Intellectual Property Office

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16 July 2024

PATENTS ACT 1977

APPLICANT	Beijing Bytedance Network Technology Co., Ltd
ISSUE	Whether patent application GB2205367.2 complies with Section 1(2) of the Patents Act 1977
HEARING OFFICER	Nikki Dowell

DECISION

Background

1 This decision relates to the issue of whether patent application GB2205367.2 ("the application") meets the requirements of section 1(2) of the Patents Act 1977 ("the Act") and, in particular, whether the claimed invention consists of a program for a computer and/or the presentation of information as such.

2 The application is titled "User interface presentation method and apparatus, computer-readable medium and electronic device" and is the GB national phase application of PCT/CN2020/116919, published as WO2021/057738 by the International Bureau and republished as GB2604253 by the IPO.

3 The PCT application was searched in the international phase and an International Preliminary Report on Patentability (IPRP) was issued by the International Bureau in March 2022. This report identified a prior art document which it argued demonstrated that the claims, while novel, were not inventive.

4 The first examination report in the national phase (dated 14 February 2023) used the citation found in the international phase (CN106095437) as the basis for an inventive step argument against all claims. The claims were also objected to as being excluded as a computer program and the presentation of information as such. The search was completed at this point.

5 After several rounds of correspondence, the examiner and attorney were unable to reach a consensus on whether the claims relate to excluded matter and therefore, on the 6 March 2024 the examiner offered the applicant a Decision by a Hearing Officer and set out the matter to be decided in full. While the case was awaiting hearing, a further citation EP1221650B1 came to light which the examiner used to demonstrate the claims were not inventive, as described in the letter dated 15 April 2024.

6 The claims were therefore further amended on 8 May 2024, and while they were considered to be distinguished over the disclosure in the above citation, they were still considered to relate to excluded subject matter, namely a computer program and the presentation of information "as such" and therefore the application came before me for a decision at a hearing.

7 The hearing took place by video conference on 23 May 2024. The applicant was represented by attorney Mr James Prankerd Smith of Dentons, to whom I am grateful for submitting detailed skeleton arguments.

8 The prescribed period for putting the application in order, referred to in Section 20 of the Act and defined by Rule 30 of the Patents Rules 2007 (as amended), ended on 27 March 2024. The period was extended under Rule 108(2) of the Act to 27 May 2024. At the hearing I highlighted that the extended Section 20 period would expire on the 27 May 2024 and noted that the period can be further extended under Rule 108(3) of the Act retrospectively up to the 27 July 2024, with the comptroller's discretion, by filing a F52 and the corresponding fee. Further extensions may also be available if needed.

9 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

10 The invention relates to performing mirror flipping of a user interface which is said to allow ease of browsing for users who are more comfortable browsing from right to left (for example, those used to reading Arabic or Hebrew). Typically, user interfaces are set up for languages, such as English and other European languages, which are read from left to right. Therefore, it is required to perform RTL adaptation on a device display to make them suitable for users who are more comfortable using this method of browsing.

11 The applicant has identified that while methods for doing this exist, typically only some elements of a display are automatically adapted, with elements such as sliding buttons requiring further rewriting of codes and a restart of the application program to display the user interface according to the RTL adaptation.

12 To further explain the invention, Figure 2A shows an example user interface containing a phrase in English (10A), the same phrase in Arabic (20A), navigation icons (50A, 60A, 70A) and icons and text relating to applications (30A, 80A and 40A, 90A). The axis of symmetry, around which the mirror flipping is undertaken, is indicated by 100A. Individual elements may be further categorised as a parent or child element. A child element will 'inherit' categories from a parent element and therefore if the parent is identified as an element to be restored to its original direction the parent and child elements will be flipped together as one target element.

13 The first step of the method is to flip the user interface around the axis 100A, which results in all elements being a mirror image of what was originally displayed in the

user interface. This is the ‘first interface’ as defined in the claims. At this point, it is determined if each element needs to be flipped back to its original direction, with child elements inheriting this property from the parent element. Axes of symmetry for each element to be restored are identified and flipped accordingly, which results in the second interface as is shown in Figure 2D. Comparing side by side, the result of working the invention can be seen below.

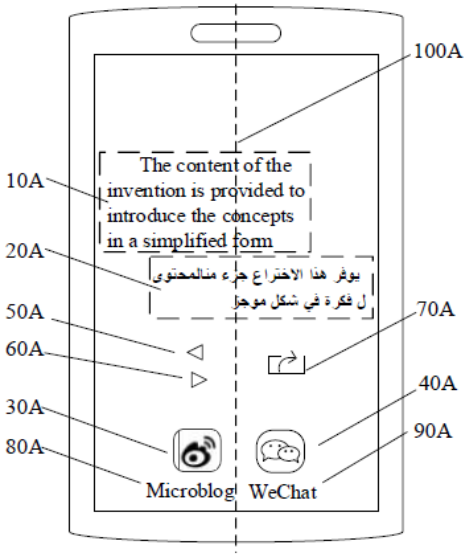

Figure 2A

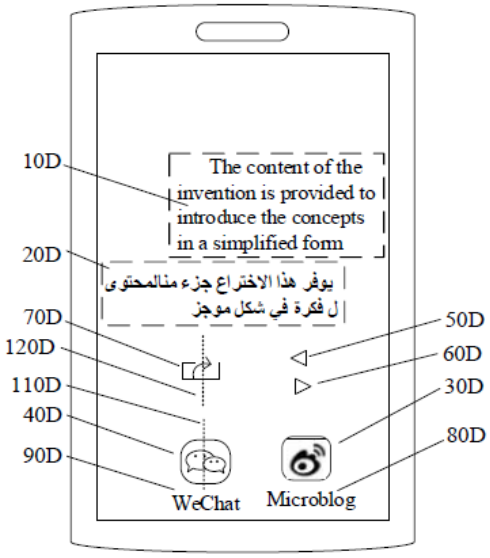

Figure 2D

14 The invention is defined in the latest set of claims filed on 8 May 2024. Independent claim 1 is a method claim while independent claim 7 is an apparatus claim for performing the steps of claim 1. Therefore, the claims will stand or fall together. This is consistent with the view that the attorney has put forward in the skeleton argument. Claim 1, as amended, reads:

> 1. A method for displaying a user interface, comprising:
> performing mirror flipping on a user interface around a symmetry axis of the user interface to obtain a first interface, wherein the first interface comprises: a first parent element; and a first child element;
> determining a first target element in the first interface, wherein the mirror flipping of the user interface around the symmetry axis of the user interface results in the first target element being in reverse display relative to a display screen, wherein the first target element comprises one or more elements that should be always in forward display relative to the display screen according to reading habits of users, and wherein a direction of the first target element in the reverse display is opposite to a direction of the first target element in the forward display; wherein the first target element comprises: a text element and a first icon element, and the first icon element is an icon without a direction indicator, and

wherein determining a first target element in the first interface comprises:

determining that the first child element belongs to an inherit category; and

determining the first child element as the first target element in a case that the first parent element is the first target element;

performing mirror flipping on the first target element in the first interface around a symmetry axis of the first target element to obtain a second target element and then obtain a second interface;

and displaying the second interface.

The law

15 The examiner has raised an objection that the invention is not patentable because it relates to one or more of the categories of subject-matter which are not considered to be inventions under the Act. This 'excluded matter' is set out in Section 1(2) of the Act:

> *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 whatsoever;*
>
> ***(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.* [my emphasis]

16 The Court of Appeal's judgement in *Symbian*[1] tells us that in order to determine whether an invention falls solely within the any of the exclusions listed in section 1(2), the four-step test set out in its earlier judgement in *Aerotel*[2] must be used. The four steps are:

> *(1) properly construe the claim(s);*
> *(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 of Patents [2008] EWCA Civ 1066
[2] Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application [2006] EWCA Civ 1371

17 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. I shall consider whether the contribution is excluded alongside the question of whether the contribution is technical in nature, meaning I will consider the third and fourth steps of *Aerotel* together.

18 To assist in determining whether the contribution relates solely to a program for a computer, and therefore excluded, we use the signposts to technical contribution set out in *AT&T/CVON*[3] and by the Court of Appeal in *HTC v Apple*[4]. These 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.

19 These signposts are useful guidelines only, providing a list of some of the factors that can assist in determining whether a contribution may be technical. The examiner and agent also refer to the decisions in *Vicom*[5], *Q Software Global Ltd's Application*[6], *JDA Software Group Inc's Application*[7], *Gemstar*[8] and the EPO Guidelines on Presentations of Information[9],

Application of the Aerotel test

Step 1 – properly construe the claim(s)

20 For the purposes of applying the *Aerotel* test I shall refer to claim 1. However, as identified above, the claims will stand or fall as one.

21 The first step then is to construe the claim. There is no disagreement between the examiner or attorney in how the claim is construed and I find the claim to be generally clear.

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[3] AT&T Knowledge Venture/CVON Innovations v Comptroller General of Patents [2009] EWHC 343 (Pat)
[4] HTC Europe Co Ltd v Apple Inc [2013] EWCA Civ 451
[5] EPO Boards of Appeal Vicom Systems Inc T0208/84 [1987]
[6] Q Software Global Ltd's Application (BL O/120/11)
[7] JDA Software Group Inc's Application (BL O/386/12)
[8] Gemstar-TV Guide International Inc v Virgin Media Limited [2010] RPC 10
[9] EPO Guidelines Section G-11-3.7 Presentations of Information

Step 2 – identify the actual (or alleged) contribution

22 Paragraph 43 of *Aerotel* provides some guidance regarding the second step:

> *43. The second step – identify the contribution - is said to be more problematical. How do you assess the contribution? Mr Birss submits the test is workable – it is an exercise in judgment 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.*

23 The examiner and attorney agree that the contribution is:

> *A method of flipping a user interface about a symmetry axis and then flipping elements of the flipped interface to form a second interface for display, wherein a first target element comprises a text and icon element, wherein the icon has no direction indicator (e.g. a video cover rather than a back button for example), wherein the child element belongs to an inherit category such that the parent and child share the same category and thus are flipped together.*

24 The attorney confirmed during the hearing that this was still considered to be the contribution even in light of the amended claims.

25 As helpfully summarised by Mr Prankerd Smith, the difference over the cited prior art is that previously individual elements would be identified and flipped, whereas in the present application the whole display is flipped, with only the required elements being flipped back again.

26 I agree that the above contribution is a fair representation.

Steps 3 & 4 – ask whether the contribution falls solely within the excluded subject matter and check whether it is actually technical

Program for a computer

27 There is no doubt that the invention is to be implemented as a computer program. However, this is not the end of the matter. I must now determine whether the invention relates to a computer program as such, or whether the identified contribution provides a technical effect. I will now consider each of the *AT&T* signposts in turn, to see if they point towards the required technical effect.

i) whether the claimed technical effect has a technical effect on a process which is carried on outside the computer

28 The examiner is of the opinion that there is no technical process carried on outside of the computer by the invention. They put forward that flipping specific parent and child icons and textual elements of a user interface is a method entirely within a computer and does not have a technical effect on a process outside of the computer.

29 The examiner has referred to the EPO Guidelines on Presentations of Information, and in particular G-11-3.7 to support their view. In summary, the examiner has

argued that the contribution *"merely accommodates subjective user preferences",* in which case the effect is deemed not technical.

30 The attorney also referred to the EPO Guidelines on Presentations of Information and considers that the effect can be considered "*a manner of presenting information produces in the mind of the user an effect which does not depend on psychological or other subjective factors but on physical parameters which are based on human physiology and be precisely defined, that effect may qualify as a technical effect".*

31 The attorney provided further evidence with the skeleton arguments, in the form of scientific studies, that a user's reading direction (i.e. left-to-right or right-to-left) is not simply a matter of user preference but has an impact on user physiology and neurology, including spatial processing.

32 The core of the argument then, is whether the flipping of the user interface is considered to be based on user preference (as argued by the examiner) or to accommodate a need of the user (as argued by the attorney). From my understanding of the invention, the device could be worked by the user before the RTL adaptation – indeed that seems to be part of the point, that the flipping can occur while using the device – but that the user may find it more natural to use it in its flipped state. Turning to the original interface in Figure 2A and comparing it to the flipped interface in Figure 2D, I think whilst different users would prefer one or the other orientation all would be able to operate it in either. I do not find this argument persuasive that there is a technical effect.

33 The second argument provided by the attorney refers to *HTC v Apple* which confirms that user interfaces can fall within signpost (i), and especially draws attention to the passage at paragraph 54 *"At the other end, it interacts with the end user who touches the screen. This, too, is a process happening outside the computer*".

34 I do not doubt that in some cases details of user interfaces can provide the required technical effect and meet signpost (i). The passage referred to above specifically mentions the interaction with an end user touching a touch screen. In the present invention, that level of interaction is not present. Rather, working the invention presents the information in a different arrangement. The elements have been rearranged on the user interface. Therefore, the user interaction remains as it did before, with the difference limited to interacting with a different portion of the screen. I do not think this is indicative of a technical effect on a process which is carried on outside the computer.

35 The third argument is that the *AT&T* signposts do not require that the external process is explicitly stated within the claims (as per *Vicom*). Again, I agree with the principle put forward by the attorney but it doesn't apply in this case. I accept that implicit within claim 1 is an end user interacting with the user interface. However, in *Vicom* the effect outside the computer was the processing of a digital image (an inherently technical process) and that is what provided the necessary technical effect. Again, I do not doubt that in some cases details of how a user interacts with the user interface can provide the required technical effect, but it is not clear to me that the end user interaction in the present invention is technical in nature.

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

36 The examiner has set out that for signpost (ii) to apply, the effect needs to provide a benefit to any software program which runs on the system. In this case, they say the effect is dependent upon a particular data set, type of data or particular application.

37 In reply, the attorney has argued that the examiner has used too narrow an interpretation of “architecture” in relation to this signpost. It is further argued that architecture should be taken to refer to the generality with which a hardware or software component is used, and from this interpretation a user interface which can be considered to have a high level of generality, may be considered to be part of the architecture of the user interface.

38 In some senses both are correct - the user interface seen by the user includes aspects of application-level commands which instruct the underlying operating system functions & hardware what to display and where. However, I need to consider where the identified contribution operates within the present invention. There is no clear indication in the description whether the contribution operates at the architectural level (for example as part of an operating system) or at the application level. There is no description of how the flipping is performed or how interactions with flipped elements are handled that might lead the skilled reader to imply one or other. The contribution covers implementing the methodology at the application level. Therefore, I am not persuaded that the contribution operates at the level of the architecture and signpost (ii) does not apply.

iii) whether the claimed technical effect results in the computer being made to operate in a new way

39 No argument was advanced in the skeleton argument relating to this signpost and it was agreed during the hearing that it is not considered relevant to showing a technical effect. I agree that the computer is not 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

40 The examiner has argued that for this signpost to take effect, as formulated in *Symbian,* the computer *as a whole* must operate more efficiently and effectively and not just the individual program. In the present invention, the potential processor savings only come into effect when the user interface is being flipped. The computer is not a better computer, it merely performs less operations during those instances.

41 They referred to several office decisions in support of this view, such as *Q Software Global Ltd’s Application* and *JDA Software Group Inc’s Application.* In those cases, arguments that the programs therein required less processing power to run, or operated faster, and the system was therefore more efficient were not persuasive. In each case the program made more efficient use of the hardware and was not considered to meet the signpost as the system itself remained unchanged.

42 The attorney proposed during the hearing that the claimed method is quicker and more efficient as it requires fewer operations than previously. In the prior art, flipping is performed only once, to the individual elements that require it. In the present invention, the entire interface is flipped and only individual elements which require to be restored to their original direction are flipped again.

43 The attorney noted that signpost (iv) is derived from *Vicom* to demonstrate that an increase in processing speed is sufficient to meet this signpost. I would add that the signpost was subsequently reworded in *HTC v Apple* to its current form.

44 I agree with the examiner's argument. It is well established that a computer program that uses less hardware resources can not be considered to meet this signpost. Even if the flipping does make more efficient use of the hardware resources available, the computer itself is not more efficient. A similar argument applies to the speed of processing, the flipping may operate quicker, but the computer itself is not.

v) whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented

45 The examiner has argued that the problem being addressed relates to allowing a user to accommodate their subjective preferences. It is agreed that the problem is solved, but they say the problem itself is not a technical one.

46 The attorney has referred to the earlier arguments under signpost (i) to argue that the problem is in fact a technical one of accommodating users who may have different neurology and different spatial processing behaviours.

47 As I understand it the problem being addressed by the invention is that some users of an application developed for browsing and interacting with elements displayed left to right would prefer to browse and interact with elements displayed from right to left. The prior art identified by the examiner shows that this is a known problem that others have also sought to address. The contribution mitigates the problem by flipping the whole user interface and then flipping elements that should not be flipped to retain their correct orientation and provide an updated user interface. Also, the contribution is defined based on "reading habits" which is broader than could be said to be indicative of different neurology and different spatial processing behaviours and would encompass different user preferences. As I say above, the contribution covers implementing the methodology within an application. Overall, I do not think that the contribution overcomes a problem with the device; the problem, and its solution, lie in the application being displayed. The fifth signpost does not help the applicant.

48 Taking a step back and considering the contribution as a whole I am satisfied that it does not provide the required technical effect and is therefore excluded as a program for a computer as such.

Presentation of information

49 The examiner has also objected that the contribution is nothing more than the presentation of information as such referring to *Gemstar*, where it was found that there must be some technical effect beyond the information being presented for the presentation of information exclusion to not apply. In that case, a new user interface

was not considered to be a relevant technical effect and the examiner states that the same conclusion should apply here.

50 During the hearing, the attorney referred back to the arguments put forward in signpost (i) to indicate that working the invention does indeed result in a technical effect.

51 Weighing up the arguments, I find that the claimed method of flipping a user interface, with two flipping steps defined in terms of resulting intermediate and final appearance, does not provide a technical effect beyond the information being presented. Therefore, the contribution is also excluded as a presentation of information as such.

52 For completeness, I confirm that I have also considered the dependent claims and the rest of the specification as filed. I have been unable to identify anything which would render the contribution more than a computer program or the presentation of information as such.

Conclusion

53 Having considered all of the arguments provided in the skeleton argument and during the hearing, and all correspondence on file, I am of the view that the contribution made by the invention falls solely within the program for a computer and presentation of information exclusions.

54 I therefore find that the invention claimed in GB2205367.2 is excluded by Section 1(2) as a program for a computer and the presentation of information, as such. I therefore refuse the application under Section 18(3).

Appeal

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

Nikki Dowell

Patent Examination Group Head