

## PATENTS ACT 1977

APPLICANTS                      Makor Issues and Rights Limited

ISSUE                              Whether patent application number GB  
0422482.0 complies with section 1(2)

HEARING OFFICER                      R C Kennell

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## DECISION

### Introduction

- 1      This application was filed on 11 October 2004, claiming a priority of 17 October 2003 from an earlier US application, and was published under serial no. GB 2407184 A on 20 April 2005.
- 2      The examiner reported under section 17(5)(b) of the Act that search would serve no useful purpose. Subsequently, at substantive examination, he reported that the invention was excluded from patentability under section 1(2) and deferred examination of any further aspects; despite amendment of the claims to emphasise the supposedly technical nature of the invention, the applicant has been unable to overcome this objection. The matter therefore came before me at a hearing on 3 May 2007, when the applicant was represented by its patent attorney, Mr Simon Black of Kennedys Patent Agency Limited, and the examiner, Mr Jake Collins, assisted via videolink. The matter of whether the examiner was justified in issuing a report under section 17(5)(b) was also in issue.
- 3      After the hearing I gave Mr Black an opportunity to consider the judgment of the Patents Court in *Oneida Indian Nation's Application* [2007] EWHC 0954 (Pat) which had issued on the previous day, to which Mr Black responded on 15 May 2007.

### The invention

- 4      The invention uses of point-of-sale data in order to optimise prices and promotion schedules, and hence maximize retail profits, for supermarket chains and similar retail organisations having a large number of outlets. It aims to overcome a variety of problems that have occurred with known inventory management

systems producing a pricing forecast. These problems are explained in the introductory part of the specification, which includes a substantial review of prior patent disclosures in this field. The claims in their current form comprise a single independent claim, claim 1, which is recited in the Annex to this decision.

## The law

- 5 Section 1(2) reads (emphasis added to show the heads under which the examiner's objection arises):

"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.**"

- 6 The relevant parts of section 17 read:

"(4) Subject to subsection (5) and (6) below, on a search requested under this section, the examiner shall make such investigation as in his opinion is reasonably practicable and necessary for him to identify the documents which he thinks will be needed to decide, on a substantive examination under section 18 below, whether the invention for which a patent is sought is new and involves an inventive step.

(5) On any such search the examiner shall determine whether or not the search would serve any useful purpose on the application as for the time being constituted and –

(a) if he determines that it would serve such a purpose .....; and

(b) if he determines that the search would not serve such a purpose in relation to the whole or part of the application, he shall report accordingly to the comptroller;

and in either event the applicant shall be informed of the examiner's report."

- 7 Although they were not put in issue before me, I draw attention in connection with section 17(5)(b) to sections 97(1) and 101 of the Act. Under section 97(1) an appeal lies to the Patents Court from (with a few exceptions, not relevant here) "any decision of the comptroller under this Act or rules". Section 101 requires the comptroller to give any party appearing before him an opportunity of being heard before adversely exercising "any discretion vested in the comptroller by this Act or rules".

### The interpretation of section 1(2)

- 8 Since Mr Black's argument was based very much on the supposedly technical contribution made by the invention, it will be helpful at this stage to consider the

effect of the Court of Appeal's judgment in *Aerotel/Macrossan*<sup>1</sup> which was handed down on 27 October 2006. The Court of Appeal 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 (although at the application stage this might have to be the alleged contribution)
- 3) Ask whether it falls solely within the excluded matter
- 4) Check whether the actual or alleged contribution is actually technical in nature.

9 In a notice published on 2 November 2006<sup>2</sup>, the 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. Although the approach differed from that currently adopted by the European Patent Office in *Hitachi* (T 0258/03), it was expected that the result would be the same in nearly every case.

10 It is important to note what *Aerotel/Macrossan* says about the requirement for a technical contribution. Paragraphs 41 and 45 – 47 of the judgment make it clear that the new four-step test is a re-formulation of that in *Merrill Lynch's Application* [1989] RPC 561 in which it was emphasised that inventive excluded matter could not count as a technical contribution. Thus the fourth step of checking whether the contribution was technical, although necessary if *Merrill Lynch* was to be followed, might not need to be carried out because the third step – asking whether the contribution is solely of excluded matter – should have covered the point. As the Deputy Judge explains in *Oneida Indian Nation* at paragraph 10, considering *Aerotel/Macrossan*:

“Identification of some technical advance as compared with earlier methods does not bring back into contention inventions excluded at the third step. If the invention has been excluded at step 3, any technical contribution must have been one of purely excluded matter. Inventive excluded matter cannot, as a consequence of the Merrill Lynch rider, count as a technical advance. The fourth step is intended merely to make sure that inventions that have passed at step 3 are technical in nature. So step 4 is exclusionary in nature.”

It is therefore quite clear that I now need to consider whether there is a technical contribution only if the invention passes the first three *Aerotel/Macrossan* steps.

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<sup>1</sup> *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371, [2007] RPC 7

<sup>2</sup> <http://www.patent.gov.uk/patent/p-decisionmaking/p-law/p-law-notice/p-law-notice-subjectmatter.htm>

## Argument and analysis

### ***Whether a report that search would serve no useful purpose was justified***

- 11 In his report on 25 November 2004, the examiner took the view that search would serve no useful purpose because the invention related to a method for doing business, a mathematical method and a program for a computer. He saw nothing to indicate that any of the hardware elements, the interactions between them, and the programming and statistical techniques were anything other than conventional. Accordingly he could identify no technical contribution which might make the invention patentable. Although not specifically mentioned in the letter, the requirement for a technical contribution was dictated by the case law which at that time governed the section 1(2) exclusions.<sup>3</sup> There have of course been considerable developments in case law since the report was issued.
- 12 Mr Black did not accept the examiner's view and has maintained throughout the proceedings and at the hearing that a search should be carried out. He thought that arguably there were technical features in the claims such as the various databases and means for carrying out various functions, and that a search needed to be conducted in order to decide whether the differences between the invention and the prior art were technical, in accordance with the approach of the EPO Board of Appeal in *Hitachi*. He also felt that the examiner was wrong simply to assert without further explanation that certain matters were conventional and a matter of common general knowledge, and thought there was no way of understanding at what date the assertion was being judged.
- 13 It is for the examiner to decide under section 17(5)(b) whether the search would serve a useful purpose, and the legislation provides no guidance as to the factors which are to be taken into account in reaching that decision. However, as explained in the Office's "Manual of Patent Practice"<sup>4</sup> and confirmed by the Court of Appeal in *Aerotel/Macrossan* (see paragraph 33), there is no requirement that the examiner should conduct a search before coming to a view on whether an invention is patentable and he or she is entitled to use common sense and experience.
- 14 It may be open to question whether I can in fact review the action taken by the examiner. Even if the "report to the comptroller" under section 17(5)(b) is not a "decision of the comptroller" for which the court is the appropriate forum for review under section 97(1), it may still be arguable whether the report constitutes an adverse exercise of a discretion vested in the comptroller which I should consider under section 101. This point was not raised at the hearing or in the earlier proceedings. However I do not think that I need to decide it because even if it is open to me to review the report under section 17(5)(b) I would see no reason on the face of it to criticise the action taken by the examiner.
- 15 Thus, having regard to the possible technical features identified by Mr Black, it

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<sup>3</sup> *Fujitsu Ltd's Application* [1997] RPC 608

<sup>4</sup> See <http://www.ipo.gov.uk/practice-sec-017.pdf> at paragraph 17.99, including references to *CFPH LLC's Application* [2005] EWHC 1589 (Pat), [2006] RPC 5 and *Shopalotto.com Ltd's Application* [2005] EWHC 2416 (Pat), [2006] RPC 7

seems to me that the examiner was perfectly entitled to take the view that as a matter of substance rather than form there was nothing of a technical nature in the invention justifying a search and, further, that it was so clear-cut a matter as to require no more than a brief explanation in the letter. Whether the supposedly technical features were or were not well-known at the earliest date of the application is ultimately a matter for substantive examination, and I do not see that the examiner was obliged to go into this question in any greater detail in his report than he in fact did.

- 16 I am not persuaded by Mr Black's arguments that a search needs to be done in order to identify possible technical differences between the invention and the prior art. The applicant can hardly be said to be unaware of the prior art in this field since the specification commences with an extensive review of the patent literature as far back as 1997, covering some eleven pages.
- 17 In any case I do not see that there is any reason now to conduct a search on the authority of *Hitachi*. First, as I have explained above, whether the contribution of the invention is technical in nature is, under *Aerotel/Macrossan*, not the main determinant of whether the invention is patentable. Second, I do not think *Hitachi* is any longer a reliable authority. I am not bound by it and any persuasive effect that it might have had under section 130(7) of the Act seems to me to be negated in view of the contradictions in the Boards' decisions highlighted by the Court of Appeal in *Aerotel/Macrossan* and its express refusal to follow EPO practice. The Court of Appeal's decision is of course binding on me.
- 18 I will therefore go on to consider as a substantive matter whether the invention is excluded under section 1(2), in accordance not with *Hitachi* but with *Aerotel/Macrossan* under the four-step test.

***Whether the invention is excluded under section 1(2)***

First step

- 19 The first step requires me to construe the claims. I do not think that this presents any difficulties. I observe that the claims have been amended in the course of prosecution, principally so that they refer to a "marketing decision support computer system" rather than a "marketing decision support system" as originally worded. As Mr Black explains in his letter of 1 December 2006, this is intended to emphasise the technical nature of the invention.
- 20 However one point which bears to some extent on the construction of the claims gave rise to considerable argument at the hearing. The examiner thought that Mr Black's arguments that the invention benefitted large and complex organizations were not relevant to the question of patentability because they did not apply over the entire width of the claims and would not be realised by, eg, a small corner shop: if there was something within the scope of the claim that did not have those benefits, then the benefits could not make it patentable. Mr Black did not accept this, believing it quite reasonable to discuss the benefits in relation to specific examples of the invention and pointing out that the corner shop owner would still be able to use the invention, but the real benefits would be obtained by larger

organizations.

- 21 I accept that it would not assist an argument on patentability to concentrate on a feature of the invention that did not appear in the claims under consideration (although I note that in this case claim 1 does refer to the system being directed to a plurality of remotely-operated monitors, suggesting that it will not really assist the small shop owner). However, I do not think the argument in this case really hinges on specific features of the claims. In referring to the particular benefits of the invention for large organizations I do not think Mr Black is doing any more than setting the contribution of the invention in its context. I do not think that the patentability of the invention is going to stand or fall on precisely what types of business can use it, but I do not think that makes the argument irrelevant.

### Second step

- 22 In his report of 21 December 2006, consequent upon Mr Black's letter, the examiner identifies the contribution of the invention as a marketing decision support computer system for determining the best price and marketing campaign for a given product or group of interrelated products, using a statistical model to perform data mining on historical sales volume data taking into account various influences. Mr Black accepted that the contribution was indeed a market decision support computer system rather than a marketing decision computer system, since it was intended to provide people with a figure of merit predictive function to assist the decision making process. Having regard to paragraph 43 of *Aerotel/Macrossan* summing up the contribution as "what has the inventor really added to knowledge?", Mr Black thought the invention had provided a computer system running a program which ran software adapted to analyse and collect data, and provided a secondary database containing the necessary data for estimation and optimisation calculations. This provided a solution for complex retail organisations for whom the problem of deciding optimum pricing and promotion strategies was - unlike the owner of a single small convenience store - beyond the capability of an unassisted human mind.
- 23 Mr Black and the examiner have used different wording to define the contribution, but I do not think that there is any great significance in this. In the end what I need to consider is whether a marketing decision support computer system having the claimed features relates solely to excluded matter. Although Mr Black urged me not to ignore the form of the claims as this determined the scope of the monopoly, paragraph 43 aforesaid is quite clear that I must look at the contribution as a matter of substance, not form.

### Third step

- 24 I must therefore now consider whether the contribution of the invention – the marketing support decision computer system - resides solely in excluded matter, in this case a computer program, a mathematical method or a method for doing business. The examiner did not press his original objection under the mental act head of exclusion in view of doubt about whether it now extended to electronic means for doing something that could otherwise have been done mentally (see paragraph 13 of the aforesaid Office notice).

### *Computer program*

- 25 In his letter of 1 December 2006, Mr Black opined that the invention was not a computer program as such because the claims were directed to a computer system upon which was loaded software which allowed the computer system to operate in the manner defined in the claims. Developing this argument at the hearing, he believed that the invention was a combination of hardware and software possessing a sufficient degree of technicality to make it patentable. In his view the invention was closer to the *Aerotel* appeal (which was allowed in *Aerotel/Macrossan* as a new physical combination of hardware, even though it could be implemented using conventional computers) rather than the *Macrossan* appeal which was disallowed. He pointed me to a number of items in the claims – for example the features of the secondary data base in claims 1 and 16, the means for data mining in claims 3, 4 and 5 and the estimation procedure of claim 12 – which were arguably technical features capable of imparting patentability.
- 26 I do not accept this argument. It is clear to me on reading the specification that this invention is entirely concerned with setting up a computer to execute a series of operations in order to optimise product prices and promotion schedules. As the specification succinctly puts it at the foot of page 5 “pricing and promotion are optimised in the framework of a constructed statistical model and estimated using historical database and data mining tools”. I cannot see anything to suggest that the hardware used is anything other than absolutely standard and I do not think that the historical and secondary databases – the only features of claim 1 not defined as program instructions or software modules containing them – are in any sense new hardware features. There is nothing here corresponding to the new “special exchange” of *Aerotel*. Indeed it seems to me that the invention is closely analogous to *Macrossan* – the claims of which also include database structures – and that the contribution of the invention is similarly nothing more than a computer program up and running (see *Aerotel/Macrossan* at paragraph 73).
- 27 Notwithstanding the form in which the invention is claimed, I therefore consider the contribution of the invention in substance to lie solely in a program for a computer.

### *Doing business*

- 28 As mentioned above Mr Black emphasised that the computer system was designed to support a business process. Therefore, although it yielded a benefit for business, he did not therefore think that it could be a method for doing business as such. He accepted that, like the claims which were disallowed in the *Macrossan* appeal, the invention was concerned with making a business process work more smoothly, but thought that there was a technical distinction in that the invention solved the technical problem of improving a marketing support system.
- 29 *Aerotel/Macrossan* confirms at paragraphs 67-71 that the business method exclusion is not limited to abstract matters or to completed transactions. I accept that there may therefore be difficulties on occasion in deciding whether a method which supports a business decision is sufficiently distant from the conduct of the

business to fall outside the exclusion. Nevertheless, it seems to me that the substance of the contribution in this case – which as I have explained above does not lie in hardware – goes to the heart of the way in which the business determines pricing and promotion strategies. I am therefore satisfied that the contribution lies solely in a method for doing business.

#### *Mathematical method*

- 30 Mr Black did not think the invention could be said to relate to a mathematical method as such because the computer system went beyond this by implementing the mathematical method. Although, as I understood it at the hearing, he accepted that simply removing information from a database and carrying out a mathematical operation on it would constitute a mathematical method as such, he thought the present claims went beyond this.
- 31 Again, I do not agree. It seems to me that, notwithstanding the form of the claims, the substance of the contribution lies in providing the instructions for a computer to carry out a series of operations, relying in part on data mining techniques, which are mathematical in nature to optimise a “figure of merit” prediction. I consider this to relate solely to a mathematical method.

#### Fourth step

- 32 Having found in the third step that the contribution relates solely to excluded matters, it is not necessary, as I have explained above, for me to go on and consider whether it is technical in nature. However, since so much of Mr Black’s argument was directed to the technicality of the invention, I would say that I do not think the invention is really about solving a technical problem or producing a technical improvement concerning the way in which a computer operates; and nor do I think that it is technical simply because it claims both hardware and software. To my mind there is nothing at all new about the hardware and fundamentally the invention is to do with programming.

#### **Conclusion**

- 33 I therefore conclude that the invention is excluded under section 1(2) because it relates to a program for a computer, a mathematical method and a method for doing business, as such. It is not therefore necessary for me to decide whether the invention is also excluded as a method for performing a mental act, and the examiner has in any case withdrawn his objection on that ground.
- 34 Having read the specification, I do not think that any saving amendment is possible. In the light of my findings, I see no point in the examiner carrying out any search of the invention and I refuse the application under section 18(3).

#### **Appeal**

- 35 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

## **ANNEX TO DECISION O/181/07**

### **Claim 1 as amended**

A marketing decision support computer system for food stores, supermarkets, and store chains or groups thereof, intended for optimization of a preferred merchandising figure-of-merit predictive function (revenue, profit and the like) in product prices and promotion schedules of a plurality of remotely-operated in-store computer monitors, the computer system comprising:

- (a) A historical database connected to the said marketing decision support system that contains scanner-type data;
- (b) A software module containing program instructions to implement a procedure for flexible modelling and efficient optimization of joint effects of pricing and promotion factors, and also of various other-related influence factors on product demands of a plurality of products on sale;
- (c) Program instructions for data mining of the said historical database with the dual purpose of flexible aggregation of individual sale and promotion records into data batches corresponding to user-select or system-determined time periods, and of extracting the contents of database fields corresponding to the said influence factors;
- (d) Program instructions for construction of an integrated pricing and promotion regression model or a set of integrated pricing and promotion regression models suitable for capturing joint effects of the plurality of said influence factors including pricing and promotion variables on the demands of the plurality of products on sale;
- (e) Program instructions for providing an efficient estimation procedure of said integrated pricing and promotion regression models capable both of simultaneous estimation and of separate stepwise estimation;
- (f) Program instructions for construction of predicted future demands for products in categories with substitute demands and with complementary demands;
- (g) Program instructions for isolating effects of prices on product demands in categories based on said efficient estimation procedure;
- (h) Program instructions for isolating effects of display (exposition) times of a plurality of promotion clips (running on various in-store monitors) on product demands in categories based on said efficient estimation procedure;
- (i) A secondary database containing only the data necessary for estimation and optimization computations and storing them in a form suitable for fast reading and processing.

**R C KENNEL**  
27 June 2007