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PATENTS ACT 1977

APPLICANT	Wei Xu
ISSUE	Whether patent applications GB 2108140.1 & GB 2108142.7 comply with sections 1(2), 14(5) and 76(2) of the Patents Act 1977
HEARING OFFICER	J Pullen

DECISION

1 Patent applications GB 2108140.1 & GB 2108142.7, both entitled “Method, Device and Wearable Part Embedded with Sense Core Engine Utilizing Barcode Images for Implementing Communication” were filed on 08 June 2021 as divisional applications from GB 1521949.6. The parent application was published as GB 2530940 on 06 April 2016 and is itself derived from a PCT application, published as WO2016/154808 A1, with 08 July 2013 as its earliest date due to the priority document CN 20130284352. The two present applications were published as GB 2593386 A on 22 September 2021 and GB 2593640 A on 29 September 2021 respectively.

2 For both applications, the examiner raised in the combined search and examination reports, dated 20 July 2021 and 22 July 2021 respectively, an objection to the invention being excluded under section 1(2) of the Patents Act 1977 (“the Act”) as a program for a computer as such and a method of doing business. There have been several rounds of correspondence between the examiners and the applicant’s agent without agreement being reached as to a form of claims which would overcome the excluded subject matter objection.

3 An offer of a hearing was made on 24 January 2022 for both applications. Further amendments were filed on 25 February 2022 for GB 2108140.1 and 24 February 2022 for GB 2108142.7. The examiner then issued pre-hearing reports on 10 March 2022 for both applications. The issues to be decided were whether, or not, the claimed inventions of both applications were excluded from patentability by virtue of section 1(2); whether or not the claimed invention of GB 2108140.7 contravened section 76(2) by including added matter within the claims; and whether or not GB 2108142.7 complied with section 14(5) due to a lack of clarity within the claims.

4 These matters came before me at a hearing on 20 April 2022, held via videoconference, at which the applicant was represented by Mr Phillip Sanger of GWIP Ltd.

5 I am grateful to Mr Sanger for the submission of skeleton arguments in good time before the hearing. I confirm that in reaching my decision I have taken account of all documents on file. This includes the amended claims filed 25 February 2022 for GB 2108140.1 and 24 February 2022 for GB 2108142.7, and the skeleton arguments of 13 April 2022 filed in respect of both applications.

6 I note that the examiner has deferred update of the search and completion of the examination on both applications. If I find the claimed inventions are allowable then it will be necessary for me to remit the applications to the examiner to complete the search and examination.

The inventions

7 The descriptions filed on both applications are the same. The field of the invention reads:

> *"The present invention relates to a communication method and a communication device, particularly to a method, a device and a wearable part utilizing barcode images to communicate between a mobile terminal and at least two backend servers."*

8 As well as describing some prior art patent documents, the background of the invention section of the description states:

> *"A two-dimensional code (dimensional barcode) uses a particular geometric figure and black-and-white graphics distributed in a two-dimensional direction according to certain rules to record data symbol information. Mobile phones' two-dimensional codes are applications of the two-dimensional code on mobile terminals."*

There is then discussion of two prior art CN patents or patent applications, application number CN 20010033918.7, published as CN 1841425, and CN 200480005625.1, published as CN 1778129. The description then continues:

> *"In the prior art, the mobile terminal users need to manually download and install client software to photograph and decode the two-dimensional codes, and communicate with the backend server. The procedures of manual download and client software installation reduce the users' experience satisfaction.*
>
> *In addition, the users must open the mobile terminal and photograph the two-dimensional codes using the camera of mobile terminal, so the mobile terminal must be hold by hands at any time.*
>
> *Moreover, in the prior art including the above two patents, only one backend server is included which shall achieve the generation of two-dimensional codes, user registration of mobile terminal, decoding and verification of two-dimensional codes, as well as providing services corresponding to the two-dimensional codes, resulting in low working efficiency of the backend server."*

9 I will now consider the two applications separately.

GB 2108140.1

10 The invention in GB 2108140.1 is defined using four independent claims. Claim 1 defines a barcode image-based commodity transaction system; claim 10 defines a barcode image-based commodity transaction method; claim 16 defines a mobile terminal and claim 24 defines a checkout terminal. I note that no plurality objection has been made. I will only reproduce claim 1 here.

11 Claim 1 of GB 2108140.1 reads:

> *A barcode image-based commodity transaction system, comprising:*
> *a mobile terminal;*
> *a checkout terminal;*
> *a first server; and,*
> *a second server; wherein*
> *the mobile terminal is:*
> *installed with a client software that is configured to communicate with the first server and the second server, the client software being matched with a preset coding rule; and, configured to complete user registration with the first server;*
> *the checkout terminal is configured to release a barcode image containing merchant information, wherein the barcode image is used for creating a payment, and the barcode image is dynamically generated for the specific transaction being undertaken;*
> *the mobile terminal is further configured to:*
> *acquire the barcode image;*
> *decode the barcode image to obtain coding information corresponding to the barcode image, which coding information includes an address of the first server; and,*
> *after obtaining the coding information, connect with the first server via the client software,*
> *the first server is configured to verify the barcode image obtained by the mobile terminal and determine whether the barcode image is generated according to the preset coding rule; and,*
> *if it is determined that the barcode image is generated according to the preset coding rule, the client software of the mobile terminal is further configured to obtain the merchant information by parsing the coding information and sending a checkout request to the second server; and*
> *the second server is configured to receive the checkout request sent from the mobile terminal via the client software, process the checkout request, and complete settlement.*

Added matter

The law

12 The relevant section of the Act is section 76(2) which reads:

> *No amendment of an application for a patent shall be allowed under section 15(6), 18(3) or 19(1) if it results in the application disclosing matter extending beyond that disclosed in the application as filed.*

13 Guidance on section 76 can be found in *Bonzel and Schneider (Europe) AG v Intervention Ltd*[1], where Aldous J (as he then was) stated:

> *The decision as to whether there was an extension of disclosure must be made on a comparison of the two documents read through the eyes of a skilled addressee. The task of the Court is threefold:*
>
> *a) To ascertain through the eyes of the skilled addressee what is disclosed, both explicitly and implicitly in the application.*
>
> *b) To do the same in respect of the patent as granted.*
>
> *c) To compare the two disclosures and decide whether any subject matter relevant to the invention has been added whether by deletion or addition. The comparison is strict in the sense that subject matter will be added unless such matter is clearly and unambiguously disclosed in the application either explicitly or implicitly.*

14 A further summary was provided in *Richardson-Vicks Inc's Patent*[2] where Jacob J (as he then was) stated:

> *The test of added matter is whether a skilled man would, upon looking at the amended specification, learn anything about the invention which he could not learn from the unamended specification.*

15 The matter at issue is whether the reference to "decode the barcode image to obtain coding information corresponding to the barcode image, which *coding information includes an address of the first server*" [my emphasis] adds technical subject matter to the specification of the application.

16 I am satisfied that the specification as filed does implicitly disclose the subject matter at issue, on page 12 lines 25-28 in relation to the example of Fig 1, for example:

> *"The mobile terminal 2 takes a picture of a barcode image 6 through a built-in camera, decodes the taken barcode image 6, and requests service providing from one of the backend servers 41, 42... according to information obtained through decoding."*

17 The relevant subject matter is present in the specification and would be understood by the skilled reader to be applicable to the other embodiments. It is noted that embodiments of Fig 6, Fig 10, & 15, at least, all feature the decoding of the image and connecting, or linking, to a server based upon the decoded information. On that basis, I am satisfied that there is at least implicit disclosure of the subject matter objected to in GB 2108140. I do not find there to be added subject matter.

Excluded subject matter

The law

18 The examiner objected that the invention of this application is excluded from being patented as a program for a computer and a scheme, rule or method for doing

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[1] *Bonzel and Schneider (Europe) AG v Intervention Ltd* [1991] RPC 553
[2] *Richardson-Vicks Inc's Patent* [1995] RPC 586

business. The relevant section of the Act is s.1(2), the most relevant provisions of which are shown below with my emphasis added:

> *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) ...;*
>
> *(b) ...;*
>
> *(c) … **a scheme, rule or method for…doing business, or a program for a computer**;*
>
> *(d) …;*
>
> *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.***

19 The Court of Appeal has said that the issue of whether an invention relates to subject matter excluded by Section 1(2) must be decided by answering the question of whether the invention reveals a technical contribution to the state of the art. The Court of Appeal in *Aerotel/Macrossan*[3] set out the following four-step approach to help decide the issue:

> *(1) Properly construe the claim;*
> *(2) Identify the actual 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.*

20 The operation of the approach is explained at paragraphs 40-48 of the judgment. Paragraph 43 confirms that identification of the contribution is an exercise in judgment involving the problem said to be solved, how the invention works and what its advantages are; essentially, what it is the inventor has really added to human knowledge, looking at substance, not form. Paragraph 47 adds that a contribution which consists solely of excluded matter will not count as a technical contribution.

21 In *Symbian*[4] the Court of Appeal reaffirmed the *Aerotel* approach while considering a question of "technical contribution" as it related to computer programs emphasising the need to look at the practical reality of what the program achieved, and to ask whether there was something more than just a "better program".

22 The case law on computer implemented inventions was further elaborated in *AT&T/CVON*[5] which provided five helpful signposts to apply when considering whether a computer program makes a relevant technical contribution. In *HTC v Apple*[6], Lewison LJ reconsidered the fourth of these signposts and felt that it expressed too restrictively. The signposts are:

> *i. whether the claimed technical effect has a technical effect on a process which is carried on outside the computer;*

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[3] *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371; [2007] RPC 7
[4] *Symbian Ltd v Comptroller-General of Patents*, [2009] RPC 1
[5] *AT&T Knowledge Ventures/Cvon Ltd* [2009] EWHC 343 (Pat)
[6] *HTC Europe Co Ltd v Apple Inc* [2013] EWCA Civ 451

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.

23 I must bear in mind that the signposts are guidelines for a technical contribution and should not be applied in a prescriptive manner. I must decide whether each of the claimed inventions makes a technical contribution when considered on their own merits.

24 The first step is of the *Aerotel* approach is to construe the claim. Both the examiner and Mr Sanger have concentrated their correspondence upon claim 1 and this was also the case in the skeleton and the hearing. I will do the same. There was agreement between the examiner and the applicant regarding the construction of claim 1 as follows:

A barcode-based commodity transaction system comprising:
a mobile terminal installed with client software matched with a pre-set coding rule, the mobile terminal acquiring a dynamically generated barcode image released by a checkout terminal, the barcode having merchant information used for creating a payment;
the mobile terminal decodes the barcode to obtain coding information and communicates with a first server with which it is registered;
the first server verifies the barcode image and determines whether it was generated according to the pre-set coding rule;
if so, the mobile terminal parses the coding information to obtain merchant information and sends a checkout request to a second server;
the second server processes the request and completes settlement.

25 While I am of the opinion that while the above is a largely accurate reflection of the claimed invention, the part which states *"the mobile terminal decodes the barcode to obtain coding information and communicates with a first server with which it is registered"* does not reflect the claimed invention. In claim 1, the mobile terminal is configured to complete user registration with the first server, but then no further reference to registration is made. From the description of Figs 13 and 14, which relate to the invention as claimed, the purpose of the user registration appears to be to provide payment card details to the server. This is also mentioned in more general terms with respect to the embodiment of Fig 2 which describes that the user registration of the user includes a username, password, address and payment account, amongst other things. In light of this, I believe slightly more accurate wording would be "the mobile terminal decodes the barcode to obtain coding information and communicates with a first server with which it has previously registered".

26 There are a few other points of construction to be addressed. I have construed *"barcode image"* as meaning a barcode, when understood broadly. This is consistent

with the start of the description of the preferred embodiments on page 12 of the specification:

> *"In the present invention, the barcode image may be a one-dimensional code, a two-dimensional code or a multi-dimensional code, or optical lattice diagrams (constituted by light and dark light, ultraviolet light or infrared ray) unrecognizable or difficultly to be identified by naked eyes, as long as coding information corresponding to information related to services could be completely stored."*

27 Further, *"released"* is not used in the description. It appears to mean published or displayed from the description of Figs 13 & 14 and I will use *"published"* instead, that being the term used in relation to these Figures. It is also assumed that the address of the first server included in the coding information is used to connect to the first server. Also, the first server must have a feedback mechanism to communicate to the mobile terminal the result of the verification.

28 Another point of construction is the verification undertaken by the first server and the determination of whether, or not, the barcode was generated in accordance with the pre-set coding rule. There was some discussion of the scope of this, or similar, earlier in the examination process, but the matter wasn't pressed. However, this part of the claim does not appear to adequately reflect the disclosure of the specification as filed as it suggests two steps: a "verification" step and a "determination of the use of the preset coding rule when generated" step. The specification as filed has only brief disclosure of the verification of the code or barcode. The best disclosure I have found relates to the embodiment of Fig 7 at page 17:

> *"The difference between FIG. 7 and FIG. 6 lies in that, the parsing verification of two-dimensional code 6 in step S530 and extracting of service information in step S535 are executed in the backend server 41. After the mobile terminal 2 decodes two-dimensional code 6 to obtain the coding information (step S525), the coding information is sent to the backend server 41 through step S550. The backend server 41 parses coding information to determine whether two-dimensional code 6 is generated according to the preset coding rule, that is, to determine whether two-dimensional code 6 is generated by the backend server 41 or other devices."*

29 It is noted that in relation to Fig 15, at page 26 the description reads:

> *"The backend server 41 contains two-dimensional code generating unit 411 which generates two-dimensional code 6 according to the preset coding rule; two-dimensional code parsing verification unit is used to parse and verify whether the two-dimensional code taken and decoded by mobile terminal 2 is generated by two-dimensional code generating unit 411. Certainly, two-dimensional code generating unit 411, two-dimensional code parsing and verification unit 412 can be used as independent servers, that is, two-dimensional code generating server 411 two-dimensional code parsing and verification server 412."*

30 From these passages, the skilled person reading the description and looking to interpret the claim in light of the description would consider that what the claim must mean is that the verification of the barcode is based upon the determination of whether or not the barcode was generated in accordance with the pre-set coding rule by means of a parsing verification – there is no support for any other interpretation in the specification as filed.

31 In light of the above, I construe claim 1 as:

> A barcode-based commodity transaction system comprising:
> a mobile terminal installed with client software matched with a pre-set coding rule, the mobile terminal acquiring a dynamically generated barcode image published by a checkout terminal, the barcode having merchant information used for creating a payment;
> the mobile terminal decodes the barcode to obtain coding information and communicates with a first server with which it has previously registered;
> the first server undertakes parsing verification of the barcode to determine whether the barcode was generated according to the pre-set coding rule and informing the mobile terminal of the verification result;
> if verified, the mobile terminal parses the coding information to obtain merchant information and sends a checkout request to a second server;
> the second server processes the request and completes settlement.

32 The next step of the *Aerotel* approach is to determine the actual contribution. I have considered the guidance in paragraphs 43 and 44 in *Aerotel* regarding the identification of the contribution.

33 Whilst it is not always necessary to refer to any prior art in order to determine what has actually been added to human knowledge, it can be useful to do so. The examiner and Mr Sanger have both referred to the applicant's own prior art document WO 2012/142937 A1 / EP 2701112 A1 when assessing the actual contribution and I will also consider the teaching of this document.

34 WO 2012/142937 A1 / EP 2701112 relates to various similar systems and methods which use barcodes, such as one-dimensional codes, two-dimensional codes or multi-dimensional codes. A mobile terminal, various servers and a two-dimensional code generating device are used in different embodiments, such as the use of the code to provide access to services, make payments and provide coupons. The examiner and Mr Sanger have discussed the embodiments of Figs 10 and 20 of EP 2701112 and I will quote from Mr Sanger's skeleton which provides a useful summary of these two embodiments, where D1 is EP 2701112, BES4 is BackEnd Server 4 and MT2 is Mobile Terminal 2:

> *"In the embodiment of D1, Fig. 10, a BES4 encodes commodity information into a barcode, which is published and captured by MT2. The MT2 decodes the code to obtain coding information (corresponding to the commodity information). It also parses the coding information to determine whether the barcode was generated according to a preset coding rule [0072]. If the answer is "yes", the MT2 sends a purchase request message to the BES4 which generates an order and processes payment in conjunction with the payment server 8.*
>
> *Fig. 20 enhances this process with a payment verification step between the BES4 and MT 2 prior to processing payment."*

35 It is worth mentioning that I can see no material difference between the "parsing verification of the barcode" as construed in claim 1 and the "parsing of the coding information to determine whether the barcode was generated according to a preset rule" of this prior art document – both appear to relate to the same process. It is also worth mentioning that there is very little disclosure in either the present application or

the prior art application regarding how the coding information is parsed in order to verify that the barcode was generated via the preset coding rule.

36 Within the skeleton Mr Sanger points out the differences between the hardware features between the present invention and the prior art: the use of a checkout terminal and a second server, and their associated functions. Mr Sanger specifically refers to the checkout terminal dynamically generating the barcode for the specific transaction but I do not believe this to necessarily be the case: the checkout terminal publishes or displays the barcode, but it could be generated elsewhere and communicated to the checkout terminal. Again, the description is not completely clear on the where the barcode is generated.

37 Regardless of this, prior art (GB 2478712 A, US 2012/0209749 A1 & KR 10-2012-0103924 A) has previously been cited which discloses the generation of a barcode at a point-of-sale terminal, the barcode encoding data relating to the purchase of one or more items. A user uses their mobile telephone, a mobile device, to scan or read the generated barcode. An application on the mobile device then extracts the purchase price or total information and executes a payment process with a server to settle the purchase.

38 Both in the skeleton and at the hearing, Mr Sanger submitted that a primary concern of the present invention is security, and specifically securing a barcode-based transaction against two different types of security breach: issues with the use of a static code (referred to as the “fake rule” or code fraud problem) and improved security by the use of a server to undertake the parsing verification. The fake rule or code fraud problem relates to the fraudulent use of a fake code that can divert money to an unintended recipient. The use of a server to undertake parsing verification is said to reduce the risk of fraud if the mobile device is infected with malicious code. Mr Sanger admitted at the hearing that there was no explicit mention of the types of security breach or concern that he was submitting that the invention addressed within the application as filed. The application as filed contains minimal references to security or fraud. Those references that are made, at the last full paragraph of page 19 and the final four lines of the paragraph spanning pages 23 and 24, are found in the applicant’s own prior art – at paragraphs 82 and 86 of EP 2701112 A1.

39 It is my opinion that the invention as claimed and as disclosed in the application does not address these problems, per se. While the mobile terminal may be a point of weakness in the system as a whole, the use of a separate server does not address this, it simply moves the problem elsewhere. Instead of having a mobile terminal as a point of weakness, the backend server becomes an additional point of weakness. Given that a server is no more than a computer that performs tasks or serves functions for other computers, there is no inherent security benefit from moving the task to a separate server, unless significant security precautions are taken at the server about which the application is silent. The present invention does not make any contribution to the security of the server or the system as a whole. Instead any implementation of the present invention would have to use standard security practices to secure the server. If this were not done, then the present invention could be less secure than an implementation that used parsing verification at the mobile device, for example, as a compromised server could compromise multiple mobile terminals and the transactions of multiple users.

40 Given that the use of parsing verification in the present invention appears to be the same as that found in the applicant's own prior art, I do not think that there is any contribution to security of barcodes. Any benefit provided to system would be invisible to the user as they have no manner of checking that the transaction details are correctly encoded within the barcode. The first server also has no manner of confirming this as it does not receive any details concerning the transaction to which the barcode relates and the specification as filed does not contain any details regarding the nature of the parsing verification. Therefore, I am of the opinion that the present invention does not provide anything additional, as a matter of substance, to the "false code fraud problem" that is not found in the applicant's own prior art.

41 The client software on the mobile terminal appears to be just as exposed to threats and manipulation than is the case in the applicant's prior art, though the point at which manipulation could be carried out within the transaction process – after the first server has parsed and verified the barcode with respect to the preset coding rule – may have changed.

42 While computer security in general may be technical problem, the present invention, and its contribution, adds nothing to human knowledge in this regard.

43 The invention works using suitably programmed computers, in terms of a checkout terminal that publishes the dynamically generated barcode, a mobile terminal with installed client software, a first server to conduct parsing verification, and a second server configured to process received checkout requests and process payments. The mobile terminal acquires the barcode and decodes it to obtain coding information. The terminal then communicates with the first server, which conducts parsing verification of the barcode using known techniques. The first server informs the mobile terminal of the result. If verified, the terminal parses the coding information to obtain merchant information and sends a checkout request to the second server for processing. The invention therefore uses a number of suitably programmed computers.

44 Mr Sanger suggested that the application related to a new arrangement of hardware. The examples within the description of the mobile terminal is a mobile phone, personal digital assistant (PDA) or a tablet PC. These were all standard in the art at the earliest date of the invention. Likewise, there is no suggestion, and no argument has been made, that any of the servers comprise new hardware of themselves. The same is true of the checkout terminal, such as the disclosure relating to this is found in the description. I am satisfied that the arrangement of these computers and checkout terminal is nothing more than the skilled person would expect for the invention to be performed. At the hearing, Mr Sanger directed me to the judgment of *Aerotel* and paragraphs 52 and 53 in particular. I have paid due attention to these paragraphs. However, I do not find the analogy to be persuasive. The invention in *Aerotel* related to a telephone system with an earliest date of 1985, the routing of telephone calls within that system, and the inclusion of a special exchange between conventional exchanges. In other patent applications considered by the courts with more recent earliest dates, such as Mr Macrossan's invention within *Aerotel* and that

of *Lantana*[7], systems comprising suitably programmed computers connected via a conventional network have been found to relate to excluded subject matter. I also note that in the later judgment of *Aerotel v Wavecrest*, the arrangement of hardware required in Aerotel's patent was found not to be new and the invention was found to be excluded.

45 It is the contribution, rather than the novelty of the claim which is at issue. I am not convinced that in the present claim there is a new arrangement of hardware that contributes to what has been added to human knowledge. Instead, the invention requires a network of suitably programmed computing devices and a suitably programmed checkout terminal.

46 In light of this, I find that the contribution of the present invention to be:

> Using known computer hardware and communication networks to implement a barcode-based commodity transaction system comprising:
> a mobile terminal installed with client software matched with a pre-set coding rule, the mobile terminal acquiring a dynamically generated barcode image published by a checkout terminal, the barcode having merchant information used for creating a payment;
> the mobile terminal decodes the barcode to obtain coding information and communicates with a first server with which it has previously registered;
> the first server undertakes parsing verification of the barcode to determine whether the barcode was generated according to the pre-set coding rule and informing the mobile terminal of the verification result;
> if verified, the mobile terminal parses the coding information to obtain merchant information and sends a checkout request to a second server;
> the second server processes the request and completes settlement.

47 I must now ask whether the contribution falls solely within the excluded subject matter and check whether the contribution is technical in nature.

48 At the hearing Mr Sanger pointed out that the application at suit in *Merrill Lynch*[8] was actually granted by the Office, as GB2180380 B. He stressed that the granted claim related to an apparatus adapted and arranged for automated securities trading having specific features, whereas the claimed invention which was objected to and decided upon in the judgment of *Merrill Lynch* was a generic computer for carrying out a known business method – the effective automation of a previously manual process. Mr Sanger sought to draw an analogy between the present invention and the granted claim in *Merrill Lynch*. Further, one of the applicant's main points was that each device in the claim has a specific function and interacts in a specific manner, and so it is not arbitrary or generic - the architecture of the system is designed to solve a problem and such systems have been found to be patentable and technical following both *Merrill Lynch* and *Aerotel*.

49 I am not convinced that this is a useful analogy. As with the invention at suit in *Aerotel*, the invention in *Merrill Lynch* had an earliest date of 1985 – it represents old

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[7] *Lantana Ltd v The Comptroller-General of Patents, Designs and Trade Marks* [2013] EWHC 2673 (Pat), confirmed in *Lantana Ltd v The Comptroller General of Patents, Design and Trade Marks* [2014] EWCA Civ 1463

[8] *Merrill Lynch's Application* [1989] RPC 561

technology rather than the state of the art close to the earliest date of the present invention. Also, one cannot determine the reason as to why the granted claim of GB2180380 B was considered allowable by this Office simply by looking at the claim itself.

50 It should also be noted that since the *Merrill Lynch* judgment there has been additional guidance from the Courts regarding the scope of the exclusions, including the *Aerotel* approach and the assessment of the actual contribution in the second step. In particular, I note from paragraph 44 of *Aerotel*:

> *"If an inventor claims a computer when programmed with his new program, it will not assist him if he alleges wrongly that he has invented the computer itself, even if he specifies all the detailed elements of a computer in his claim. In the end the test must be what contribution has actually been made, not what the inventor says he has made."*

51 Mr Sanger's submissions regarding the granted claims within *Merrill Lynch* appear to be at odds with this guidance. The granted claim in GB2180380 B is no more than a detailed list of computers with specific functions and various two-way communications links between those computers for automated securities trading, at least in light of modern computer networking technology.

52 The relevant part of the judgment of *Merrill Lynch* the judgment at page 569 states:

> *"Now let it be supposed that claim 1 can be regarded as producing a new result in the form of a technical contribution to the prior art. That result, whatever the technical advance may be, is simply the production of a trading system. It is a data-processing system for doing a specific business, that is to say, making a trading market in securities. The end result, therefore, is simply "a method of doing business", and is excluded by section 1(2)(c). The fact that the method of doing business may be an improvement on previous methods of doing business does not seem to me to be material. The prohibition in section 1(2)(c) is generic; qualitative considerations do not enter into the matter. The section draws no distinction between the method by which the mode of doing business is achieved. If what is produced in the end is itself an item excluded from patentability by section 1(2), the matter can go no further. Claim 1, after all, is directed to "a data processing system for making a trading market". That is simply a method of doing business. A data processing system operating to produce a novel technical result would normally be patentable. But it cannot, it seems to me, be patentable if the result itself is a prohibited item under section 1(2). In the present case it is such a prohibited item."*

53 What the present invention produces, the result, is a transaction, with settlement being conducted by the second server. This is undoubtedly a scheme, rule or method for doing business, in line with the guidance provided in *Aerotel* at paragraphs 67-70. I note particularly the following, from paragraph 68:

> *"Whether as an abstract or generalised activity or as a very specific activity, if it is a method of doing business as such it is excluded."*

54 Both *Aerotel* and *Merrill Lynch* make no distinction between whether a business method is *"specific*", more general or whether the business method of an invention is

a new business method rather than the computerisation of automation of an existing business method. Mr Sanger's submissions in this respect are not persuasive.

55 Mr Sanger also raised analogies with two Office decisions where an examiner's objection to the invention being excluded subject matter due to the business method and computer program exclusions was not upheld. These are *Google*[9] and *Lookout*[10].

56 The invention in *Google* related to a transaction system which allowed the automatic identification of a user at a location. The invention required a camera device, a computing device which transmits an identifier and undertakes facial recognition based upon a received image of a user and a number of facial templates corresponding to users whose computing devices received and retransmitted the identifier to another computing device, the other computing device supplying the facial templates to the computing device. It was noted that the computing device never receives any identification information regarding the user's computing device and the other computer device does not receive current images of the user.

57 The point Mr Sanger made in relation to the *Google* invention was that it was found to be a novel arrangement of known devices which have respective functions implemented to overcome a technical problem – providing increased security for the overall system.

58 However, as quoted in the skeleton, the specific point made by the Hearing Officer in their decision in *Google* was this:

> *"With regard to signpost (i), Mr Williams argues the task of automatically identifying a user is not a task that is carried out solely within the computer, but requires the retrieval of, and processing of, images from the "real-world", to provide an identification of a user in the "real world". I am minded to agree. In my view, the issue of security and privacy for users when using computing devices is a technical problem which has an effect outside of the computer/computer system. The method of the of [sic] identifying users makes a technical contribution by providing additional security and privacy benefits to users."*

59 It was the addressing of issues relating to the security and privacy for users that took place outside the computer which was crucial to the decision that the contribution made by the invention of *Google* was technical in nature. There is no such improvement in the present invention.

60 The decision in *Lookout* related to an invention concerning authorising user access to a network resource. In the invention a user inputs an access request for a network resource and a credential into a client computer. The request and credential are sent to an authorising server which verifies the user based upon the received credential. If verified, the server determines the user's access rights. If the user has the right to access the network resource subject to the approval of an authorising person, the identity of the authorising person and a contact device associated with the authorising person is determined. The authorising server then sends an approval request to the contact device. The authorising person can then approve or reject the

[9] Google LLC, BL O/611/19
[10] Lookout, Inc., BL O/701/21

approval request, and if approving, provides an authentication credential with the approval to the authorising server. The authorising server verifies the authorising person via the authentication credential, and if verified, and the access request is approved, the network resource access request is approved and access is provided.

61 Mr Sanger submitted that the present invention has similarity with the invention of *Lookout* given that part of the contribution of the present invention lies in the arrangement of devices in a network. He also sought to differentiate the present invention from the judgement in *Lantana*, where there was considered to be no contribution in the arrangement of a local station, a remote station and a packet switched network – two computers connected via the internet, as summarised by Birss J, as he then was.

62 The present invention is not similar to the invention at suit in *Lookout*. The present invention relates to a barcode-based commodity transaction system and does not concern access control or security, for the reasons I have given above. For this reason, the analogy is not persuasive.

63 The judgment in *Lenovo*[11] was briefly referred to within the skeleton. It was given as an example of an invention within the field of commerce, and concerned the use of payment cards at a checkout. Mr Sanger quoted from the Manual of Patent Practice that the invention of *Lenovo* was held by Birss J, as he then was, to lead to a different physical interaction that was an effect that was not a computer program (nor a business method) and was technical in nature. However, in the judgment this new interaction, the fact that the user did not have to undertake any extra physical step when the customer uses their contactless cards, and the automatic nature of the splitting payment between at least two cards, was considered to solve a problem: that of card clash. The present invention solves no such problem and so the analogy is not well founded.

64 The approach taken by Mr Sanger is that outlined by Birss J, as he then was, in *Lantana (HC)* at paragraphs 16-17:

> *"16. The IBM decision T6/86 is significant as an example of what can be regarded as a technical contribution but I do not accept the argument put forward by Mr Beresford goes as far as he seeks to take it. The fact that in the IBM case the method of communication between programs and files held at different processors within a known network was held to be patentable in 1988 does not mean that any method of communicating between programs and files on different computers over a network necessarily involves a technical contribution today. The significance of the decision is that such a thing can involve a technical contribution, not that it always does or necessarily must.*
>
> *17. In his argument Mr Beresford conducted a thorough review of the numerous authorities on the issue of software patenting. I do not propose to engage with that review in this judgment. The general point being made suffered from the same problem as the argument about IBM T6/86 in that it was too broadly stated. Simply because it is possible to construct a generalised category which includes both the claimed invention in this case and a previous decision in which a claim was held to be patentable, does not*

[11] *Lenovo (Singapore) PTE Ltd v Comptroller General of Patents* [2020] EWHC 1706 (Pat)

help. It shows that such things can be patentable in some cases but does not show that the invention in this case is patentable."

65 What is critical is whether the present invention itself provides an actual contribution which lies outside of the excluded categories – is the actual contribution technical in nature?

66 Given that the actual contribution relates to a number of suitably programmed computers that interact to undertake a transaction with no technical contribution, there appears to be no doubt that the invention is excluded from patentability as a computer-implemented scheme, rule or method for doing business. While the invention may represent a better or improved method for conducting a barcode-based transaction, it is no more than this as there is no additional contribution that provides a non-excluded contribution. The actual contribution of the invention of claim 1 lies solely within the excluded category of a scheme, rule or method for doing business.

67 For completeness and as a check to the above conclusion, I will consider the *AT&T/HTC* signposts, especially as the invention is computer-implemented and Mr Sanger mentioned them during the hearing and previous correspondence between the applicant and the examiner largely addressed them.

68 Signpost i: whether the claimed technical effect has a technical effect on a process which is carried on outside the computer. The claimed technical effect of the present contribution relates to a transaction, and this does not have a technical effect on a process outside of the claimed computers. Mr Sanger's submissions regarding the *Google* or *Lookout* applications, satisfying the first signpost do not apply to the present contribution and the present invention.

69 Signpost 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. This is not applicable to the present invention – the invention is only concerned with the processing of a transaction and does not operate at an architectural level.

70 Signpost iii: whether the claimed technical effect results in the computer being made to operate in a new way. Like signpost ii, this is not applicable to the present invention. While the processes that the computers of the present invention perform may be new, the manner in which the computers operate is not changed. The computers are executing different programs, which does not satisfy this signpost.

71 Signpost iv: whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer. Again, this is not applicable as the present invention does not operate at a level within the computer where this is relevant.

72 Signpost v. Whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented. The problem of computer security may well be a technical problem, but the present invention does not address this: it would use pre-existing technology to keep the transaction system secure. The problem of false code fraud may also exist but the present invention provides no contribution to this

as it uses the technology of the applicant's own prior art and provides no further contribution. Likewise, exposure to the issue of fraud because of malicious code and malware at a mobile terminal is a problem, but the present invention adds nothing to human knowledge to address this. The present invention does not overcome or make any contribution to the perceived problems.

73 None of the signposts are of assistance to the applicant. The actual contribution of the invention of claim 1 also lies in the excluded category of a program for a computer.

Conclusion

74 The contribution lies in excluded matter as a computer-implemented business method with no technical contribution. The present invention is excluded from patentability as a scheme, rule or method of doing business, as such, and a program for a computer, as such.

75 I have considered the other independent claims but none appears to make any additional contribution over that of claim 1. These claims are also excluded patentability as a scheme, rule or method of doing business, as such, and a program for a computer, as such. The same is true of the dependent claims.

76 The application does not comply with section 1(2) as it relates to a program for a computer, as such, and/or a scheme, rule or method for doing business, as such. I therefore refuse the application under section 18(3).

GB2108142.7

77 The invention of GB 2108142.7 is defined using two fully independent claims, numbered 1 and 7. Claim 1 recites:

> *A transaction system implementing virtual currency rebate, comprising:*
>
> *a first mobile terminal, configured to publish a first barcode image, wherein the first barcode image corresponds to:*
> *commodity transaction information, the commodity transaction information required for a commodity transaction and corresponding to a commodity; and, user information identifying a recommender, the recommender being a user of the first mobile terminal;*
>
> *a second mobile terminal configured to acquire the first barcode image, decode the first barcode image to obtain coding information, and send the coding information to a first backend server;*
>
> *the first backend server in communication with the second mobile terminal, the first backend server configured to parse the coding information;*
>
> *wherein the barcode image is decoded and parsed to at least obtain the commodity transaction information and the user information;*
>
> *an O2O server in communication with the first backend server, the O2O server configured to obtain the coding information, to trace the recommender based on the user information,*

wherein the second mobile terminal is configured to generate a query instruction with respect to the commodity, and to send the query instruction to the O2O server;

wherein the O2O server is in communication with the second mobile terminal, is configured to receive the query instruction and to return a query result to the second mobile terminal;

wherein the second mobile terminal is configured to receive the query result and further to generate a request message for purchasing the commodity and send the request message to the O2O server;

wherein the O2O server is configured to receive the request message transmitted from the second mobile terminal, to generate an order based on the request message, and to send order information corresponding to the order to a third-patty server, and an ERP server of an enterprise selling the commodity; and;

wherein the third-party server is in communication with the first mobile terminal and the O2O server, configured to receive the order information and configured to distribute, based on the order information, a virtual currency corresponding to a rebate amount to the recommender.

78 Claim 7 of GB 2108142.7 recites:

A transaction system backend server configured to receive coding information corresponding to a barcode image obtained by a mobile terminal, the backend server comprising:

a barcode image parsing unit configured to parse the coding information to obtain commodity transaction information required for a commodity transaction and to obtain user information for identifying a recommender;

wherein:

the backend server is configured to communicate with an O2O server to provide the coding information to the O2O server enable the O2O server to trace a recommender based on user information.

Clarity

The law

79 The relevant section of the Act is s.14(5), the most relevant provisions of which are shown below:

14(5) The claim or claims shall –

(a) …

(b) be clear and concise;

(c) be supported by the description; and

…..

80 The objections made by the examiner relate to the use of the terms “O2O server” and “ERP server” within claim 1 of the GB 2108142.7 application. I have considered the points made by the examiner and the applicant’s agent and I decide that, in the context of the present application, the scope of these terms is clear enough for the skilled person to determine the scope of the claimed invention. The O2O server is

used to facilitate communication from an online environment to an offline environment – the ERP server of an enterprise selling the commodity, which will ultimately supply the commodity in the real or "offline" world. Likewise, the use of the term ERP server is considered to be clear enough for the skilled person to determine the scope of the monopoly. It is the server of the enterprise that supplies the commodity to the user of the second mobile terminal in claim 1 and has enterprise resource planning functions.

Excluded subject matter

The law

81 I have covered this in relation to GB2108141.0 above and for brevity I will not repeat it here. It was again common ground that the *Aerotel* approach should be followed and I will consider the steps below.

82 Although the subject matter of claim 7 is much broader in scope than that of claim 1, both the examiner and Mr Sanger have only discussed claim 1 in any detail. I will do the same.

83 The first step of the *Aerotel* approach is to construe the claim. Given my conclusion on clarity, I think that the O2O and ERP servers can be included in claim 1. I must then consider the terms of the claim to determine what they would mean to the skilled person.

84 I have construed "barcode image" as meaning a barcode, when understood broadly. This is consistent with the start of the description of the preferred embodiments at page 12 of the specification which states:

> *"In the present invention, the barcode image may be a one-dimensional code, a two-dimensional code or a multi-dimensional code, or optical lattice diagrams (constituted by light and dark light, ultraviolet light or infrared ray) unrecognizable or difficultly to be identified by naked eyes, as long as coding information corresponding to information related to services could be completely stored."*

85 The next point that requires consideration is the meaning of "publish a first barcode image". From the description this means "display", see the embodiment of Fig 10 described in pages 22-24 of the specification, upon which the claimed invention is partially based.

86 The term "commodity transaction information" is not used in the description. Instead, the term used is "commodity information" and is also used by the examiner and Mr Sanger in their correspondence. I will also use this term.

87 It should be noted that the barcode image is decoded at the second mobile terminal and parsed at the backend server. Given that the image is decoded, the image must contain encoded information. In the context of the present application, "parsing" appears to mean that a check of the coding rule or format of the decoded image is undertaken, although the specification is not clear in this respect and again, this is also found in the applicant's own prior art document, WO 2012/142937 A1 / EP 2701112 A1, discussed above. The claim and description is clear in that the commodity information and user information is derived from the first barcode.

88 In relation to the O2O server obtaining coding information and tracing the recommender, this requires some consideration. It implies that the O2O server obtains unparsed coding information but this does not appear to be disclosed in the specification as filed. Instead, the O2O server receives (or obtains) the commodity information and the user information from the first backend server which has a two-dimensional code parsing and verification module as found in the description of Fig 15 from pages 26 to 29 of the specification.

89 There is little mention of tracing or tracking the recommender in the specification as filed. The description of Fig 15 from pages 26 to 29 of the specification uses the term to help identify and reward a sales representative who obtains the order via an "offline channel" and also contains reference to the embodiment of Fig 10 described in pages 22-24 of the specification. These embodiments also do not categorically describe what the user information with respect the recommender is, but from the specification as a whole, the skilled person would understand it to mean information for uniquely identifying a mobile terminal since the user information can include the telephone number of the mobile terminal, the IMEI number of the terminal or a username and a physical address of an interface of the terminal, see pages 7 and step S840 with respect to Fig 9 spanning pages 20 & 21. The phrase "trace the recommender based on the user information" seems to mean "identify the recommender from the user information".

90 Claim 1 does not contain any reference to the third-party server receiving user information in order identify the recommender and so distribute the virtual currency rebate. This must be the case if the rebate is to be paid.

91 Therefore, I construe claim 1 as:

> A transaction system implementing virtual currency rebate, comprising:
>
> a first mobile terminal, configured to display a first barcode image, wherein the first barcode image corresponds to:
> commodity transaction information, the commodity transaction information required for a commodity transaction and corresponding to a commodity; and, user information identifying a recommender, the recommender being a user of the first mobile terminal;
>
> a second mobile terminal configured to acquire the first barcode image, decode the first barcode image to obtain coding information, and send the coding information to a first backend server;
>
> the first backend server in communication with the second mobile terminal, the first backend server configured to parse the coding information;
>
> wherein the barcode image is decoded at the second mobile terminal and parsed at the first backend server to at least obtain the commodity transaction information and the user information;
>
> an O2O server in communication with the first backend server, the O2O server configured to obtain the commodity transaction information and the user information from the backend server and to identify the recommender based on the user information,

wherein the second mobile terminal is configured to generate a query instruction with respect to the commodity, and to send the query instruction to the O2O server;

wherein the O2O server is in communication with the second mobile terminal, is configured to receive the query instruction and to return a query result to the second mobile terminal;

wherein the second mobile terminal is configured to receive the query result and further to generate a request message for purchasing the commodity and send the request message to the O2O server;

wherein the O2O server is configured to receive the request message transmitted from the second mobile terminal, to generate an order based on the request message, and to send order information corresponding to the order to a third-patty server, and an ERP server of an enterprise selling the commodity; and;

wherein the third-party server is in communication with the first mobile terminal and the O2O server, configured to receive the order information and user information and configured to distribute, based on the order information, a virtual currency corresponding to a rebate amount to the recommender.

92 In the skeleton, Mr Sanger provided his interpretation of the actual contribution, based upon the examiner's submitted actual contribution as follows, with emphasis added to Mr Sanger's additions:

> *A transaction system implementing a virtual currency rebate comprising:* ***creating a recommender barcode image comprising commodity information and recommender identification information,*** *acquisition of a barcode image published as a recommendation by a recommender from which (i) recommended commodity information and (ii) recommender information may be derived by decoding and parsing the barcode, the barcode being parsed by a backend server. The commodity information being used to purchase a commodity and the recommender information being used to* ***trace the recommender and*** *distribute a virtual currency rebate to the recommender.*

93 I am not convinced that this is an accurate representation of the actual contribution of claim 1, in light of the guidance provided in *Aerotel*. Whilst the above contribution attempts to summarise the claim, it does not mention where the majority of the functions of the claimed invention actually occur within the claimed invention. It is also entirely silent on the presence of the O2O server, the ERP server and the third-party server.

94 It also includes the creation or generation of the barcode image which is not part of the claimed invention. That means it cannot be part of the actual contribution. Mr Sanger also referred to this later in the hearing suggesting that the technicality of the present invention is derived in the formation and use of a new code that merges the information but does not impact the activities of the downstream customers. Mr Sanger submitted that what is clever about the invention is how the information is carried through the system.

95 Having read the specification, there is very little disclosure regarding how the barcode is to be generated apart from the fact that the coding information of the

commodity information may be "combined" with the coding information of the user information, see step S910 on page 21 of the specification, for example. How the barcode is actually generated and its format is left to the discretion of the skilled reader, using their common general knowledge. The same disclosure of the generation of a barcode from commodity information and user information is also found in the embodiment of Fig 14 of the applicant's own prior art, WO 2012/142937 A1 / EP 2701112 A1, discussed above, at step S945 of that document. For these reasons, there can be no contribution in the generation of the barcode itself even if it were included in the claimed invention.

96 I also note that the applicant's own prior art WO 2012/142937 A1 / EP 2701112 A1, in paragraph 83, also discusses how the two-dimensional code of the commodity, and the commodity information the code contains, can be used to drive sales and provide a rebate to an employee:

> *"The method in this embodiment can provide whole-staff direct-selling new sales channels and corresponding sales statistical analysis. As the two-dimensional code of the commodity contains information required by transaction management, manufacturers can make each employee in the company, for example, accountant in the finance department, become the company's direct salesman without changing the current sales mechanism. For example, commodity information includes channels, sales organizations, sales representatives, sales price, rebate percentage, and the like, each employee in the company can sell the two-dimensional code corresponding to the commodity information to friends and family, which thus can achieve e-commerce shopping. The backend server 4 can calculate rebate for each employee and make statistical analysis on sales of each channel."*

97 Given the guidance provided at paragraph 43 of *Aerotel*, the problem addressed by the invention and its benefits relates to the rewarding of sales-representatives or other recommenders to incentivise them to help a physical retailer – see page 27 of the specification. There are other beneficial effects of the embodiment of Fig 15 which are also described, but these are all commercial benefits that do not appear to have particular relevance to the claimed invention.

98 The invention works by utilising suitably programmed mobile terminals, a backend server, an O2O server, an ERP server and a third-party server, with suitable communication networks to provide a transaction system to provide a virtual currency rebate to a recommender. A first mobile terminal publishes a first barcode image which encodes commodity information and user information. A second mobile terminal acquires the first barcode image, decodes it to obtain coding information and sends it to a backend server. The backend server checks the coding information and extracts the commodity information and the user information via parsing and then transmits the extracted data to the O2O server. The second mobile terminal and the O2O server exchange a query instruction, a query result and a request message for the user of the second terminal to purchase the commodity. The O2O server then generates an order in response to the request message from the second mobile terminal and forwards this to the third-party server and the ERP server. The third-party server distributes a rebate amount of virtual currency to the recommender based upon the information received from the O2O server.

99 Whilst the invention uses two mobile terminals and four different servers, I am of the opinion that it does not constitute a patentable new arrangement of hardware. The

examples within the description of the mobile terminals are a mobile phone, personal digital assistant (PDA) or a tablet PC. These were standard in the art at the earliest date of the invention. Likewise, there is no suggestion that I can find, and no argument has been made that any of the servers comprise new hardware of themselves. In fact the agent's letter of 24 February 2022 does not dispute that the hardware is standard. I am also satisfied that the arrangement of these servers does not amount to a new arrangement of hardware. At the hearing, Mr Sanger directed me to the judgment of *Aerotel* and paragraphs 52 and 53 in particular. I have paid due attention to these paragraphs. However, I do not find the analogy to be persuasive. The invention in *Aerotel* related to a telephone system, with an earliest date of 1985, the routing of telephone calls within that system and the inclusion of a special exchange between conventional exchanges. In other patent applications considered by the courts with more recent earliest dates, such as Mr Macrossan's invention within *Aerotel* and that of *Lantana*, systems comprising suitably programmed computers connected via a network have been found to relate to excluded subject matter. I also note that in the later judgment of *Aerotel v Wavecrest*, the arrangement of hardware required in Aerotel's patent was found not to be new and the invention was found to lie in excluded subject matter. I am not convinced that there is an allowable contribution to be found in the described arrangement of hardware. Instead, the invention requires a network of suitably programmed computing devices which are themselves well known in the art.

100 Taking the above into account, I find the actual contribution to be:

> Utilising suitably programmed mobile terminals, a backend server, a O2O server, an ERP server and a third-party server, with suitable communication networks, to provide a transaction system to provide a virtual currency rebate to a recommender based upon a barcode image displayed on a first mobile terminal. A first mobile terminal publishes a first barcode image which encodes commodity information and user information. A second mobile terminal acquires the first barcode image, decodes it to obtain coding information and sends it to a backend server. The backend server checks the coding information and extracts the commodity information and the user information and then transmits the extracted data to the O2O server. The second mobile terminal and the O2O server exchange a query instruction, a query result and a request message for the user of the second terminal to purchase the commodity. The O2O server then generates an order in response to the request message from the second mobile terminal and forwards this to the third-party server and the ERP server. The third-party server distributes a rebate amount of virtual currency to the recommender based upon the information received from the O2O server, such that the mobile terminals and servers ensure that the sales representative acting as the recommender is correctly identified and rewarded for initiating a purchase by the user of the second mobile terminal.

101 I must now ask whether the contribution falls solely within the excluded subject matter and check whether the contribution is actually technical in nature.

102 As with the '140.1 application above, at the hearing Mr Sanger used the *AT&T* signposts, together with the judgments in *Merrill Lynch* and *Lenovo*, and the Hearing Officer decisions in *Lookout* and *Google* to support his view that the invention does provide a technical contribution. Mr Sanger considered that the invention satisfies

both AT&T signposts i) and v) and relates to a specific solution to a technical problem encountered when implementing a barcode-driven transaction system implementing a rebate, rather than a general way of automating a business process, such as trading, as in *Merrill Lynch*. More specifically, the contribution relates to the specific, technical solution of encoding recommender identification information into barcodes.

103 With respect to the first signpost, it was submitted that "the effect produced by the invention is to solve the problem of how to trace and reward recommenders in a barcode-based commodity transaction system." For "trace", given my construction of the claim, I substitute "identify", which means that the effect produced by the invention is to solve the problem of how to identify and reward recommenders in a barcode-based commodity transaction system. The submissions also refer to the problem to be solved, which seem to relate to the fifth, rather than the first, of the signposts and I will deal with these arguments there. I feel must refer back to the wording of the signpost:

> *i. whether the claimed technical effect has a technical effect on a process which is carried on outside the computer;*

104 Does the claimed invention, and its contribution, have a technical effect on a process which is carried on outside the computer? No, it does not. The effect, or result, of the invention is the payment of a virtual currency rebate to the recommender. This is not a technical effect – it is a payment.

105 In relation to the fifth signpost, submissions were made that the invention is specifically concerned with how to identify and trace recommenders in an electronic, barcode-image driven commodity transaction system and that this is technical in nature – a technical problem is being solved.

106 I am not convinced that this is actually the case. Although the invention involves the identification of a person, or terminal, from a barcode or barcode image, this is not what the present invention has contributed– the problem of how to identify a person or terminal from a barcode that also provides commodity information is solved in the applicant's prior art. The present invention adds nothing to this and merely uses the earlier solution in a different process. This means that a general problem regarding the identification of a user or mobile terminal using a barcode image is not actually overcome by the present invention. The specific problem solved by the invention, as Mr Sanger submitted, is the identification of a recommender in a barcode image-driven commodity transaction system, which relates to a business problem. For this reason the fifth signpost does not assist the applicant.

107 Mr Sanger also submitted that the encoding and carrying forward of the user information from the first mobile terminal to the O2O server and then to the third-party server, via the second mobile terminal, was fundamentally technical in nature. I am not convinced that this is quite the question to be asked as part of the *Aerotel* approach which requires analysis of the actual contribution. The encoding of user information within a barcode is known from the applicant's prior art application, as mentioned above. Passing information through a computer system, once it has been extracted, does not represent a technical contribution as it is standard in computing networks at the date of the invention. This line of argument is not persuasive.

108 For the same reasons as for GB 2108140.1, I am not convinced that any of *Lenovo*, *Google* or *Lookout* provide me with any persuasive guidance in relation to the present invention: these decisions related to very different inventions and different problems to the present invention. Again, I am of the opinion the Mr Sanger is attempting to use the approach taken by Mr Beresford outlined by Birss J, as he then was, in *Lantana* at paragraphs 16-17 (as set out above).

109 In the skeleton arguments, two further points were raised. The first is that there can be a technical effect in the arrangement and interaction of computing devices – even if those devices are known individually. It is submitted that the present invention is a novel arrangement of mobile terminals and servers having specific functions and interactions configured to solve a technical problem. The starting position is settled law – but it requires consideration of the interaction, the problem addressed and the advantages or benefits of the invention, as mentioned in *Aerotel*. However, the present invention does not solve a technical problem – it solves a business problem in a specific business system.

110 The second point is that the problem relates to security. No further comments were made in relation to this either within the skeleton or the hearing. This point appears to be a replica of a submission made with respect to GB 2108140.1. I have briefly considered this, but I cannot see that there is any security advantage in the present invention.

Conclusion

111 The contribution, and the invention of claim 1, lies in excluded matter as a computer-implemented business method with no other technical contribution. The invention of claim 1 is excluded from patentability as a scheme, rule or method of doing business, as such, and a program for a computer, as such.

112 Finally, I note that claim 7 essentially defines the functions of the first backend server from claim 1. The invention of this claim provides no further contribution to the art over and above that found in the system of claim 1. It is also excluded from patentability under section 1(2) as a computer-implemented business method with no technical contribution. None of the dependent claims contains any matter that provides a technical contribution.

113 In conclusion, the present invention is excluded from patentability as a scheme, rule or method of doing business, as such, and a program for a computer, as such. The application does not comply with section 1(2). I therefore refuse the application under section 18(3).

Appeal

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

J Pullen

Deputy Director, acting for the Comptroller