Intellectual Property Office

BL O/0951/23

05 October 2023

PATENTS ACT 1977

APPLICANT	Shanke Zhao, Chunyu Zhao
ISSUE	Whether patent application GB2205210.4 is excluded under section 1(2)(c) of the Patents Act 1977
HEARING OFFICER	Ben Buchanan

DECISION

Background

1 This decision relates to the issue of whether the application, GB2205210.4, meets the requirements of section 1(2)(c) of the Patents Act 1977 ("the Act").

2 GB2205210.4 is the GB national phase of PCT/CN2020/110225 (published as WO2021/047364) and has been republished as GB2603406A. The prescribed period for putting the application in order as referred to in section 20 of the Act, and as defined in rule 30 of the Patents Rules 2007 and Patents (Fees) Rules 2007, ends on 9 March 2024.

3 Throughout their examination of this application the examiner has maintained that the claimed invention is excluded from patentability under section 1(2)(c) of the Act as a method for doing business and a program for a computer as such.

4 The examiner issued a letter on 20 February 2023 inviting the applicant to request a hearing. The applicant did not request a hearing when responding to this letter (in their letter of 19 April 2023), but the examiner and applicant were still not agreed on the patentability of the claims. To resolve this impasse, the application has come to me for a decision based on the documents on file. The examiner has summarised their objections and the applicant's counterarguments in their letter of 30 June 2023. I confirm that I have considered all relevant documentation when coming to my decision and that my decision relates to the claims filed on 19 April 2023.

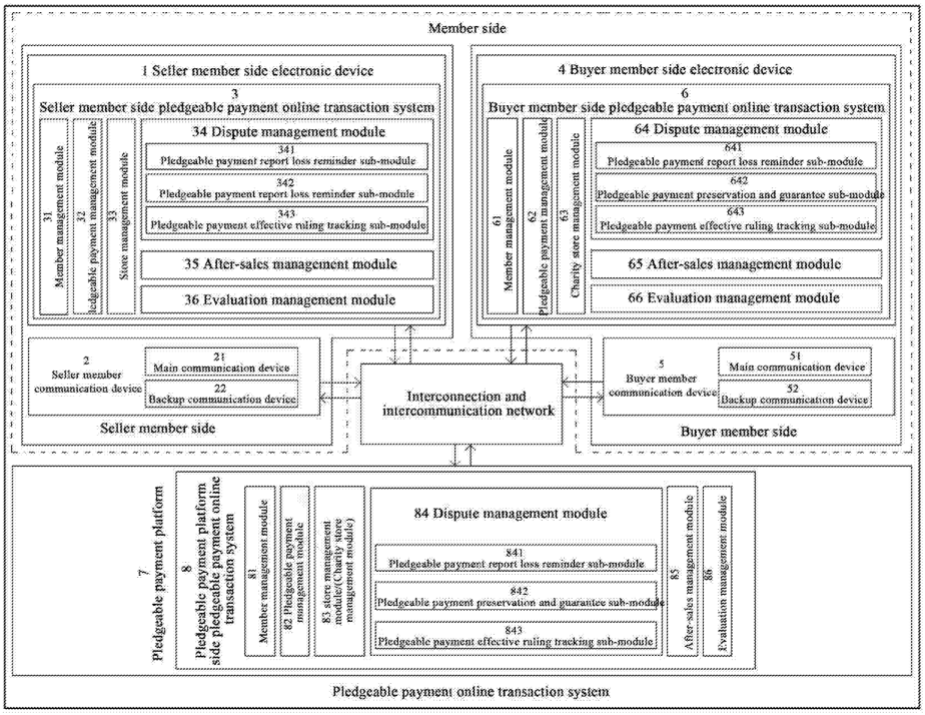
5 The specification, including the amended claims, the objections raised by the examiner and the applicant's arguments and observations can all be viewed at the IPO's online file inspection service: Intellectual Property Office - Patent document and information service (Ipsum) (ipo.gov.uk)

The invention

6 The invention relates to a system for making online payment transactions. The system comprises a number of components. In particular, it comprises so-called

"member side" architecture and a pledgeable payment platform. The member side architecture is split into seller side architecture and buyer side architecture. Each of the seller and buyer side architectures comprise a respective seller and buyer electronic device. These electronic devices have pledgeable payment online transaction systems installed which are used to communicate with the pledgeable payment platform (which may be embodied as a platform side online transaction system run on one or more servers) in order to log-in to the member accounts and perform electronic buying or selling transactions for goods or services. The buyer and seller are also each associated with one or more other communication devices that can be used to communicate with the user, for example to authenticate the user or to alert them to abnormal transactions or activity.

7 Figure1, shown below, illustrates the components of the system.



8 The system is designed to implement a so-called "pledgeable payment system" which differs (according to the specification) from previous payment systems as it is neither an online transaction system using electronic currency recognised by the State (e.g., a standard online bank transaction via a credit or debit card), nor an electronic token based transaction system (for example decentralised virtual currencies or cryptocurrencies).

9 The pledgeable payment system seeks to overcome risks and deficiencies of previous online payment systems by creating a system in which members (buyers and sellers) must register as account holders and can purchase pledgeable electronic currency (in exchange for state recognised electronic currency). A buying and selling transaction is conducted between the buyer and seller via the platform in the form of transfer of a deposit and a final amount (e.g., upon receipt and inspection of the goods). Upon request the platform reviews the transaction and redeems the seller's pledgeable electronic currency for state recognised electronic currency. The

pledgeable payment platform may further incorporate a route for payment dispute resolution via arbitration.

The claims

10 The claims filed on 19 April 2023 have two independent claims: claim 1, for a pledgeable payment online transaction system, and claim 10 for a pledgeable online transaction method. These are presented below.

1. A pledgeable payment online transaction system comprising: a member side, a pledgeable payment platform, and a pledgeable payment online transaction system, which are connected through an interconnection network, wherein the member side includes a seller side and a buyer side, the seller side having a seller member electronic device and a seller member communication device; and the buyer side having a buyer member electronic device and a buyer member communication device,

   characterized in that both seller and buyer member side electronic devices are equipped with a respective member side pledgeable payment online transaction system for logging into the pledgeable payment platform via the respective member electronic devices to purchase pledgeable payment electronic coins and conduct pledgeable payment online transactions, etc.; the member side pledgeable payment online transaction system including the online transaction system for seller member-side pledgeable payment and the online transaction system for buyer member-side pledgeable payment, and

   wherein each of the member side further comprises a main communication device and a backup communication device other than the member electronic devices, the communication device configured to communicate with the pledgeable payment platform for member identification information and pledgeable payment identification information verification communication and pledgeable payment transaction information communication, to register authentication information and, in case a binding information of a payment account associated with the seller member or the buyer member changes or an abnormal transaction occurs, receive reminders to that effect, and handle the changed information or the abnormal transaction.

10. A pledgeable online transaction method comprising:

    Step A: Member registration for online pledgeable transactions comprising:

    i) initializing a membership request on a member side electronic device and authorizing and verifying the same via a member side communication device other than the member side electronic device, to a pledgeable payment platform using a member side pledgeable payment online transaction system;

    ii) initializing a basic pledgeable payment account, using a pledgeable payment management module, by the registered member for grant of a pledge and redemption privileges, wherein

the basic pledgeable payment account includes a pledgeable personal account and a pledgeable unit account;

iii) accepting, by the pledgeable payment platform, of a two-way multilateral guarantee agreement of the registered members for purchase of a pledgeable payment electronic coins, wherein the purchase of a pledgeable payment electronic coins is granted only upon approval of the two-way multilateral guarantee agreement;

iv) recharging the basic pledgeable payment account by purchasing a pledgeable payment electronic coins;

v) marking one or more goods in the pledgeable payment electronic coins, wherein the marking includes setting a price of the one or more goods in legal currency,

Step B: Online pledgeable transaction:

a) selecting, by a registered buyer member, one or more goods marked in the pledgeable payment electronic coins and placing a pledgeable payment order by the registered buyer member;

b) accepting, by a registered seller member, of the pledgeable payment order placed by the registered buyer member, wherein the acceptance includes agreement on a pledgeable deposit by both the registered seller member and the registered buyer member and the buyer member delivering the deposit as a pledgeable deposit to the pledgeable payment platform;

c) reviewing the pledgeable payment order by the pledgeable payment platform for approval, wherein upon approval a pledgeable warrant is issued by the pledgeable payment platform;

d) submission of said pledgeable warrant to the pledgeable payment platform, and providing the pledgeable warrants to the registered seller member;

e) approving of the pledgeable warrant by the registered seller member to receive pledgeable payment electronic coins in the registered seller member pledgeable payment account, and triggering a countdown for pledgeable periodic redemption payments;

f) delivering of the goods to the registered buyer member, and confirming, by the registered buyer member, the receipt of the delivered good as acceptable or not through the pledgeable payment platform, wherein upon acceptance by the registered buyer member the balance payment is paid to the pledgeable payment platform;

i) submission, by the registered seller member, the pledgeable warrant to the pledgeable payment platform for redemption after the countdown in step (e) is over;

j) reviewing and paying, by the pledgeable payment platform, the redemption amount to the registered seller member's bank account and, confirming, by the registered seller member, of the receipt of the consideration redemption payment to end the pledge payment and redemption of the pledgeable payment electronic coins by the pledgeable payment platform,

wherein the agreement in Step B(b) includes instructing, by the registered buyer member, to the pledgeable payment platform to pay the pledgeable payment electronic coins of a certain type and amount from its pledgeable account to the registered seller member's pledgeable account, and pay the deposit in the form of pledgeable payment.

11 I have to say I do not find the claims very clear and am not much aided in construing them by the description. On the face of it they do not clearly relate to the same inventive concept, not least because the back-up communication device relied upon in claim 1 is not clearly defined in claim 10. I will consider the scope of the claims fully in my analysis below.

The law

12 The relevant provision is section 1(2)(c) of the Patents Act 1977, which states that certain things cannot be protected by a patent:

1(2) It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of—

(a) a discovery, scientific theory or mathematical method;

(b) a literary, dramatic, musical or artistic work or any other aesthetic creation;

(c) a scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer;

(d) the presentation of information;

but the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a patent or application for a patent relates to that thing as such.

13 The Court of Appeal in *Symbian*[1] stated that the question of whether a computer-implemented invention is patentable has to be resolved by answering the question whether it reveals a technical contribution to the state of the art. It proceeded to answer the question with the aid of the four-step test set out in its earlier judgment in *Aerotel*[2], namely:

(1) construe the claim;
(2) identify the actual (or alleged) contribution;
(3) ask whether it falls solely within the excluded subject matter;
(4) check whether the actual or alleged contribution is actually technical in nature.

[1] Symbian Ltd. V Comptroller -General or Patents [2008] EWCA Civ 1066
[2] Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application [2006] EWCA Civ 1371

14 The fourth step of the test is to check whether the contribution is technical in nature. In paragraph 46 of *Aerotel* it is stated that applying this fourth step may not be necessary because the third step should have covered the question. This is because a contribution which consists solely of excluded matter will not count as being a "technical contribution" and thus will not, as the fourth step puts it, be "technical in nature". Similarly, a contribution which consists of more than excluded matter will be a "technical contribution" and so will be "technical in nature." In the present case, which concerns a computer-implemented invention, I shall consider whether the contribution falls solely within the excluded subject matter alongside the question of whether the contribution is technical in nature, i.e. I will consider the third and fourth steps of *Aerotel* together.

15 Lewison J (as he then was) in *AT&T/CVON*[3] set out five signposts that he considered to be helpful when considering whether a computer program makes a technical contribution. In *HTC/Apple*[4] the signposts were reformulated slightly in light of the decision in *Gemstar*[5]. The signposts are:

i) whether the claimed technical effect has a technical effect on a process which is carried on outside the computer
ii) whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run
iii) whether the claimed technical effect results in the computer being made to operate in a new way
iv) whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer
v) whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.

Application of the Aerotel test

Step (1): construe the claim

16 As claims 1 and 10 do not appear to be in straightforward correspondence, it is worth carefully construing these claims and highlighting their commonalities and differences before considering the contributions made by these independent claims.

17 In claim 1, it seems to me that the "member side" refers to a seller member side electronic device or a buyer member side electronic device (which are any suitable physical electronic device) upon which a member side pledgeable payment online transaction system is run. In accordance with Figure 1 shown above, the "pledgeable payment platform" is any suitable computing device with a communication means (such as a network port), upon which a platform side pledgeable payment online transaction system is run.

18 Claim 1 is somewhat confusing because it defines the "pledgeable payment online transaction system", with subsequent reference to itself (line 2). I have construed this latter reference as the "pledgeable payment platform side pledgeable online

[3] AT&T Knowledge Ventures/Cvon Innovations v Comptroller General of Patents [2009] EWHC 343 (Pat)
[4] HTC Europe Co Ltd v Apple Inc [2013] RPC 30
[5] Gemstar-TV Guide International Inc v Virgin Media Ltd [2010] RPC 10

transaction system" shown at 8 in Figure 1, itself seemingly the sole overarching component of the pledgeable payment platform shown at 7 which is previously separately defined in claim 1. Suffice to say there are member and platform side components and systems, interconnected by a network as shown in Figure 1.

19 Claim 1 further specifies that the member sides each comprise a further two communication devices (in addition to the member side electronic communication devices): the main communication device and a back-up communication device. These are clearly shown at 21, 22, 51 & 52 in Figure 1. In light of the description and their purpose, these are construed to be two separate devices or means of communication that respectively provide for identification and verification of a user and a back-up means of authentication that could, for example, be used in the event of a security breach related to the account and/or the main communication device. It is noted that, in claim 1, there is reference to "the communication device", when only "a main communication device" and "a backup communication device" are introduced. In light of the description and the claimed functions of "the communication device", the passage in claim 1 which reads "the communication device configured to…the abnormal transaction" is construed broadly to indicate that one of the main communication device and the backup communication device has the claimed functions. On this point I was helped by the useful summary by the examiner in paragraph 5 of their communication of 30 June 2023.

20 Furthermore, in claim 1, "pledgeable payment online transactions" are construed as transactions in which pledgeable electronic coins are exchanged for agreed goods or services. Member identification information is any information relating to the identification of a member (such as user credentials). In light of the description, the exact meaning of "pledgeable payment identification information verification communication and pledgeable payment transaction information communication" is unclear; consequently, this is construed broadly to mean that one of the main communication device and the backup communication device is involved in communicating some information related to pledgeable payment transactions.

21 Claim 10 is a method claim with steps corresponding to most of the necessary functions of the device components of claim 1, or steps adding further detail about actions of the device components of claim 1. In particular, the claim requires that:

- there is a member side electronic device and a member side communication device separate from the member side electronic device and users can be categorised as buyers or sellers [steps (i), (a), (b)];
- there is a pledgeable payment platform with which the electronic device can communicate for the user to purchase pledgeable payment electronic coins [steps (i)-(iii)];
- pledgeable payment online transactions may be conducted on the pledgeable payment platform via the member electronic devices [steps (a), (b)];
- the member side communication device communicates with the pledgeable payment platform for member identification verification [step (i)]

These features represent the common subject matter shared by claims 1 and 10.

22 The differences between the claims are principally that claim 10 contains further details of the precise processes for member registration (Step A) and online transaction processing (Step B) on a system described by the common matter. Claim 1 defines that there is a backup communication device in addition to a main communication device for each member, and that the main or backup communication devices are used for pledgeable payment identification information verification and pledgeable payment transaction information communication, and are also used in handling abnormal transactions.

23 In this respect I disagree with the examiner's construction (paragraph 7 of their letter of 30 June 2023) that the "member side communication device" defined in claim 10 constitutes the "backup communication device" of claim 1. This appears to have stemmed from a simple misreading by the examiner of the actual claimed phrase "a member side communication device other than the member side *electronic* device" as – as erroneously quoted in the examiner's letter – "a member side communication device other than the member side *communication* device" (emphasis added). Using the correct wording of the latest claims, which refers to only one member side communication device per member in claim 10, I can see no justification for construing the communication device of claim 10 as constituting the backup device. To my mind claim 10, unlike claim 1, does not define a backup communication device *in addition to* a main member communication device and member side electronic device. The claims are thus fundamentally different and share only the common subject matter outlined above.

Step (2): identify the actual (or alleged) contribution

24 How then to proceed? The applicant's argument emphasises the contribution to transaction security as a consequence of using separate electronic and communication devices and does not differentiate the contribution from each claim. It refers to the backup communication device but (with an arguably favourable reading) as an optional element of the invention and contribution. Having thought hard about this, I think it is the way to proceed. For the avoidance of doubt, I draw no conclusion about the unity of the claims, but I will consider their shared contribution including the optional backup communication device for the purposes of assessing excluded subject matter.

25 Paragraph 43 of *Aerotel* explains what is meant by the actual contribution and sets out that it corresponds to what the invention has added to human knowledge, the problem it solves and the advantages it offers. The process of identifying the contribution was summarised in paragraph 43 of *Aerotel* as follows:

> *… it is an exercise in judgement probably involving the problem said to be solved, how the invention works, what its advantages are. What has the inventor really added to human knowledge perhaps best sums up the exercise. The formulation involves looking at substance not form—which is surely what the legislator intended.*

26 In their letter of 19 April 2023, the applicant submits that the contribution is:

> *Providing a safer way of conducting online transaction by not linking the actual account with the online transaction account, but through a pledgeable online payment system. The pledge system, as claimed by the present invention, is*

applicable only upon deposition of an electronic token purchased once and deposited at the pledgeable payment platform by the user. Further, the pledgeable account created at the pledgeable payment platform is linked with separate devices per member, a member electronic device and a communication device (main and backup communication devices) other than the member electronic device(s). If the member electronic device, which may or may not be a communication device in itself, is compromised, the communication devices – the main communication device or the backup communication device, may be used for suspension of the member electronic device linked with the account, and the main or backup communication device may then be used for conducting online transactions.

27 The examiner accepted this as the contribution. I agree that this is a fair summary of the problem and the advantages and operation of the invention. I am simply going to nuance the first reference to the backup communication device to resolve the construction and relationship of the claims:

> *Providing a safer way of conducting online transaction by not linking the actual account with the online transaction account, but through a pledgeable online payment system. The pledge system, as claimed by the present invention, is applicable only upon deposition of an electronic token purchased once and deposited at the pledgeable payment platform by the user. Further, the pledgeable account created at the pledgeable payment platform is linked with separate devices per member, a member electronic device and a communication device (**or both** main and backup communication devices) other than the member electronic device(s). If the member electronic device, which may or may not be a communication device in itself, is compromised, the communication devices – the main communication device or the backup communication device, may be used for suspension of the member electronic device linked with the account, and the main or backup communication device may then be used for conducting online transactions.*

Steps (3) and (4): ask whether it falls solely within the excluded subject matter; check whether the actual or alleged contribution is actually technical in nature

28 The examiner has objected to the invention as relating to a program for a computer and a method for doing business. I will deal with each of these categories in turn.

Program for a computer

29 As the invention is embodied as a network of computing devices suitably programmed to operate as an online transaction system, the examiner has considered the five *AT&T/CVON* signposts (as reformulated in *HTC/Apple*) to look for indications that the contribution is technical, and I will follow this approach. The applicant has provided no comment in respect of the signposts in their letter of 19 April.

30 The first signpost states that if there is a process which is carried on outside the computer (or computers) and the contribution has a technical effect on this process, then the contribution is technical. The field of endeavour of making online payment transactions is not technical per se, it is financial. In this case, the identified

contribution includes (although they are not explicit in the formulation above) authentication steps or one or more communication devices for user authentication, but the invention does not contribute technical advances in the field of user authentication or secure communications. In particular, as the examiner notes, it is well-known to use communication devices (such as a mobile phone) associated with a user to authenticate the user for security purposes, and for there to be a separate device or mode of communication associated with the same user which can be used for authentication in multifactor authentication, if the first method may be compromised or if abnormal activity is detected.

31 The separation of accounts through a pledgeable payment platform, albeit in combination with separate devices, does not seem to give rise to a technical effect outside the computer because the devices themselves operate and interact within the network conventionally. There is no detail in the application to support that the devices or their configuration are unconventional or add an external technical effect. I conclude that the first signpost does not indicate that the invention is not excluded.

32 Signposts (ii), (iii) and (iv) are related to the architecture, operation, or efficiency of the overall computer as a computing device. In the present case, the invention can be embodied as suitably programmed standard hardware (servers and user devices). There is no suggestion in the specification that the architecture or generality of operation of any of the devices is distinctive. As such, the contribution, including of the system overall, does not satisfy signposts (ii), (iii) or (iv).

33 Signpost (v) asks whether the invention directly solves, or merely circumvents, a technical problem. Here, the problem being solved might be framed in a technical sense: how can an online transaction system be made (more) secure and trustworthy? However, the proposed solution lies in the design of the concept of a pledgeable payment platform; the separation of accounts. It improves financial security by minimising the exposure of the user's actual payment account to the transaction system rather than by implementing a technically more secure communication or encryption protocol. This circumvents the technical problem in the same way that sending less data through a network circumvents the technical problem of low bandwidth[6]. Signpost (v) is not met.

34 Finally, I note that this reasoning is entirely consistent with my previous decision in *Lookout Inc*[7]. In that case the contribution related specifically to access control, and, in light of the facts of the case, the specific contribution was found to be technical and not excluded.

Method for doing business

35 From the foregoing analysis it is clear that the contribution lies in the field of online payment transactions and the benefits arise as a result of the concept of a pledgeable payment online transaction system for conducting online transactions without linking an actual account with the online transaction account. The inherent problems of a lack of security and trust in conventional online payment transaction

[6] See the Manual of Patent Practice, section 1.38.5, citing *Direct TV Pty's Application* (BL O/150/11, paragraphs 32-33) and *Apple Inc's Application* (BL O/244/13, paragraphs 38-39).
[7] Lookout Inc's Application (BL O/701/21)

systems or electronic token based transaction systems do seem to have been overcome within the concept of the pledgeable payment system.

36 In Halliburton[8], Birss J (as he then was) at paragraph 35 noted that the use of a computer to implement a better business method did not confer patentability:

> *"The business method cases can be tricky to analyse by just asking whether the invention has a technical effect or makes a technical contribution. The reason is that computers are self evidently technical in nature. Thus when a business method is implemented on a computer, the patentee has a rich vein of arguments to deploy in seeking to contend that his invention gives rise to a technical effect or makes a technical contribution. For example the computer is said to be a faster, more efficient computerized book keeper than before and surely, says the patentee, that is a technical effect or technical advance. And so it is, in a way, but the law has resolutely sought to hold the line at excluding such things from patents."*

37 The improvements that the claimed invention provides fall wholly within a method for doing business. In particular, security and trust are improved through the concept of a pledgeable system, that relies on state-backed currency (rather than electronic token based currencies) but reduces the exposure of the actual payment accounts to the transactions. The improvements do not relate to any technical features of the systems that make improvements to the way the computer systems authenticate or verify users, communications or transactions.

38 The fact that it may be a better method for doing business, or implemented on a computer, does not remedy the exclusion, because no technical contribution is evident through either of these attributes.

Conclusion

39 I have considered the independent claims and found that both are excluded under section 1(2)(c) for the reasons set out above. The dependent claims similarly fail to provide a technical contribution and these claims are also excluded.

40 The application is refused under section 18(3).

Appeal

41 Any appeal must be lodged within 28 days after the date of this decision.

Ben Buchanan

Deputy Director, acting for the Comptroller

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[8] Halliburton Energy Services Inc's Applications [2012] RPC 129. The relevant parts quoted and discussed here are included in the Manual of Patent Practice at section 1.34.