

customer. In conventional restaurants, when requesting a bill, customers usually need to attract a waiter which can take some time to do. There may also be a further delay before the waiter presents the bill. The application notes that one solution to this problem is to provide a large touch screen monitor plus PC embedded into each table top where the monitors are connected to the menu point of sale system that provides orders to the kitchen. However, such equipment is said to be costly, lack robustness, to be hard to keep clean and may seem visually “unnatural” to the user.

- 5 To address these issues, the invention provides a system which includes a computer controlled projector that projects images onto the surface of a table, the images including an image of an icon or button, that, when selected by a customer operating an interface device, causes a message to be sent to an electronic point of sale system (EPOS) to generate and, if desired, print a bill for that customer.

Claims

- 6 I have made my decision on the basis of the amended claims filed on 7 March 2011 and repeated in the skeleton arguments. These claims are supported by the disclosure in the parent application. There are 28 claims including 6 independent claims that fall conveniently into two groups. The first group comprises an interactive ordering and bill generating system (claim 1), use of the system (claim 23), method of operating the system (claim 24) and a computer program product for running the system (claim 25). The second group comprises claim 27 which claims the system of claim 1 and additionally includes a printer and claim 28 relates to a method of generating and printing a bill using the system of claim 27.

- 7 Claim 1 reads:

*An interactive food and/or drink ordering system including a table surface, an interface device,
a projector mounted above the table surface and operable to project images onto the table surface,
and a computer that controls the projector,
wherein the images include an image of an icon or button,
the image selectable by a customer operating the interface device to cause a message to be sent to an EPOS (electronic point of sale system) system, the EPOS system generating a bill for that customer in response to the message.*

- 8 Claim 27 reads:

*An interactive food and/or drink ordering and bill generating system including a table surface, an interface device,
a projector mounted above the table surface and operable to project images onto the table surface,
a computer that controls the projector,
and an EPOS (electronic point of sale system) system including a printer,
wherein the images include an image of an icon or button,
the image selectable by a customer operating the interface device to cause a message to be sent to the EPOS system, the EPOS system generating a bill for that customer in response to the message,*

and the EPOS system printing the bill on the printer.

The law

9 The relevant parts of section 1(2) read as follows:

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 performing a mental act, playing a game or 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.

10 It is not disputed that the assessment of patentability under section 1(2) is governed by the judgment of the Court of Appeal in its judgment in *Aerotel/Macrossan*². In this case the court reviewed the case law on the interpretation of section 1(2) and approved a four-step test for the assessment of patentability, namely:

- 1) Properly construe the claim;
- 2) Identify the actual contribution;
- 3) Ask whether it falls solely within the excluded matter;
- 4) Check whether the contribution is actually technical in nature.

11 The operation of the test is explained at paragraphs 40-48 of the judgment. Paragraph 43 confirms that identification of the contribution is essentially a matter of determining what it is the inventor has really added to human knowledge, and involves looking at substance, not form. Paragraph 47 adds that a contribution which consists solely of excluded matter will not count as a technical contribution.

12 The interpretation of section 1(2) has been considered by the Court of Appeal in *Symbian Ltd's Application*³. *Symbian* arose under the computer program exclusion, but as with its previous decision in *Aerotel/Macrossan*, the Court gave general guidance on section 1(2). Although the Court approached the question of excluded matter primarily on the basis of whether there was a technical contribution, it nevertheless (at paragraph 59) considered its conclusion in the light of the *Aerotel* approach. The Court was quite clear (see paragraphs 8-15) that the structured four-step approach to the question in *Aerotel/Macrossan* was never intended to be a new departure in domestic law; that it remained bound by its previous decisions, particularly *Merrill Lynch*⁴ which rested on whether the contribution was technical; and that any differences in the two approaches should

² *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371

³ *Symbian Ltd's Application* [2008] EWCA Civ 1066

⁴ *Merrill Lynch's Application* [1989] R.P.C. 561

affect neither the applicable principles nor the outcome in any particular case. But the *Symbian* judgment does make it clear, that in deciding whether an invention is excluded, one must ask does it make a technical contribution? It does not matter whether it is asked at step 3 or step 4. If it does, then the invention is not excluded.

Application of the Aerotel test

Step 1: Properly construe the claims

- 13 I do not think this presents any problems. There are no difficulties of construction: the claims are clear and there has been no dispute regarding their meaning.

Step 2: Identify the actual contribution

- 14 Paragraph 43 of Aerotel explains the contribution is to be determined by asking what it is – as a matter of substance not form – that the invention has really added to the stock of human knowledge having regard to the problem to be solved, how the invention works and what its advantages are.
- 15 The applicant's position is that the contribution is the provision of an interactive food and/or drink ordering system including a table surface, an interface device, a projector mounted above the table surface and operable to project images onto the table surface, and a computer that controls the projector, wherein the images include an image of an icon or button, the image selectable by a customer operating the interface device to cause a message to be sent to an EPOS (electronic point of sale system) system, the EPOS system generating a bill for that customer in response to the message. The applicant's view is that all of the integers of claim 1 are necessary for identification of the context of the invention and hence the contribution of the invention. With regard to claim 27, the applicant states that the contribution includes the further step of the EPOS system printing the bill on the printer.
- 16 Although no search under section 17 has been carried out for the present application, US2005/185825A1 (HOSHINO) represents close prior art and was cited in the prosecution of the parent application GB0724312.4. The document is also acknowledged in the applicant's skeleton arguments on this application. HOSHINO shows an information display terminal comprising a table on to which surface is projected images comprising a menu of options. The table is touch-sensitive and the user can select the desired option by pointing a fingertip. HOSHINO differs from the current system in that the projector is mounted below the table and there is no disclosure that the terminal interacts with a point of sale device or can generate/print a bill.
- 17 Interactive ordering systems are also known. For example, in the description of the prior art provided in the present application, a system is described as follows:

Description of the Prior Art

There is considerable pressure on restaurants to increase the speed and reliability with which orders are taken and also the speed at which a bill ("check" in US English) is presented to a customer after requesting. One approach to addressing

this problem is to provide a large touch screen monitor plus PC embedded into each table top. The monitors are connected to the menu point of sale system that provides orders to the kitchen. But the tables are very costly and the combined screens/tables can be damaged if the table is knocked.

The glass (or acrylic) tops of these tables also have to be thick, making the tables very heavy and hence difficult to move – a problem in many restaurant environments, especially for cleaning. Another problem with touch screen displays with very thick glass is that the actual display surface can be several mm away from the top surface – introducing a barrier and related parallax effects, which can make the process of using them seem unnatural. A further problem is that providing power and data cabling to tables in a restaurant can be very costly.

- 18 So what *in substance* has been added to the stock of human knowledge? Both the computer hardware and the software used in the claimed system appear conventional as do the other elements such as the projector and EPOS machine. In particular, it is well known to project images or icons on to a surface and for a user to use an interactive device to select an icon to cause a message to be sent to another computer-based application. A typical example might be a speaker in the course of a presentation using a mouse pointer to click on an icon projected on to a screen to open another application. In addition, ceiling-mounted projectors are known and EPOS machines conventionally generate and print bills.
- 19 I must confess I am therefore struggling to identify exactly where the contribution lies. However, as far as I can see, the contribution appears to lie in the computer program which causes the message sent by customer and the EPOS machine generating a bill in response to that message (claim 1). With regard to claim 27, I cannot agree that the contribution lies in the printing process since it is clear from the application that the bill is generated and printed using a conventional EPOS machine. I therefore find that the contributions for claims 1 and 27 are the same.

Steps 3 and 4: Ask whether the contribution relates solely to excluded matter and check whether it is technical

- 20 So, does the contribution fall solely within the excluded subject matter? In considering the nature of this contribution, I am mindful of paragraph 22 of *Aerotel/Macrossan*, which reminds me that just because a computer is used in an invention, it does not necessarily mean that the invention is excluded from patentability. The Court of Appeal in *Symbian* gave useful guidance at paragraphs 52-58 as to when a program might make a technical contribution sufficient to avoid the exclusion. It particularly emphasised (see paragraph 56) 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”. At paragraph 58 the Court stated that a technical innovation, whether within or outside the computer, would normally suffice to ensure patentability.
- 21 With regard to claim 1, the applicant states that the contribution “does not fall solely within excluded matter as it includes the provision of an interactive food and/or drink ordering and bill generating system including a projector mounted above a table surface, wherein a customer causes a bill to be generated”. This,

he argues, takes the contribution beyond excluded matter as such as it is technical in nature. Likewise, he argues that the contribution made by claim 27 does not fall solely within excluded matter as it “includes the provision of an interactive food and/or drink ordering and bill generating system including a projector mounted above a table surface, wherein a customer causes a bill to be generated and printed by the system”. Although this point was not argued in any detail at the hearing, it would therefore appear that the applicant is saying that the contribution goes beyond excluded matter as such because something tangible i.e. the printed bill, is created and that this is sufficient to provide the required technical effect.

- 22 Whilst I agree that the invention is technical in the broadest sense in that it involves a computer, the enquiry is whether the contribution relates solely to excluded matter and whether it is technical or not. On this occasion however, I am clear that the contribution made by the invention does relate to excluded matter as such and does not have a relevant technical effect. Furthermore, I do not believe that the present invention provides a technical contribution of the type found in *Symbian*. In particular, a computer with the program of the present application does not provide, as a matter of practical reality, a “faster and more reliable computer”.
- 23 Having reached this conclusion I derive further reassurance from looking at the five “signposts” that may indicate that there is a relevant technical contribution, as set out by Lewison J in *AT&T/CVON*⁵:

It seems to me, therefore, that Lord Neuberger's reconciliation of the approach in Aerotel (by which the Court of Appeal in Symbian held itself bound, and by which I am undoubtedly bound) continues to require our courts to exclude as an irrelevant "technical effect" a technical effect that lies solely in excluded matter.

As Lord Neuberger pointed out, it is impossible to define the meaning of "technical effect" in this context, but it seems to me that useful signposts to a relevant technical effect 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 there is an increase in the speed or reliability of the computer;

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

- 24 With reference to the first signpost, Dr Bottomley argued that the technical effect was that an interface device was operable to make a selection of a projected

⁵ AT&T Knowledge Ventures LP and CVON Innovations Limited [2009] EWHC 343

image on a table surface to cause a message to be sent to an EPOS, the EPOS generating a bill in response to the message. The invention therefore changed the process of generating a bill from having to wait to attract the attention of service staff to generating the bill on demand at the customer's instigation. This process was outside the computer and the effect was technical in that the process of bill generation was speeded up. Dr Bottomley also referred me to *Gemstar*⁶ to support his view that the transfer the information from the interface to the EPOS machine to generate the bill was technical although he did not elaborate on this point. I disagree with the applicant. In my view the contribution does not have a technical effect on a process outside the computer; it merely issues a request for a bill to be generated. As made clear in paragraph 43 of *Gemstar*, the mere display of information or the presence of an interface is not considered sufficient to provide a technical contribution. The inclusion of additional conventional peripheral hardware such as a printer would not influence this conclusion. Therefore, the first signpost of technical effect is not satisfied.

25 Secondly, the contribution does not operate at the level of the architecture of the computer; it does depend on the data being run, namely the inputting of a request for the bill from a user. Thirdly, the contribution does not result in a better computer; the computer merely operates in a standard way implementing an interface and processing a user input to it. Fourthly, the contribution does not produce a more reliable computer, it merely provides a convenient means to order a bill with no effect on the reliability or otherwise of the computer implementing the interface.

26 With reference to the fifth signpost, Dr Bottomley argued that the invention overcame the problem of possibly taking a long time to generate and print the bill; it did not merely circumvent the problem. In my view, the contribution merely facilitates the ordering of a bill by making a request via a computer rather than via a waiter. Although it may enable this action to be done more quickly, I cannot see that computerising it overcomes any technical problem.

27 I conclude that none of the signposts indicate that the computer program provides a technical contribution. It therefore it falls at the third and fourth steps of the test.

Conclusion

28 I find that the invention is excluded under section 1(2)(c) because it relates to a program for a computer as such. I have carefully reviewed the specification but do not think that any saving amendment is possible. I therefore refuse the application under section 18(3).

Appeal

⁶ *Gemstar –TV Guide International Inc v Virgin Media Limited* [2010] RPC 10

29 Under the Practice Direction to Part 52 of the Civil Procedure Rules, any appeal must be lodged within 28 days.

MRS S E CHALMERS

Deputy Director acting for the Comptroller