amend its terms and data based on that program. Thus, we think the task of an electronic agent or mediator depends completely on artificial intelligence, in other words the human role in such transactions or contracts will vanish completely and it will be replaced by algorithms and programs set by the users of an electronic mediator or agent, with an indication that every smart mediator or agent differs completely from the other agent or mediator <sup>(1)</sup> .

### **2. Ability to communicate**

The smart agent or mediator can interact with public whether they are normal or moral people or even smart agents, where that agent or mediator communicate , negotiate and contract with them although of all changes that emerge during those processes such as decrease of prices or emergence of new competing products, goods or stores, and able to adapt with the surrounding electronic reality. From the above, we think that the smart mediator or agent is marked by a high electronic fitness through its super ability to move among markets and electronic data where it works and what is called by some studies as the ability to take initiative <sup>(2)</sup> , and thus its ability to select what suits its users of commodities and contracts or luring offers or even involving in smart tenders and bids where public administration is a part of them.

### **3. High efficiency and accuracy**

The smart agent or mediator is characterized with high efficiency and accuracy which refers to the nature of programming and algorithms that form its pillar, and it is able to overcome any challenge facing the process of negotiation or contraction, Implementation of a contract or any obstacles which may face smart tenders of bids concluded by the public administration and it performs those previous processes without any slight possibility of errors that may face. In our opinion, the possibility of smart agent or mediator replacement of the public administration in concluding its contracts became permissible in light of the contraction stages and processes

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<sup>(1)</sup> Nisreen Salman Mansour, The legal will of the electronic agent in the Saudi system, published article, Journal of Sharjah University for legitimate and legal sciences, Vol. 14, Is. 1, 2017, p 434.

<sup>(2)</sup> Mohammed Mahmoud Al-Jammal, The smart electronic means from Islamic jurisprudence perspective, A research presented to the 24th annual Scientific Conference held in the UAE, Dubai Government, 2019, PP 15-16.

development at the technical and technological aspect; the increase of the public administration needs to contract in light of increasing demand for services, obliges it to resort to all available means for that, including the adaptation of the latest findings of the technological revolution and what accompanies it of emergence of tools and means which may form a new style and pattern through which the public administration concludes its contracts. Here, we think that the chance became available to exploit the smart agent or mediator in the processes of governmental tender or bid where this requires several issues concluded as follows:

1. Concluding the essential legislations where it allows the use of smart agent or mediator in the area of governmental contracts.
2. Securing a safe technical environment to protect the new concluded contracts by the smart mediator or agent.
3. Training the human cadres to deal with modern techniques which we think they will replace every traditional thing in the area of concluding governmental contracts.

## **The second branch**

### **The smart governmental tender**

The governmental tender is considered as one of the most common and important major methods to conclude governmental contracts where mostly the administration resorts to when there is a need to buy commodities, services or contracting for public works. Tender is defined in general as "A method of the contracted selection with the administration who introduces the highest tender and the administration resorts to him when it has the desire to sell or rent its properties <sup>(1)</sup>. Comparative legislations have permitted the public administration to conclude its governmental contracts through electronic tender, as the Decree No. 2002/692 issued on 30/4/2002 and by indication to the text of Article 56 of French Administrative Contract Law which pointed to the permission of concluding governmental contracts by electronic means. The Decree No. 846/2001 was also issued on 18/9/2001 dedicated to organize the electronic tenders. With issuing of the current private law on public contractions No. 1075 of 2018, the legislator organized the electronic tender in the Article 2125-1 <sup>(2)</sup>. The Egyptian legislator followed the

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<sup>(1)</sup> Dr. Safa Fatouh Juma'a, The electronic administrative contract, 1st edition, House of thought and law, Al-Mansoura, 2014, p93.

<sup>(2)</sup> Art 2125-1 du code de la commande public " L'acheteur peut, dans le respect des règles applicables aux procédures définies au présent titre, recourir à des techniques d'achat pour procéder à la présélection d'opérateurs économiques susceptibles de répondre à son besoin ou permettre la présentation des offres ou leur sélection, selon des modalités particulières.

Les techniques d'achat sont les suivantes :

4° Le système d'acquisition dynamique, qui permet de présélectionner un ou plusieurs opérateurs économiques, pour des achats d'usage courant, selon un processus ouvert et entièrement électronique.

5° Le catalogue électronique, qui permet la présentation d'offres ou d'un de leurs éléments de manière électronique et sous forme structurée.

French one in permitting the administration to use electronic means in practicing its businesses and activities particularly in the area of concluding governmental contracts; we find that through the texts of law No.182 of 2018 concerning organizing contractions which are concluded by the new public bodies <sup>(1)</sup>.

Whereas the Jordanian legislator didn't mention the electronic tender clearly as one of the methods of the public administration in concluding its contracts, it was satisfied organizing the related procedures electronically such as advertisement and informing the winners of offers <sup>(2)</sup>.

The regulatory legislations permitted this through what mentioned in legal texts, as mentioning electronic means in most of the legislations was started indefinitely, which leads to the possibility of concluding governmental bidding by means of smart applications, which are the closed "Block Chain" as the most common of them, with the use of virtual payment methods such as "Bit Coin" and "Gold Coin". In our view, we can define smart governmental bidding as: "An automatic mean for selecting the contracted with the public administration in the cases of sale or lease based on prior conditions and programmed automatically by smart applications through which the public administration can contract with the highest bidder without any human intervention.

### **Second The characteristics of smart governmental bidding**

From the above, we conclude that the smart governmental bidding is distinguished from the governmental bidding in its traditional image or even the electronic one through the followings:

1. The smart governmental bidding is a new type of methods of concluding public governmental contracts although of its strangeness and distinctiveness.
2. The smart governmental bidding depends in its work on a complete automated technical system without interference of public administration employees.

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6° Les enchères électroniques, qui ont pour but de sélectionner par voie électronique, pour un marché de fournitures d'un montant égal ou supérieur aux seuils de la procédure formalisée, des offres en permettant aux candidats de réviser leurs prix à la baisse ou de modifier la valeur de certains autres éléments quantifiables de leurs offres.

<sup>(1)</sup>Article 83 of the Egyptian Public Authorities Law No. 182 of 2018 state the following: "The Public Authority for Government Services shall publish this law and its executive regulations, and any amendments to them, as well as publications, periodical books and decisions related to their application upon their issuance, including deleting decisions, the publishing rules, or re-registration, etc., on the general contracting portal, in addition to the created publishing rules.

<sup>(2)</sup> See the text of Article 63 of the Jordanian Government Procurement Law No. 28 of 2019, which says: "An official website shall be established from a single portal to be a major resource of information on government procurement, on which advertisements for tenders and referrals are published, the texts of this system, the instructions issued pursuant thereto, directions, articles, technical guidance and other necessary information.

3. The terms and instructions of involving in the smart governmental bidding are filled and edited by computer programs based on the public administration conditions.
4. The comparison among the presented offers to pull the two biddings automatically including any negotiated procedures or works.
5. The bidding fees are paid by "virtual" digital currencies.
6. The governmental bidding endures keeping documents and copies of contracts and protecting them from frivolity, erasing or amendment because of the technical nature which the smart applications are characterized by.

### **The third branch**

#### **The smart governmental bidding**

The governmental bidding is also considered as one of the most important and common main methods to conclude the governmental contracts. The bidding is defined in general as "The group of legal procedures that should be followed to reach the best bidders in price and terms to be contracted with them" <sup>(1)</sup>. It is also defined as "The bidding is used in case the administration would like to implement specific businesses, and the tender is used in the opposite case if the administration would like to dispose of some of its private property to others, whether by selling or renting" <sup>(2)</sup>. Another part of jurisprudence defined as "A method through which the administration commits to select the best of who apply to contract with it whether from the financial aspect or the service wanted to be done" <sup>(3)</sup>. It can be also define as "The process of referral to the applicant with the lowest price" <sup>(4)</sup>, and "A method through which the public authority commits to select the best of applicants who want to contract with from financial or technical aspect" <sup>(5)</sup>.

The administrative legislations defined a new form of the governmental bidding in its electronic formula, where this image came as a respond of the public administration desire towards electronic transformation in its businesses. The electronic governmental bidding is considered as the most important of that transformation, as the New Governmental Procurement System

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<sup>(1)</sup>Hisham Abdel Sayed Safi Mohammed, The legal system for electronic management contracts, A comparative study, PhD Thesis, Faculty of Law, Helwan University, 2014, p 156.

<sup>(2)</sup> Anas Qasim Jafa'ar, governmental contracts , A comparative study of tender and bid systems and its application of Law No. 89 of 1998 concerning tenders and auctions in Egypt and its executive regulations, in accordance with the latest amendments with the Study of B.O.T Contracts, 4th Edition, Dar Al-Nahda, Cairo, 2007, p 176.

<sup>(3)</sup>Suleiman Al-Tamawi, General foundations of governmental contracts , p. 239, referred to by Prof. Dr. Mohammed Saeed Amin, a brief study on the idea of governmental contracts - the provisions for their conclusion, University Culture House, Cairo, 1992, p 237.

<sup>(4)</sup> Mahmoud Khalaf Al-Jbouri, The legal system of governmental bidding, 1st edition, a comparative study, Culture House, Amman, 1999, p 66.

<sup>(5)</sup>Hussein Othman Mohammed Othman, **Fundamentals of administrative law, Public administration businesses**,1st Edition, Al-Halabi Legal Publications, Beirut, 2003, p132.

included the concept of the electronic bidding as a step to ensure the Jordanian legislator determination on applying the concept of comprehensive and transformation into electronic government in running the public facilities of the country. The new system define the electronic bidding as “The bidding carried out by Jordanian Electronic Procurement System <sup>(1)</sup>, where this system permitted the resort to use the reverse auction style in the procedures of procurement and complete any method of that in addition to use the electronic reverse auction <sup>(2)</sup>, in addition to use these methods when concluding contractions. From the above, we find the Jordanian legislator adopted the concept of electronic governmental bidding and concluded it by electronic means, and based on that we think it is possible that the administration will direct to use more modern electronic means than the common ones such as the video, web or e-mail, and adopt virtual payment such as digital currencies “Bit Coin’ or even “Gold Coin” to keep pace with everything new particularly the area of governmental bidding. We can define the concept of governmental bidding as “An automatic mean to select the one who contracted with the administration based on prior specific terms by the smart applications through which the public administration can contract with the best applicant in terms of specifications and lowest price without any human intervention. We conclude from the above the most important features of the governmental bidding as follows:

1. The smart governmental bidding is a new image of the electronic governmental one as this due to the nature of smart applications which are more developed than the common electronic means.
2. The smart governmental bidding is completed automatically without any human intervention by the public administration men.
3. The smart governmental bidding depends in its work on computer programs in a form of algorithms within closed block chain.
4. The smart governmental bidding is able to find a fertile area in concluding international governmental biddings particularly those of frame agreements.

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<sup>(1)</sup> See the text of Article 2 of the New Jordanian Governmental Procurement Law mentioned previously.

A- The procurement body may use the reverse auction method to complete the procurement procedures or to complete any of the procurement methods mentioned in this system, including the referral of bids under framework agreements or any method of procurement, provided that evaluation standard are specified in the procurement documents and that these criteria are applicable.

B- It is decided, based on instructions issued by the Policy Committee, for this goal, how to use the reverse auction method, including the electronic reverse auction." The framework agreements mean: “The contracts concluded in an agreement between one party or more by a government and between one or more of the contracted intended to define the terms, conditions and procurement procedures in one manner based on the contract form.”, See Article 2 of the New Jordanian Government Procurement System, mentioned previously .

## **Conclusion**

Technological and technical development became the modern criteria through which the development and progress of nations is measured. The entire world knew several achievements related to that point and in various aspects of life, and the public administration was closed to technical and technological development, where it began to allow modern communication means to integrate in its different fields as the role of these methods has recently appeared in the area of concluding governmental contracts until we are before an independent legal system that regulates their conclusion electronically. Because of the continuous technical development, a new image emerged which is considered as a modern output and stage of the modern communication means called smart applications which were characterized with their accuracy and strangeness based on their nature of work and depend on the automated format in searching, in light of the absence of human role in concluding and implementing governmental contracts.

In this study, we attempted to set a primary view to the possibility of concluding governmental contracts by smart applications as a try to set a base for a legal system which rules the smart governmental contracts. Consequently, we conclude this study by mentioning the most important results based on what has come in this study as follows:

### **First: The results**

1. The smart governmental contracts are new image of the electronic governmental because they depend on methods and smart applications which are more developed than the common electronic means and tools, in light of the absence of human element from the contraction process depending on applications and programs automatically working completely.
2. The smart governmental contracts provides the feature of memorization and revision anytime and anywhere, with inability to make any amendment, deletion or erasing which provides a safe environment.
3. The smart governmental contracts will work on decreasing of administrative corruption and common collusion of the administration men with contracted public, and contribute in decreasing their explosion to blackmail.
4. The smart governmental contracts gives the administration a wider space in searching for the best contracted and offers because of their capacity in looking for contracted all over the world.
5. The smart governmental contracts will strengthen the ruling principles of the governmental contracts particularly the public ones, equality among competitors and transparency, and it limit the administrative corruption such as bribery and favoritism.

### **Second : Recommendations**

1. Amending the texts of the Jordanian Government Procurement System to permit conclusion of governmental contracts in its new stage by smart applications such as closed "block chain", through adding a word or smart applications after every text ends by electronic means.

- 2- Admission of the legal personality of the smart agent in the area of concluding smart governmental contracts, which gives legitimacy to present the smart agent in the process of concluding governmental contracts.
3. The smart governmental contracts need an emergent legislative intervention giving them the legal legitimacy independently and clearly in conjunction with setting financial and legal rules that protect the stability of digital currencies prices when the public administration desires to trade currencies.
4. Reinforcing confidence in digital virtual currencies and beginning to trade them, especially in the field of governmental contracts when the administration pays the fees to those contracted with it, training and qualifying human cadres to use smart applications when concluding governmental contracts.
5. Adopting the idea of smart applications as one method of concluding governmental contracts along with its electronic ones.

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