PATENTS ACT 1977

IN THE MATTER OF
Patent Application Number
GB9604003.5 in the name of
Fujitsu Limited

DECISION

Background

1.The present application is entitled: “Data processing system with priority management”. It is concerned with systems which handle conflicting demands for resources, such as reservations for meeting rooms. In examination under Section 18 of the Patents Act, the examiner reported that the application did not comply with Section 1(2)(c) of the Act since the claims relate to a method of doing business or in the case of one claim, to a method for performing a mental act. The agent Mr Stephen Mohun acting for Fujitsu Limited has made amendments and put forward arguments on this point, but the examiner has maintained his objections.

2. The main embodiment is a reservation management system in which the relative importance of conflicting requests is assessed based on such factors as the reason for the meeting, the importance of the person making the booking, the number and seniority of attendees, how long it is until the meeting, for how long a meeting has already been booked, and the number of times a reservation has been rescheduled. An algorithm assesses the degree of importance using these criteria and priority is given to the more important reservation. Existing reservations may be rescheduled.

3.I note that the priority and importance criteria are ones which affect individuals using the system and relate to their human, day-to-day affairs.

4.Another embodiment is the prioritising of queues waiting to be processed by a computer. An item in the queue is referred to as “a processing”. The importance of a processing is assessed using very much the same factors as in the reservation system, such as the purpose of the processing, the importance of the person requesting it, how long it is until the processing

will be done, how long the processing has already been queued, and the number of times it has been rescheduled. A new processing is compared as to priority with each of the processings already waiting in the queue and is inserted at a position appropriate to its priority.

5.A third embodiment concerns the management of database entries. A very brief reference in the description says no more than that the invention can be used to prevent mutually exclusive entries in databases. There was only one original claim to database management but this aspect has taken on greater importance as proposals for amendment have the effect that all of the claims relate to database management or database-entry management

6.I have already said that the reservation management system is concerned with priority and importance in the human sphere. It was not immediately apparent to me to what extent the queueing and database management systems extend and broaden the reservation management disclosure, and I have found it necessary to consider this point at some length in order to satisfy myself as to the proper construction of the disclosure and claims, specifically whether the systems claimed extend beyond the human sphere. It might be imagined that a system for "queueing processings for a computer" would be concerned with, or might include, the internal workings of a computer to speed up data flow or improve memory usage for example. However, it seems to me on a careful reading of the specification, that the queueing system does not in fact relate to the internal workings of a computer, but, as with the reservation system, it relates to the prioritisation of actions in the human sphere. I am confident this is the case because the arrangement for queueing processings involves assessment of priority factors such as the importance of the person requesting the task, which would not be a criterion in internal processes. The specification also indicates that the "processings" and the reservations already discussed are in fact the same (or closely related) things: For example original claims 3 and 14, and the amended claim 16 involve queueing of reservations, and the description of the queuing system says for example: " ... the degree of importance of that processing (reservation) is calculated in step S26... " equating "processing" and "reservation" with one another. I can find nothing in the specification which contradicts this view and it seems clear to me that the queueing system, like the reservation system, is envisaged only in relation to the queueing of human actions for processing by a computer.

7.In relation to the database management embodiment, the only part of the description that refers specifically to database management is the last three lines on page 32 which read: "The invention is generally applicable to circumstances in which mutually exclusive entries into

databases must be prevented." Database management apparatus was originally claimed in claim 17 having the same elements as the reservation management/queueing apparatus of claims 1 and 14, except that a) references to reservations in claim 1 and to "processings" in claim 14 were replaced by references to "database entries", and b) the outcome of the priority assessment involved slightly different options for accepting or modifying conflicting entries. Since there is no detailed description relating to any specific database management embodiment, and the original database management claim was substantially equivalent to the reservation and queueing claims, it appears that any claims to database management are supported principally by the description of the reservation management and queueing systems. Consequently, although claims to database management potentially provide some generalisation over the idea of a reservation or queueing system, any system within the scope of such a claim must, when the claim is properly construed in the light of the description, operate in an essentially equivalent manner to the reservation and queueing systems. As with the reservation management and queueing systems, I therefore consider that the references to priority information and importance in the database management claims relate to activities in the human sphere.

8. It is worth considering the examples of applications for the invention that have been put forward to help assess what the applicant has in mind. In addition to reservation of meeting rooms, the specification refers to the use of the invention in relation to personal schedules and Mr Mohun volunteered such activities as the reservation of hotel rooms or airline seats or the scheduling of items to appear in a broadcast. While the examples Mr Mohun's gave at the hearing can not affect the construction of the specification, they are consistent with my interpretation. In summary, the disclosure relates consistently to activities and prioritisation in the human sphere. The applicant has provided no enabling disclosure which would invite a broader interpretation and the scopes of the claims, whether drawn to reservation management or database management must in my view be interpreted to encompass only such human related activities and prioritisation.

9.I will now briefly review the history of the examination. In the first section 18(3) report dated 23 June 1999 the examiner, Mr Grant Bedford, reported that claims 1 to 13 (reservation management apparatus), 15 (reservation management method), 17 (database management apparatus) and 18 (omnibus claim) were excluded from patentability by virtue of section 1(2)(c) of the Act since they related to a method of doing business. The other independent claims, 14 (reservation management apparatus, but closer in its requirements to the queueing system of claim 16), 16 (queue control method) and 19 (omnibus claim) were reported as

relating to a second invention.

10.Mr Mohun replied with a letter dated 22 December 1999 in which he filed amendments to claims 1, 15 and 17, "in order to emphasise the technical nature of the invention". At the same time claims 14 and 16 were made dependent respectively upon claims 1 and 15, and claim 19 was deleted, in order to remove the plurality objection.

11.A new examiner, Mr Stephen Probert took over the case, and in a further section 18(3) report of 14 January 2000, maintained the objection that the system claimed in claims 1 and 15 was to a method of doing business. He argued, with reference to the decision in *Merrill Lynch's Application [1989] RPC 561*, that amendments emphasising the technical nature of the invention would not render the claims patentable if when properly construed they relate to a method of doing business. He also now reported that claim 17 related to a method for performing a mental act. He said that the process of claim 17 would ordinarily be carried out by a human operator, and that the apparatus of claim 17 merely automated this process and caused the computer to make the decision using essentially the same criteria. The fact that a computer was used to perform this "mental act" did not avoid the exclusion.

12.Mr Mohun replied in a letter of 27 March 2000 with amendments to the independent claims which required the priority decisions to be made automatically. He argued that the invention produced a technical effect and a technical result, and that since the invention employed physical means to put it into effect it was not a method of doing business *as such.* He also said that the exclusion to business methods as such in section 1(2)(c) of the Act should be interpreted narrowly. In response to this letter, the examiner maintained his objections and offered a hearing. The matter came before me on 21 July 2000 at which Mr Mohun represented the applicant.

13.As the application now stands, incorporating the amendments made in the 22 December 1999 and 27 March 2000 letters, claims 1, 15 and 17 read as follows. I have highlighted the substantive amendments in bold.

> 1. A reservation management apparatus in an information processing system for receiving reservation requirements and determining **automatically** whether to accept the reservation requirements, comprising:
> entry means for entering requirements of a first reservation;
> storage means for storing information of a second reservation that was previously registered **and storing predetermined standards for determining degrees of importance**;

detection means for determining whether there is a duplication between the first reservation and the second reservation, according to the information of the second reservation stored in said storage means and the requirements of the first reservation, when the requirements of the first reservation are entered;
importance degree determination means for **automatically** calculating an importance degree of the first reservation according to the requirements of the first reservation, and an importance degree of the second reservation according to the information of the second reservation **by referring to the predetermined standards for determining degrees of importance stored in the storage means**; and
arrangement means for determining whether to accept the requirements of the first reservation, based on a comparison between the importance degree of the first reservation and the importance degree of the second reservation, which are calculated by said importance degree determination means**, wherein the first reservation is automatically accepted when the importance degree of the first reservation is greater than the importance degree of the second reservation, and a time and date of the first reservation is automatically changed when the importance degree of the first reservation is lower than the importance degree of the second reservation**.

15. A reservation management method **in an information processing system** comprising the steps of:
entering requirements of a first reservation;
determining whether there is a duplication between a first reservation and a second reservation, according to requirements of the first reservation and information of the second reservation that was previously registered;
automatically calculating an importance degree of the first reservation according to the requirements of the first reservation, and an importance degree of the second reservation according to the information of the second reservation **by referring to predetermined standards for determining degrees of importance**; and
determining **automatically** whether to accept the first reservation by comparing the importance degree of the first reservation and the importance degree of the second reservation, **wherein the first reservation is automatically accepted when the importance degree of the first reservation is greater than the importance degree of the second reservation, and a time and date of the first reservation is automatically changed when the importance degree of the first reservation is lower than the importance degree of the second reservation**.

17. A database management apparatus in an information processing system for receiving entries for a database including priority information and requirement information and determining **automatically** whether to accept the database entries with or without

modification, comprising: entry means for making a first entry including priority information and requirement information;
storage means for storing previously made entries;
detection means for determining whether there is a conflict between the requirement information of the first entry and any second previously stored entry;
importance degree determination means for calculating priority coefficients for each of the conflicting database entries according to their respective priority information; and
arrangement means for determining **automatically** whether to accept the first entry on the basis of its requirement information or to modify the requirement information before acceptance, based on the calculated priority coefficients of the conflicting entries and, if not modifying the first entry, then modifying the second entry.

Legal provisions

14.Section 1(2) of the Patents Act provides:

> "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 the thing as such."

15.Mr Mohun did not refer to any precedent cases, but did mention some helpful principles. He said that it was appropriate to assess the claimed invention as a whole. I agree with that and note that there are two aspects to this principle. The first is that a patentable invention may involve excluded matter, so long as the claim when assessed as a whole is not excluded. This was discussed for example in a decision of the EPO Technical Board of Appeal *Koch & Sterzel/X-ray apparatus, [1988] 1-2 OJEPO 19 (T26/86)* which said:

> "An invention must be assessed as a whole. If it makes use of both technical and non-technical means, the use of non-technical means does not detract from the technical character of the overall teaching."

The second is that in determining patentability one has to assess the substance rather than the form of the invention claimed. In the Merrill Lynch case referred to above, Fox L J said:

> " ... it seems to me clear, for the reasons indicated by Dillon L. J., that it cannot be permissible to patent an item excluded by section 1(2) under the guise of an article which contains that item - that is to say, in the case of a computer program, the patenting of a conventional computer containing that program."

Consequently it is necessary to construe each claim carefully to determine whether it relates to excluded matter in the guise of some other article.

16.Cases concerned with computer related inventions are relevant since the present invention involves the automation of a hitherto manual process and is claimed in the context of "an information processing system". The objections raised by the examiner in the present case relate to the patentability of a method for doing business or for performing a mental act however, in respect of which there are some further considerations. In the Merrill Lynch case referred to above, Fox L J went on to say:

> "Now let it be supposed that claim 1 can be regarded as producing a new result in the form of a technical contribution to the prior art. That result, whatever the technical advance may be, is simply the production of a trading system. It is a data-processing system for doing a specific business, that is to say, making a trading market in securities. The end result, therefore, is simply "a method .... of doing business", and is excluded by section 1(2)(c). The fact that the method of doing business may be an improvement on previous methods of doing business does not seem to me to be material. The prohibition in section 1(2)(c) is generic; qualitative considerations do not enter into the matter. The section draws no distinction between the method by which the mode of doing business is achieved. If what is produced in the end is itself an item excluded from patentability by section 1(2), the matter can go no further."

According to this decision, a method of doing business, even if it produces a new result in the form of a technical contribution, will still be excluded from patentability by section 1(2)(c).

17.The Merrill Lynch decision appears to apply equally in this respect to methods for performing a mental act and I consider in similar circumstances that a method for performing a mental act would also be excluded, whether or not it involved a technical effect. There is a further consideration which is that a mental act remains unpatentable if carried out by

computer apparatus as distinct from the human mind. The examiner explained this in his report of 14 January 2000 and the precedent case is *Wang Laboratories Inc's Application [1991] RPC 463,* in which Aldous J, finding that a claim to an expert system implemented on a computer was excluded subject matter said:

> "The method may well be different when a computer is used, but to my mind it still remains a method for performing a mental act, whether or not the computer program adopts steps that would not ordinarily be used by the human mind."

I take this to mean that if a method is found to be one for performing a mental act, it will not become patentable merely through being implemented on a computer system.

18.Mr Mohun said at the hearing that while he considered the subject matter of the present application to be patentable, he accepted that it might be on the borderline of patentability but that if there was doubt about the matter then the applicant should be given the benefit of the doubt. I agree that the applicant should receive the benefit of any doubt and I am approaching this decision on the basis that I should refuse the application only if I am certain that it discloses nothing more than excluded matter.

Issues

19.Turning now to the claims, a number of different versions have been put forward. As it stands currently, the application includes the independent claims set out in paragraph 13 above. Mr Mohun put forward two further sets of independent claims for consideration at the hearing; Proposal #1 and Proposal #2. He also made two suggestions for the inclusion of further limitations should proposals #1 and #2 be refused. I agreed to consider all these various forms of claim and to allow an opportunity for consequential amendment of the specification should any version of the claims be acceptable. Mr Mohun addressed primarily Proposal #1 and Proposal #2 at the hearing and I will consider first the arguments in relation to them.

20. Proposal #1 involves the replacement of "reservation management" in claims 1 and 15 with "database-entry management", wherever it occurs, plus some inconsequential minor amendments. Claim 17 already relates to database management involving the handling of database entries so the proposal results in three independent claims in the same terms as those in paragraph 13 above but with somewhat broader application to database-entry management in respect of claims 1 and 15. I consider this broadening to be limited as I have explained.

21.Mr Mohun said that the problem being addressed by the invention was a technical one in that conflicting requests for entry to a database had to be handled efficiently and consistently according to criteria set up in advance. He added that the technical nature of the invention was demonstrated by the fact that the system permitted a plurality of input sources from multiple users over a network. He highlighted the possible use of different input devices such as keyboard, mouse, telephone, microphone, fax and reading characters from a request form, which he said distinguished the present system from the traditional manual method of resolving conflicts. He pointed to the complex criteria for assessing priority which he said contributed to the technical character. He thought that the performance of the calculation to assess priority, the resultant changes to the database, and the rescheduling of other items were technical matters, as was the output of notification to the users. Examples of output notification given in the specification are e-mail, fax, electronic bulletin board, automatic calls using voice synthesis, mailing and circulating a printed notice. Mr Mohun concluded that while the operation of the invention might be underpinned by a business method, that should not of itself exclude the invention from patentability. He said that the claims were not directed to a business method as such.

22.Mr Mohun also argued against Mr Probert's report that claim 17 related to a method for performing a mental act. His argument relied principally on the amendments made in Proposal #2. These involved a limitation in each of the independent claims to the effect that database entry requirements are received from any of a plurality of input devices, and are input automatically, and a further limitation to means or a step for automatic notification to a user of a change to the database. Mr Mohun said that this took the systems claimed further away from being a mental act, and that all these technical means together could not be construed to be a mental act. He conceded that there may be a mental act underpinning the system, but said that the claims were not drawn to a mental act as such. He also considered that the amendments in proposal #2 reinforced the technical nature of the invention still further and took it further away from being a business method.

23.He proposed two further limitations as I mentioned above, which he said might take the claims further away still from business or mental methods; firstly outputting the results to a network, and secondly the automatic reprocessing of requests that fail.

24.Considering all these matters, what the invention has at its core, and is common between all the different versions of the claims, is a system for the resolution of conflict in committing entries to a database that depends on a "priority" assigned to each of the entries, the priority

being assessed in terms of importance factors. The database entries relate to human actions and the concept of priority is one which operates in human terms. Priority is based on such things as the importance of the person requesting the action, the length of time the person has been waiting, and the number of times his action has been rescheduled. There is some generalising wording in the claims, but I do not consider that these generalisations extend the scope of the database entries or broaden the concept of priority in such a way that they are taken out of the human sphere. Consequently, it seems to me that the invention involves no more than the implementation of a rule or method for prioritising human actions or other events relevant to human day-to-day activities. The rules for prioritisation are ones that can be manipulated by a human and the invention does no more than provide an electronic implementation of them. The claims include means or steps which govern the implementation of the method by the information processing system, but I do not think those means or steps affect the essential character of the invention.

25.The "end result" of this invention in the sense discussed by Fox L J in Merrill Lynch, consequently appears to me to relate to subject matter excluded by section 1(2)(c). Some of the reservation management embodiments, and some activities within the database-entry management or database management claims involve a business function, and therefore appear to be no more than methods of doing business. All the specific examples of uses of the invention which have been given in the specification and at the hearing appear to be subject to the business method exclusion. Other activities within the database-entry management and database management claims might come within the exclusion of methods for performing a mental act. I do not think it is possible or necessary for me to say which exclusion applies to different uses which could be envisaged within the claims, but I consider that any system within the scope of the claims will be excluded by one or other of these provisions. Further I consider that any claim properly based on the disclosure would face the same exclusion since it must involve the mere automation of a manual method of prioritisation of human actions. For the avoidance of doubt, I include in this all of the current claims and the different proposals for amendment put forward at the hearing. So far as any of the excluded matter relates to a method for performing a mental act, as discussed in the Wang decision, it remains excluded even though it may be effected by means of a computer system. I therefore have no doubt in my mind that the invention relates to subject matter which is unpatentable by virtue of section 1(2)(c) and I refuse the application.

26.Mr Mohun has made amendments and proposals based on emphasising the technical effect of the invention. If I am right and the invention relates to a method of doing business or for

performing a mental act, then, following the decision in Merrill Lynch, the presence or otherwise of a technical effect does not affect its patentability. However I will nevertheless consider the issue of technical effect in case I am wrong. The specification makes clear that the invention originates in the automation of a manual reservation management system. A computer system is employed to do what was hitherto done manually. The steps in the manual method have been translated into steps in the computer system and the two systems would involve equivalent processing and produce equivalent outputs. The technical means for putting the method into effect are the conventional input, output and processing means of computer systems everywhere. Mr Mohun argued that these technical features rendered the claims patentable. I do not agree. Automation may make the method quicker, more accurate, more easily accessible to users and, in the network version, more widely available, but these are the familiar benefits of computerisation, and I can see nothing further in the present case, in any of the claims proposed or in the description, which produces a modification of the technical operation of the computer system, or any special interaction between the software and the physical computer system which could produce a new technical result. The system is a technical system as Mr Mohun says, but the technology is conventional and the system taken as a whole does not in my view involve a technical effect; that is to say it does not produce a new result in the form of a technical contribution. Even if I am wrong about the invention being excluded because it is a method of doing business or a method for performing a mental act, I consider that it would still be excluded by section 1(2)(c) as a program for a computer.

Added subject matter

27.One issue arose at the hearing which I need to mention in case this decision is appealed successfully. It concerns the amendments filed with the agent's letter of 22 December 1999. The insertion at the end of claims 1 and 15 reads:

> "wherein the first reservation is automatically accepted when the importance degree of the first reservation is greater than the importance degree of the second reservation, and a time and date of the first reservation is automatically changed when the importance degree of the first reservation is lower than the importance degree of the second reservation."

There appears to be no specific support for arrangements in which the time and date of the first reservation is changed, the description refers only to changing the time and date of the second reservation. There is possible partial support in the last clause of claim 17, but the point would need to be resolved before the application could proceed.

Appeal

28.Since this is a substantive matter, any appeal should be filed within six weeks of the date of this decision.

Dated this 23rd day of August 2000

PETER MARCHANT

Deputy Director, acting for the Comptroller

THE PATENT OFFICE