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11 December
2006

PATENTS ACT 1977

APPLICANT Rockwell Firstpoint Contact

ISSUE Whether patent application number GB
0326767.1 complies with section 1(2)

HEARING OFFICER R C Kennell

DECISION

Introduction

- 1 This application is directed to a method and system for predicting transaction outcomes based on the monitoring and analysis of interactions between customers and agents in a customer contact centre, typically a telephone call centre, so as to enable the agent's advice to be tailored to a particular customer. It was filed on 17 November 2003, claiming a priority date of 15 November 2002 from an earlier US application, and was published under serial no. GB 2395321 A on 19 May 2004.
- 2 Despite amendment of the claims during substantive examination, the applicant has been unable to persuade the examiner that this is a patentable invention within the meaning of section 1(2) of the Act. This matter therefore came before me at a hearing on 16 November 2006. The applicant was represented by his patent attorney, Mr Keith Gymer of Page Hargrave, and the examiner, Mr Ben Buchanan, also attended.

The law and its interpretation

- 3 The relevant parts of section 1(2) (emphasis added) state:

"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**;

....

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

...

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.**"

- 4 Shortly before the hearing was due to take place, the Court of Appeal delivered its judgment in the matters of *Aerotel Ltd v Telco Holdings Ltd* and *Macrossan's Application* [2006] EWCA Civ 1371 (hereinafter "*Aerotel/Macrossan*"). In this case the court reviewed the case law on the interpretation of section 1(2) and (see paragraph 40 of the judgment) approved a new 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 actual or alleged contribution is actually technical in nature.
- 5 In a notice¹ published on 2 November 2006, the Patent Office stated that this test would be applied by examiners with immediate effect. It did not expect that this would fundamentally change the boundary between what was and was not patentable in the UK, except possibly for the odd borderline case. The examiner accordingly re-assessed his objection, but maintained it nevertheless, giving his reasons in a letter dated 13 November 2006.

Arguments and analysis

- 6 Following amendment the claims before me at the hearing comprised a single independent claim (claim 1) on which all other claims were dependent:

"Transaction processing apparatus for predicting transaction outcomes based on monitoring customer and agent interactions in a customer contact centre, in real time, comprising:

- a call distributor to route customer contacts to a selected transaction processing entity;
- an interaction monitor to extract and analyze selected attributes of customer and agent interactions, the interaction monitor including:
 - a call information server database for storing current and historical attributes;
 - an audio feature extractor to extract selected audio attributes of a customer and agent interaction, the selected audio attributes including at least one of pitch and intensity;
 - a simulator wrapper to organize the attributes by mapping out casual relationships among the attributes, to encode the attributes with numbers that represent the extent to which one attribute is likely to effect (*sic*) another attribute, and to determine an outcome probability for the interaction based on

¹ <http://www.patent.gov.uk/patent/p-decisionmaking/p-law/p-law-notice/p-law-notice-subjectmatter.htm>

analysis of the current attributes and an attribute history using a probabilistic model of the causal relationships;
a graphical user interface to display the predicted outcome probability to an agent associated with the interaction in real time, which functions to alert the agent of how well he is doing in the interaction.”

- 7 At the hearing, step (1) of the *Aerotel/Macrossan* test was not in issue, since there was no dispute as to the proper construction of claim 1. Nor was step (4) in issue, since, although Mr Gymer referred at times to the technical nature of the invention, he accepted that this would not save the day if the invention did not pass step (3) of the test. The dispute lay entirely in steps (2) and (3) - the contribution made by the invention and whether it fell wholly within one or more of the excluded areas.
- 8 In his letter of 13 November, the examiner argued that the contribution lay in analysing audio attributes of an interaction including at least one of pitch and intensity, mapping out causal relationships among the attributes, encoding the attributes representing the extent of the effect of one attribute on another and determining a probable outcome for the interaction based on analysis of the attributes and an attribute history using a probabilistic model and displaying the outcome in real time.
- 9 However, he qualified this by saying that he saw the contribution as arising not so much in the analysis of the signal as in the processing of characteristics derived from an analysed signal. In his view this contribution lay wholly within the excluded areas since it was effected on conventional apparatus by a computer program and used mathematical methods for the mapping of relationships and calculation of probabilities.
- 10 Considering the examiner to be going too far in “de-constructing” the claim, Mr Gymer took a different perspective, highlighting the fact that in *Aerotel/Macrossan* the *Aerotel* patent, relating to a method and system for facilitating a telephone call from any available telephone, had actually been upheld. As appears from paragraphs 50 – 57 of the judgment, the court considered the *Aerotel* system claim to be in fact a claim to a physical device consisting of various components and that the contribution of the inventor was not a use of existing apparatus for a new method but rather the creation of a new overall combination of apparatus using known types of apparatus.
- 11 Accordingly, Mr Gymer argued that the contribution made by the present claim 1 lay in apparatus comprising a novel combination of features which first carried out a technical analysis of what was going on in the interaction between the caller and the agent using objective measurements, particularly of pitch and intensity, and then carried out computational steps, essentially using a statistical method (Bayesian analysis) on historical and current attributes. He did not think, referring to the wording of section 1(2), that this could be said to be a computer program or mathematical method “as such”. Thus, although the invention used a statistical method and a computer program it was not about these things per se.
- 12 The examiner thought that Mr Gymer had fallen into error by looking at the

invention as a whole as defined by the claims rather than analysing the claim to identify where the contribution made by the invention lay. As he saw it, Mr Gymer's approach led to the conclusion that by providing a novel apparatus the invention must necessarily fall outside of the excluded areas. The examiner accepted that for the purposes of construing the claim in step (1) he had to consider the claim as a whole, but thought that it was then necessary in step (2) to identify where the contribution lay. In his view, having regard to the prior art already identified and his own knowledge of the art, the contribution lay in the features of the simulator wrapper and these were implemented wholly by means of a computer.

- 13 Mr Gymer, whilst not as I understood it disagreeing with the examiner's analysis of where the difference in the two approaches lay, and accepting that many of the elements were known, still thought that the combination of those elements went beyond either a computer program to carry out an analysis function or an algorithm incorporating Bayesian analysis.
- 14 I note that the analysis offered by the examiner at the hearing could perhaps be said to differ from that put forward in his letter of 13 November in that by limiting it to the simulator wrapper it excludes the steps of analysing the audio attributes of the interaction at the beginning and displaying the output in real time at the end. However, as I observed, the examiner did take the view that the contribution was really about the way in which the characteristics derived from analysis of the signal were processed, and I would agree with that.
- 15 Since in my view the display of the predicted outcome in real time (by means of a graphical user interface in claim 1) is a wholly conventional feature, I consider that that the contribution for the purposes of step (2) of the *Aerotel/Macrossan* test does indeed lie in the simulator wrapper as constituting a better form of interaction monitor.
- 16 Turning to step (3), it seems to me that the simulator wrapper is nothing more than a series of steps to be executed under the control of a computer. That in my view is sufficient for me to find that the contribution lies solely within the computer program exclusion, and that having regard to the substance rather than the form of the invention (as paragraph 43 of *Aerotel/Macrossan* enjoins me to do) the invention relates to a computer program as such.
- 17 Mr Gymer thought that the differences between hardware, firmware and software were now blurred to the extent that it was misleading to regard the execution of these steps as relating to a computer program. He suggested that it was not necessary for them to be implemented in software form and that a suitably skilled electronic technician would be able to hard wire the device. However, I am not at all convinced that this is a realistic possibility, and nor do I see how it would be possible to implement the device other than by means of a computer program. A "new hardware" test is not of itself enough to avoid objection under section 1(2) as explained at paragraph 90 of *Aerotel/Macrossan* in its discussion of *Gale's Application* [1991] RPC 191.
- 18 I accept that the invention uses mathematical methods for the mapping of

relationships and the calculation of probabilities but I do not think that constitutes the whole of the contribution identified by the examiner. As the examiner put it in his letter of 13 November, “within this field [computer programs] the contribution also comprises a mathematical method”. However I do not think that the contribution made by the invention – the simulator wrapper - can be said to relate to a mathematical method as such.

- 19 Although in earlier correspondence the examiner had raised objection under the business method and mental act exclusions, he did not press it at the hearing. Although these heads of exclusion were briefly discussed, they were not fully argued. I therefore make no finding on them.

Conclusion

- 20 I therefore conclude that the invention relates to a program for a computer as such. It does not follow that, as suggested by Mr Gymer at the hearing, “the knives are out” for any invention that happens to use a computer program regardless of how the invention is claimed; such an approach was expressly disapproved by the Court of Appeal in *Aerotel/Macrossan* at paragraph 22. My conclusion follows, as I have explained above, from a consideration of the substance of the invention rather than the form in which it is claimed.
- 21 Having read the specification, I cannot find anything which would constitute a patentable invention and I therefore refuse the application under section 18(3).

Appeal

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

R C KENNEL

Deputy Director acting for the Comptroller