

- 5 Specifically, the present invention relates to a pull-to-refresh undo command which may be activated by the user to restore the original content which was displayed prior to the pull-to-refresh action.
- 6 The information originally displayed is cached and, if this information is refreshed and then a pull-to-refresh undo command activated, the information is retrieved from the cache so that it can be displayed once again. The pull-to-refresh undo command corresponds to user interaction either with the original information displayed (if it is still displayed), an on-screen visual indicator which relates to the original pull-to-refresh command, or a different visual object which is displayed on the screen either when the original information is displayed or when new information is displayed.
- 7 The most recent claims were filed on 19 January 2022. Of the 13 claims, claim 1 is the only independent claim and reads:

1. A method of controlling a system comprising a computing device and a remote computing device, the computing device being communicatively coupled to the remote computing device via a data communications network, the method comprising:
 - transmitting, at the remote computing device, first content to the computing device via the data communications network;
 - receiving, at the computing device and via the data communications network, the first content;
 - causing, at the computing device, a touch-sensitive display of the computing device to display the first content;
 - at the computing device, caching the first content in memory of the computing device;
 - at the computing device, receiving first predetermined user input via the touch-sensitive display and interpreting the received first predetermined user input as a pull-to-refresh command;
 - at the computing device, in response to the receiving of the first predetermined user input via the touch-sensitive display:
 - initiating an operation to obtain second, different content for display on the touch-sensitive display; and
 - causing the touch-sensitive display to display a visual indicator associated with the obtaining of the second content;
 - at the computing device, receiving second, subsequent predetermined user input via the touch-sensitive display and interpreting the second predetermined user input as a pull-to-refresh undo command, the second predetermined user input corresponding to user interaction with:
 - the first content;
 - the visual indicator;
 - a first visual object that is displayed on the touch-sensitive display at the same time as the first content and/or the visual indicator, the first visual object being different from the first content and the visual indicator; and/or
 - a second visual object that is displayed on the touch-sensitive display at the same time as the second content, if the second content is displayed on the touch-sensitive display, the second visual object being different from the second content;
 - and
 - at the computing device, in response to the receiving of the second predetermined user input via the touch-sensitive display, causing the touch-sensitive display to display the first content, wherein said causing the touch-sensitive display to display the first content comprises retrieving the cached, first content from the memory of the computing device.

The Law

8 Section 1(2) of the Act states:

1(2) It is hereby declared that the following (amongst other things) are not inventions for the purpose of the Act, that is to say, anything which consists of-

- (a) a discovery, scientific theory or mathematical method;
- (b) a literary, a 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 program for computer**;
- (d) the presentation of information;

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

9 The provisions of Section 1(2) were considered by the Court of Appeal in *Aerotel*¹ when a four-step test was laid down to decide whether a claimed invention is excluded from patent protection:

- (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.*

10 It was stated by Jacob LJ in *Aerotel* that the test is a re-formulation of and is consistent with the previous “technical effect approach with rider” test established in previous UK case law. Kitchen LJ noted in *HTC v Apple*² that the *Aerotel* test is followed in order to address whether the invention makes a technical contribution to the art, with the rider that novel or inventive purely excluded matter does not count as a “technical contribution”.

11 Lewison J in *AT&T/CVON*³ set out five signposts that he considered to be helpful when considering whether a computer program makes a technical contribution. Lewison LJ reformulated the signposts in *HTC v Apple* in light of the decision in *Gemstar*⁴. The signposts are:

- i) Whether the claimed technical effect has a technical effect on a process which is carried on outside the computer.*
- ii) Whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run.*

¹ *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371

² *HTC Europe Co Ltd v Apple Inc* [2013] EWCA Civ 451

³ *AT&T Knowledge Venture/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

⁴ *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

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.*

Arguments and analysis

12 I will consider each of the *Aerotel* steps in turn in my analysis.

(1) Properly construe the claim

13 Claim 1 is directed towards a method of controlling a system and generally presents no construction problems. The system includes a computing device communicating with another remote device over a network. The computing device receives and displays content received from the remote computing device. The computing device has a touch sensitive display, enabling the user to input commands.

14 The 'pull-to-refresh command' is considered to be the action a user takes to refresh content displayed on the device, such as a gesture of dragging or pulling a finger on the touch-sensitive screen of the device, alternatively known as swiping down.

15 The claim refers to both a 'visual indicator' and a 'visual object', and these have different functions. The 'visual indicator' is used to indicate that new (second) content is being obtained following a pull-to-refresh command. The 'visual object', which may be in the form of a 'soft button', relates to an area of the display that, when interacted with by the user, provides an input command which causes the original information (first content) to be re-displayed.

16 It is not entirely clear whether the first content is stored in the cache memory of the user's device when it is originally requested or following a pull-to-refresh command but, for the purposes of this decision, it is sufficient the first content is cached at some point so that it can be retrieved following a pull-to-refresh undo command.

(2) Identify the actual contribution

17 Identifying the contribution in the second step of this test is critical and I refer to the following paragraphs in *Aerotel* for guidance:

"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."

18 In the present case the application has not yet been the subject of a search so I will identify the alleged contribution. In the field of smart mobile devices, the ability to refresh displayed content using a pull-to-refresh command in applications running on

such devices was well known at the date of filing of this application. It was also well known to use a cache memory to store information locally so that it can be more easily retrieved at a later time. These features are, in my view, part of the common general knowledge of the person skilled in the art at the priority date of this application.

19 The examiner identified the alleged contribution of the invention to be:

“An application running on a device wherein the application caches the current page such that when a pull-to-refresh command is given by a user and updated content is retrieved from the server, a button is displayed which when interacted with re-displays the cached content.”

20 Mr Russell took the view that the examiner has categorised the contribution too broadly. This is because the problem to be solved is not simply one of ‘undoing’ a pull-to refresh command and retrieving data from a memory such as a cache. The problem of retrieving previous content has already been solved in some way as was acknowledged by Mr Russell. He referred to the description which states *“Once updated content has been retrieved and displayed, it can then be difficult to locate the previously displayed content”*, especially when missed content includes interactive material. Mr Russell submitted that the problem to be solved is a more technical one and results in a more efficient and effective way of retrieving missed content.

21 Mr Russell suggested that the contribution is not limited to a software application but is, in substance, a ‘man machine interface’. He referred to an IPO decision, *Unanimous A.I. Inc.*⁵, paragraph 10, which states: *“...if the contribution can be defined in terms of an input device, then that is unquestionably technical. I do not need to go so far as to say that all inventions that relate to input devices are inherently technical...”*. Mr Russell submitted that there are some strong parallels between the invention in *Unanimous A.I.* and the present invention. Both involve systems comprising multiple computing devices and both, in Mr Russell’s view, define an input device making a technical contribution over the prior art.

22 I note however that the details of the invention in *Unanimous A.I.* are somewhat different from those of the present application. The present invention includes input means via interaction with the touch sensitive display, and a software application presenting on the display a ‘visual object’, as well as the ability to recognise a pull-to-refresh (swipe) input gesture, and provide a means for undoing that command. But the contribution made by the invention does not amount to a new way of making an input into a computer. Rather it uses existing input methods for a specific purpose. This distinguishes the present invention from that of *Unanimous A.I.*, where a collection of vector inputs from a plurality of users on respective computing devices in communication with each other over a network resulted in a new way of making an input into the computer. In the present case the contribution does not include a new way of making an input into the computer.

⁵ BL O/018/22 *Unanimous A.I. Inc.*

- 23 I accept Mr Russell's submission that the invention relates to providing a more efficient and effective way of retrieving the first content following a pull-to-refresh command. In substance I consider the alleged contribution to be:

"A method of improving retrieval of first content displayed on a computer display after such content has been changed or updated by a pull-to-refresh command, where the user subsequently makes a second input in the form of a pull-to-refresh undo command by interacting with the first content, a visual identifier associated with the pull-to-refresh command, or a visual object on the display, to undo the pull-to-refresh command and display the first content, the first content being stored in the computer's cache memory on receipt from a remote server and, on receipt of the second input, the first content being retrieved from the cache memory and displayed."

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

- 24 The Court of Appeal in *Symbian*⁶ ruled that the question of whether the invention makes a technical contribution must be addressed when considering the computer program exclusion, although it does not matter whether that takes place at step 3 or step 4. For convenience I will consider steps 3 and 4 together.
- 25 For inventions implemented as computer programs the *AT&T* signposts provide helpful pointers in determining whether such inventions make a technical contribution. Mr Russell considered the second and third signposts to be less relevant to the present invention but, for completeness, I will consider each signpost.

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

- 26 The *Lantana*⁷ judgment is often referred to in relation to this signpost. In paragraph 30 of *Lantana* Birss J (as he then was) said:

"I start by noting that this invention consists entirely of software running on a conventional computing arrangement. I use the term "computing arrangement" rather than computer because the applicant is at pains to point out that this system requires two computers connected by a "telecommunications network". So it does but at the relevant date (2008) two computers connected across the internet was an entirely conventional computing arrangement. The fact that two computers and the internet are required is not what makes a software invention patentable."

- 27 Mr Russell argued that the claimed computing device and remote computing device cannot be considered to be the "computer" of signpost i). If that were the case, then the "computer" would, in principle, encompass the claimed computing device and almost any internet-connected device in the world. I am not convinced that this necessarily follows as the nature of the "computer" depends on the specific facts of the case. In any case it seems to me that, following the guidance in *Lantana*, the "computer" for the purposes of this signpost is indeed, for the present invention, the

⁶ *Symbian Ltd v Comptroller-General of Patents* [2009] RPC 1

⁷ *Lantana v Comptroller-General of Patents* [2013] EWHC 2673 (Pat)

computing device and the remote computing device which are networked together. This is nothing in the invention to suggest otherwise and the fact that two computers and a network are required does not make the present invention patentable. The mere fact that the invention retrieves the first content from a local cache memory rather than from a remote device over a network does not provide a technical contribution on a process outside of the computer.

- 28 Mr Russell submits that, in any case, the invention does make a technical effect on a process outside of the computer, namely that, since the invention does not need to re-retrieve content from the remote computing device, less energy is required to re-display the first content. This in turn means that less energy is required from an energy source which would be “outside” the computer and there is a technical effect (e.g. on an energy generation process) which is carried on outside the computer. This seems to me to be relevant to signpost iv) as this signpost which deals with the question as to whether the computer is a better computer in terms of operating more efficiently or effectively as a computer. The energy source itself, and the way the energy is generated, are unchanged by the present invention. They operate in entirely conventional ways. The computer does not make any technical effect on an energy source or energy generation process outside the computer.
- 29 In the present case the claimed effect takes place entirely within the computer system comprising the computing device and the remote computing device connected via a network. The invention acts on generic data displayed on the screen and stored in the cache memory on the computing device and there is no effect on a process carried on outside the computer.

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

- 30 At the hearing Mr Russell confirmed that the application would need to have pull-to-refresh functionality in order for the invention to be applicable and so the effect wasn't entirely produced irrespective of the data being processed or the applications being run but was agnostic as to the content in the applications. Although the invention provides a tool that application developers could choose to implement, the effect does not operate at the level of the architecture of the computer. Rather, for relevant applications that display content and implement a pull-to-refresh command, the invention is implemented in the application itself. There is no suggestion in the specification that it operates at the architecture level. Rather the software developer would need to program the features of the invention into a specific application and specific data is required. The invention therefore operates at the application level rather than the architecture level.

Signpost iii) Whether the claimed technical effect results in the computer being made to operate in a new way; Signpost iv) Whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer

- 31 For convenience I will consider signposts iii) and iv) together. Mr Russell considered the technical contribution to be a “*more efficient and effective method of use of architecture to improve the reliability of retrieving content, and in doing so conserving*

both computer processing resources, latency, network communication bandwidth and customer experience.” I also note the comments he made in relation to signpost i) concerning using less energy. I understand the use of the local cache memory, which removes the need to re-retrieve data from the remote computing device, to contribute to these advantages.

- 32 The key questions here are whether the claimed technical effect makes the computer operate in a new way or makes the computer a better computer in the sense of running more efficiently and effectively as a computer. The computer program must therefore cause a change in the way the computer itself operates. The mere fact that a computer program uses less of the available hardware resources does not provide a technical contribution. This was confirmed by Lewison J in *Autonomy*⁸:

“The mere fact that a computer program reduces the load on the processor or makes economical use of the computer’s memory or makes more efficient use of the computer’s resources does not amount to making a better computer, and thus does not take it outside the category of computer program as such.”

- 33 In the present case the invention enables previously displayed content to be re-displayed following a user input with undoes a pull-to-refresh command. This happens entirely within the application program. The computer itself operates in the same way it always has done. I have found that the contribution is not a new input device, as was the case in *Unanimous A.I.* The computer only operates differently because of the way it is programmed when an application running on the computer has been programmed to implement the invention.
- 34 Mr Russell emphasised that efficiency savings arise from the invention’s retrieval of content from the computing device’s cache memory rather from a remote server, and also that the user experiences efficiency benefits by providing a simple way of initiating content retrieval. I note however that cache memories are often included in computing devices so that content can be retrieved more quickly. This is exactly the type of benefit generally arising out of the use of cache memories and the use of the cache in the present invention for the purpose for which it is commonly used does not make the computer operate in a new way or make the computer a better computer.
- 35 The benefits to the user experience arise out of the functionality built into the specific application program. These benefits arise out of the way the application has been programmed rather than any improvement in the computer itself, and the improvements are to the user experience rather than to the computer.
- 36 It therefore seems to me that the computer itself does not operate in a new way and is not a better computer in the sense of operating more efficiently or effectively as a computer. The invention does not make the computer operate in a new manner and does not improve the speed or reliability of the computer itself. Thus, signposts iii) and iv) have not been satisfied.

⁸ *Autonomy Corporation Ltd v The Comptroller General of Patents, Trade Marks & Designs* [2008] EWHC 146 (Pat), [2008] Bus LR D61, [2008] FSR 36, [2008] RPC 16, [2008] Info TLR 69 at [29(viii)]

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

- 37 The final signpost relates to identifying the perceived problem being solved by the invention and establishes whether the problem has been solved or circumvented. Following my identification of the contribution above, and considering Mr Russell's submissions on the nature of the problem, I take the problem being addressed as:

“Improving a method of retrieving missed content as a result of a pull-to-refresh input which refreshes that content.”

- 38 Mr Russell argued that the current invention as claimed does not circumvent the problem but rather solves it. He contrasted the way the present invention works with examples of solutions which would, in his view, be a circumvention of the problem, such as a solution which disables the pull-to-refresh command altogether, or where a user has to confirm a pull-to-refresh input before the input is actioned. In contrast the present invention does not require such mechanisms but provides a simple method for the user to undo the pull-to-refresh command.
- 39 I agree that the present invention provides an improved method for retrieving the missed content, namely by providing a pull-to-refresh undo command and means for the user to activate that command, whereby the content is retrieved from the cache memory following the undo command. I am not however convinced that this problem is a technical problem. Rather it seems to me that the problem relates to the way a computer program displays content to the user and provides for users to re-display content following a command to refresh that data. Moreover the solution does not involve any technical implementation relating to the computer or the network, for example in the way the data is stored or transmitted, but rather relates to the way the computer is programmed to provide user interactions to retrieve the missed data.
- 40 Furthermore any problem which could be formulated in relation to reducing processing requirements and/or bandwidth requirements, which, as Mr Russell set out at the hearing, arise from the original content being retrieved from local cache following the pull-to-refresh undo command rather than from the server, is not solved by the present invention by improving the computer or the network. Rather a standard computer is programmed to operate in a different way, namely by the application program offering a pull-to-refresh undo command to retrieve content from a local cache memory, the use of cache memory to retrieve data more quickly being commonplace in many applications. Therefore, the fifth signpost does not indicate that the program provides a technical contribution.
- 41 Mr Russell also supported his arguments by referring to the Court's judgment in *Lenovo*⁹. He submitted that, in *Lenovo*, the invention was allowable because it reduced the number of potential user interactions with a computing device, and that similar arguments apply in the present case where the amount of user interaction required to recover refreshed data is reduced. Although I understand Mr Russell's assessment of the parallels he has drawn between his invention and that of *Lenovo*, I note that the inventions themselves relate to very different problems and provide

⁹ *Lenovo (Singapore) PTE Ltd v Comptroller General of Patents* [2020] EWHC 1706 (Pat) (09 July 2020)

very different solutions. *Lenovo* related to eliminating a button press in a contactless payment system where the payment is split across multiple payment cards, thus making such payment automatic. It was the specific removal of this button press so that the way the payment was split across cards was automatic which made a technical contribution. In the present case the invention does make it easier to retrieve content which was displayed prior to a swipe-to-refresh command but does not specifically remove a button press as was the case in *Lenovo* and does not result in an automatic action. In paragraph 26 of the judgment Birss J said:

*“The key question in this case is whether the invention involves a different physical interaction with the world outside the computer, as compared to what had gone before. As I have said already, I would agree with the reasoning at the end of paragraph 26 if the technical effect relied on resided in pressing a button in a computer system because that is a conventional feature of using conventional computer systems. Those features may be technical in a sense, but they cannot add technical character to make a computer program as such patentable. However, again as explained above, the point of this invention is the opposite. It is in US 438 that the user has to press a button to choose which card to use or to split the payment between two cards. In the *Lenovo* invention, this is handled automatically at the point of sale because the user's preferences have already been acquired and stored elsewhere. The automatic nature of the process is recognised in the formulation of contribution identified in the decision at paragraph 21. As a result of this automatic feature, the card clash problem experienced with contactless payment cards is solved without the user having to take any extra physical step at the point they use their contactless cards. In my judgment that difference is an effect of the invention which is neither a computer program as such nor a method of doing business as such nor a combination of the two. That difference is technical in character and, in the context of the invention as a whole, it is not just one of the normal incidents of a conventional computer system. The claimed invention may or may not be obvious over US 438, or any other prior art, but what would counts for s1(2) of the 1977 Act / Art 52 EPC is that the invention does have an effect which is of the right character to satisfy the law.”*

- 42 It is apparent from this paragraph that *Lenovo* was decided based on the very specific facts and context of that case and the problem being solved in relation to making payments split across payment cards. Care must be taken in drawing too many parallels between cases and I believe that, given the contribution I have identified above in the present case, *Lenovo* does not assist matters. *Lenovo* was considered under signposts i) and v). In the present case there is not an analogous effect outside of the computer and nor is a technical problem solved with a technical solution.
- 43 Another argument made by Mr Russell was that the inventor in the present case would be a technical person rather than a non-technical person, and also that the specification was addressed to such persons, which in his view gave weight to the invention making a technical contribution. I am not however convinced that this is necessarily the case. The problem of losing content following a pull-to-refresh command would be well understood by non-technical people and the solution, to provide a means for the user to select a pull-to-refresh undo command, would also be well understood. There is a little more technicality in the use of the cache memory, but it would be straightforward for a software developer to implement this invention without needing to talk to, for example, a hardware engineer, and the

principle of storing content locally so that it is easier to retrieve rather than needing to retrieve it over a network is a relatively straightforward concept. I am not therefore convinced that this argument points to the presence of a technical contribution.

- 44 Mr Russell also submitted that the EPO Guidelines for Examination also pointed to the presence of a technical contribution in the present claimed invention. In particular in Part G-II, 3.7.1 (“User interfaces”) the Guidelines state that features defining user input are more likely to have a technical character than those solely concerned with data output and display, because input requires compatibility with the predetermined protocol of a machine, whereas output may be dictated by the subjective preferences of the user. They also state that features which specify a mechanism enabling user input such as entering text, making a selection or submitting a command, are normally considered to make a technical contribution. This may be the case but in the present case the contribution does not relate to a method of defining or enabling user input. The invention does not lie in the user interface itself but in the way the missed content is retrieved following a pull-to-refresh command. I do not therefore consider that these paragraphs of the EPO Guidelines assist matters.
- 45 Having considered all the signposts, none of them point to the contribution involving a technical contribution. Taking a step back, the key advantage of the invention is that it provides an easier way for a user to access content previously displayed on the display of a computing device before a pull-to-refresh command was activated by the user. Rather than the user needing to manually navigate back to that data in some sense, which may be complex in some cases, the user can activate the pull-to-refresh undo command in the manner defined in the claims. The advantage therefore lies in the computer program offering a simpler way for a user to view this data, an advantage which in my view lies solely in the excluded field of a program for a computer as such.

Conclusion

- 46 I have found that the claimed invention lies wholly in the excluded field of a program for a computer as such. I therefore refuse the application under Section 18(3).

Appeal

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

B Micklewright

Deputy Director, acting for the Comptroller