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7th May 2004

PATENTS ACT 1977

APPLICANT

Fujitsu Limited

ISSUE

Whether patent application number GB 0020097.2 is excluded from being patentable under Section 1 (2)

HEARING OFFICER

Mr D McMunn

DECISION

Introduction

1. Patent Application No GB 0020097.2 entitled "Generation of Schedules" was filed on 15th August 2000 and published on 20th June 2001 as GB 2357353 A. In the letter accompanying his search report dated 12th April 2001, the search examiner observed that the invention might be excluded from being patentable as a method of performing a mental act encapsulated as a computer program but deferred further consideration of that issue until substantive examination.
2. The first substantive examination report under Section 18 (3) was issued on 10th April 2003. In it the examiner, inter alia, formally raised the objection that the invention was excluded from being patentable as being merely a computer program, a method of performing a mental act and also merely a business method. Several rounds of amendment and re-examination followed throughout which the examiner maintained his objection that the invention was not patentable. It became clear that further correspondence or discussion was unlikely to conclude the issue and the matter came before me at a hearing on 7th April 2004 where the applicant was represented by their patent agent Mr Tim Stebbing of Haseltine Lake, Patent and Trade Mark Attorneys.
3. The hearing was held on the basis of claims filed with a letter dated 15th March 2004 which consisted of three independent but co-terminus claims only :- 1 to an apparatus, 2 to a method and 3 to a computer program and equivalent omnibus claims.

The Application

4. The application relates to computer implemented solutions for determining the optimum order for carrying out a plurality of individual pieces of work performed at different times over various time periods. The main example given is that of organising a crew schedule for operating the flights of an airline. Basically, information on all work that is to be scheduled is held in a store known as “process target work storage device”. The earliest pieces of work for which a schedule is to be set is/are extracted from this store and passed to “an unconnected work check device”. This device compares these pieces of work with information held in a final “work pattern storage device” to see if all pieces of this work have been assigned and if not looks to see if further pieces of work still to be performed can be done after all these earliest pieces have been assigned. This is carried out between the unconnected work check device and a “work connection device” which takes potential candidates which are held in a store known as “inter-work connection candidate selection device” and determines whether such candidates have been or can still be connected. Once it is determined that candidate pieces of work can be connected, they are passed via the work connection device to a “connection schedule computation device” where, after such connection they are stored in the work pattern storage device.

5. The claims as they currently stood before the hearing read as follows:

1. A work schedule generation apparatus, comprising: process target work storage means (1) for storing work information for a plurality of days for each piece of work to be scheduled; work performance order candidate selection means (3) for selecting work to be performed after each piece of work stored in said process target work storage means (1) ; unassigned work check means (2) for extracting unassigned work whose execution period has not been completely assigned from said process target work storage means (1) and checking whether the extracted piece of work can be assigned to a work performance schedule by referring to the extracted piece of work and a work performance schedule stored so far in a work performance schedule storage means (6) ; work performance order setting means (4) for obtaining from said work performance order candidate selection means (3) the work to be performed after the work extracted by said unassigned work check means (2) , enquiring of the unassigned work check means (2) whether the piece of the obtained work can be assigned to said work performance schedule, and setting performance orders of plural pieces of work; work performance schedule computation means (5) for computing the performance orders of the plural pieces of work set by said work performance order setting means (4) , and generating a work performance schedule from the performance orders of the plural pieces of work by using bit strings that indicate the days on which each piece of work is to be performed; and a work performance schedule storage means (6) storing the work performance schedule generated by the work performance schedule computation means (5) ; wherein: if the performance orders of the plural pieces of work include a piece of work to be performed next day, the work performance schedule computation means (5) computes a performance schedule including the piece of work to be performed next day in a manner in which an AND operation is performed between a pair of said bit strings corresponding to a pair of work pieces, and the bit string corresponding to the work piece performed earlier is shifted by one day against that corresponding to the work piece to be performed immediately afterward, and then the selected pair of the work pieces are determined connectable when not all the bits resulting from the AND operation take the value indicating that a work piece is not

performed, and generates said work performance schedule spanning a plurality of days, whereby a number of the unassigned pieces of work associated with the work information stored in the process target work storage means is reduced, hence a number of combinations to be checked by the unassigned work check means (2) is reduced, and an optimum work performance schedule spanning a plurality of days can be generated quickly even when the number of combinations is very large.

2. A work schedule generation method, comprising: a work information storage step of storing work information for a plurality of days for each piece of work to be scheduled; a work performance order candidate selection step of selecting work to be performed after each piece of work stored in said work information storing step; an unassigned work checking step for extracting unassigned work whose execution period has not been completely assigned from the work information stored in said work information storing step and checking whether the extracted piece of work can be assigned to a work performance schedule by referring to said extracted piece of work and to a work performance schedule stored so far in a work performance schedule storing step; a work performance order setting step of obtaining, from the results of said work performance order candidate selection step, the work to be performed after the work extracted by said unassigned work checking step whilst checking, using the unassigned work checking step, whether the piece of the obtained work can be assigned to said work performance schedule, and setting performance orders of plural pieces of work; a work performance schedule computation step of computing the performance orders of the plural pieces of work set in said work performance order setting step, and generating a work performance schedule from the performance orders of the plural pieces of work by using bit strings that indicate the days on which each piece of work is to be performed; and a work performance schedule storage step of storing the work performance schedule generated in the work performance schedule computation step; wherein: if the performance orders of the plural pieces of work include a piece of work to be performed next day, the work performance schedule computation step computes a performance schedule including the piece of work to be performed next day in a manner in which an AND operation is performed between a pair of said bit strings corresponding to a pair of work pieces, and the bit string corresponding to the work piece performed earlier is shifted by one day against that corresponding to the work piece to be performed immediately afterward, and then the selected pair of the work pieces are determined connectable when not all the bits resulting from the AND operation take the value indicating that a work piece is not performed, and generates said work performance schedule spanning a plurality of days, whereby a number of the unassigned pieces of work associated with the work information stored in the work information storage step is reduced, hence a number of combinations to be checked in the unassigned work checking step is reduced, and an optimum work performance schedule spanning a plurality of days can be quickly generated even when the number of combinations is very large.

3. A computer-readable storage medium, on which is recorded a program for enabling a computer to execute a process, said process comprising: a work information storing step of storing work information for a plurality of days for each piece of work to be scheduled; a work performance order candidate selection step of selecting work to be performed after each piece of work stored in said work information storing step; an unassigned work checking step for extracting unassigned work whose execution period has not been completely assigned from the work information stored in said work information storing step and checking whether the extracted piece of work can be assigned to a work performance schedule by referring to said extracted piece of work and to a work performance schedule stored so far in a work

performance schedule storing step; a work performance order setting step of obtaining, from the results of said work performance order candidate selection step, the work to be performed after the work extracted by said unassigned work checking step whilst checking, using the unassigned work checking step, whether the piece of the obtained work can be assigned to said work performance schedule and setting performance orders of plural pieces of work; a work performance schedule computation step of computing the performance orders of the plural pieces of work set in said work performance order setting step, and generating a work performance schedule from the performance orders of the plural pieces of work by using bit strings that indicate the days on which each piece of work is to be performed; and a work performance schedule storage step of storing the work performance schedule generated in the work performance schedule computation step; wherein: if the performance orders of the plural pieces of work include a piece of work to be performed next day, the work performance schedule computation step computes a performance schedule including the piece of work to be performed next day in a manner in which an AND operation is performed between a pair of said bit strings corresponding to a pair of work pieces, and the bit string corresponding to the work piece performed earlier is shifted by one day against that corresponding to the work piece to be performed immediately afterward, and then the selected pair of the work pieces are determined connectable when not all the bits resulting from the AND operation take the value indicating that a work piece is not performed, and generates said work performance schedule spanning a plurality of days, whereby a number of the unassigned pieces of work associated with the work information stored in the work information storage step is reduced, hence a number of combinations to be checked in the unassigned work checking step is reduced, and an optimum work performance schedule spanning a plurality of days can be quickly generated even when the number of combinations is very large.

4. A schedule generation apparatus substantially as hereinbefore described with reference to any of the accompanying drawings.
5. A schedule generating method substantially as hereinbefore described with reference to any of the accompanying drawings.
6. A computer program for implementing on a general purpose computer a schedule generation apparatus substantially as hereinbefore described with reference to any of the accompanying drawings.

6. It was agreed that since claims 1-3 were deemed co-terminus, the hearing could concentrate mainly on claim 1.

7. A discussion then followed on the meaning of claim 1 and various clarifying amendments were suggested and accepted. The main points of clarity concerning the claims dealt with the fact that the part following “wherein” was in fact conditional and not something which happened in every case - the first embodiment only has linked work taking place on each consecutive day and even the second embodiment first of all had work to be performed on each day connected before looking to see if some work on following days could be connected together with a previous day’s work. In other words, the widest scope of claim 1 covered only that subject matter up to “wherein”.

8. Also, the later part of the claim ie after “whereby” was not a feature of the apparatus of the claim per se but a result of the comparison of the apparatus of the “invention” with what had been previously done in the prior art mentioned in the specification (and that

subsequently cited by the search examiner also). Accordingly, it was agreed to strike out this subject matter.

9. Claim 1, therefore, which was considered at the hearing read as follows, wherein deleted parts are struck-out and inserted parts are in italics, :-

1. A work schedule generation apparatus, comprising: process target work storage means (1) for storing work information for each piece of work to be scheduled for *each of a plurality of days*; work performance order candidate selection means (3) for selecting *candidates for further* work to be performed after each piece of work stored in said process target work storage means (1) ; unassigned work check means (2) for extracting unassigned work whose execution period has not been completely assigned from said process target work storage means (1) and checking whether the extracted piece of work can be assigned to a work performance schedule by referring to the extracted piece of work and a work performance schedule stored so far in a work performance schedule storage means (6) ; work performance order setting means (4) for obtaining from said work performance order candidate selection means (3) the *preferred* work to be performed after the work extracted by said unassigned work check means (2) , enquiring of the unassigned work check means (2) whether the piece of the obtained work can be assigned to said work performance schedule, and setting performance orders of plural pieces of work; work performance schedule computation means (5) for computing the performance orders of the plural pieces of work set by said work performance order setting means (4) , and generating a work performance schedule from the performance orders of the plural pieces of work by using bit strings that indicate the *day(s) of said plurality of days* on which each piece of work is to be performed; and a work performance schedule storage means (6) storing the work performance schedule generated by the work performance schedule computation means (5) ; wherein: *whenever* if the performance orders of the plural pieces of work include a piece of work *it is desired* to be performed next day, the work performance schedule computation means (5) computes a performance schedule including the piece of work to be performed next day in a manner in which an AND operation is performed between a pair of said bit strings corresponding to a pair of work pieces, and the bit string corresponding to the work piece performed earlier is shifted by one day against that corresponding to the work piece to be performed immediately afterward, and then the selected pair of the work pieces are determined connectable when not all the bits resulting from the AND operation take the *a* value indicating that a work piece is not performed *on that day(s)*, and *thereafter* generates said work performance schedule spanning a plurality of days. ~~whereby a number of the unassigned pieces of work associated with the work information stored in the process target work storage means is reduced, hence a number of combinations to be checked by the unassigned work check means (2) is reduced, and an optimum work performance schedule spanning a plurality of days can be generated quickly even when the number of combinations is very large.~~

10. Given that the normal Section 20 period was set to end on the 12th April 2004 (13th April 2004 in fact since the 12th was Easter Monday) and it was unlikely that any decision could be produced before this date given the issues to be decided, it was pointed out that amendments of the other claims to correspond with amended claim 1 and bringing the rest of the specification into line with amended claim 1 would need to be carried out before this date for the application to be deemed in order thereby, if the decision went in the applicants' favour. It was also pointed out that the requirement of a verified translation has not yet been complied with. It was noted that a month's extension to the Section 20 period could be

bought as of right and Mr Stebbing said that the applicants may well do that.

The Law

11. The examiner has maintained that the application is excluded from patentability under Section 1 (2) of the Act as being no more than a mental act, a method of doing business or a computer program. The relevant parts of this Section read:-

“1 (2) It is hereby declared that the following (among other things) are not inventions for the purpose 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.”

12. These provisions are designated in Section 130 (7) as being so framed as to have, as nearly as practicable, the same effect as Article 52 of the European Patent Convention to which they correspond. I must therefore also have regard to the decisions of the European Boards of Appeal that have been issued under this Article.

Interpretation

13. At the hearing, Mr Stebbing accepted that in deciding whether an invention relates to one of the excluded areas “as such”, the test to be applied is whether the invention makes a “technical contribution”. This interpretation follows the decision of the Court of Appeal on a previous application made by the present applicant in *Fujitsu Limited’s Application* [1997] RPC 608 and which was stated as applying across all the excluded areas in a Patent Office Practice Notice issued 24th April 2002 entitled “Patents Act 1977 : interpreting Section 1 (2)” and I quote therefrom:

“....Accordingly (and unless and until the courts give any guidance to the contrary), the Office proposes to apply Aldous LJ’s comments on *Fujitsu* without treating them as subject to the earlier comments in *Merill Lynch*. This will mean, for example, that inventions **which involve a technical contribution** will not be refused a patent merely because they relate to business methods or mental acts. This position will be consistent with the Office’s existing practice on computer programs, and will align more nearly with practice under the corresponding provisions of the European Patent Convention.”

14. Whilst Mr Stebbing accepted that this application fell within the excluded fields, he attempted firstly to state that some aspects of the “invention” had a technical content before going on to argue secondly that a technical contribution was present. It is clear that whatever its applications, the results of the invention is a list of the orders of carrying out work and thus fully falls into the excluded areas of Section 1 (2) eg as a method of doing business or a mental act and as a program for a computer.

15. Thus the question to be decided is, therefore, is there a technical contribution that will make the application a patentable invention?

The Argument

16. The precedent cases which were either referred to in the prosecution of the application or the hearing were as follows:

Fujitsu Limited's Application [1997] RPC 608

Wang [1991] RPC 463

Merryl Lynch's Application [1989] RPC 561

Gales Application [1991] RPC 305

Quigley's Application [1977] FSR 373

Lux Traffic v. Pike Signals [1993] RPC 107

Sohei [1996] EPOR 253 (T769/92)

Vicom Systems Inc [1987] 1 OJEPO 14

Koch & Sterzel [1988] 1-2 OJEPO 19.

17. Before going on to discuss these, it is worth looking closely at the application and getting clear in one's mind what is being claimed. The output data produced is shown in Figs 6 & 13 for the particular embodiments of assigning a crew to various flights. At the start is shown what is called "identification number of crew pattern". This is followed by "number of days in the crew pattern", on which days the schedule takes place and finally the flights to be performed in the order they are to be performed.

18. Fig 6 shows that pattern 1 can perform flight B after flight A on days 1, 3 & 5 and pattern 2 that flight C can be performed after A on days 2 & 4. Similarly Fig 13 shows a single crew pattern which on days 2 & 3 would allow flights C after B after A and on the second day of this pattern ie days 3 & 4, flights E after D. In other words, neither Figure is actually assigning or doing work but merely stating which work could be performed after another piece of work. Clearly, as far as the method is concerned, one crew would appear to be able to fly A+B on days 1, 3 & 5 followed by A+C on days 2 & 4 or A+B+C on days 2 & 3 or one crew could fly A+B+C on day 2 followed by D+E on day 3 with a second crew flying A+B+C on day 3 followed by D+E on day 4. That is, with respect to Fig 13, the same crew cannot fly both A+B+C and D+E on day 3. How you make the decisions as to which crew(s) you actually assign and what flights they make or how many days a pattern spans is not set out in the application. Presumably this depends on how long they are allowed to fly, holidays and the costs of hotels versus flying them back to the home base, etc. That is decisions outside the apparatus or method or program of the invention.

19. So, what is clear is a) the product is just a list of what work could be done after what other piece(s) of work(s) and b) whether you link one day's work with another day(s) work(s) is purely optional and arbitrary.

20. Whilst not directly argued either at the hearing or the correspondence, it is clear that the "invention" defined by the claims is novel, involves an inventive step and would appear capable of industrial application. Whilst the examples given are relatively simple to enable the systems to be understood, it is clear that the application to the field of airline operations at

least is an extremely complex one and one in which computers have been used for a long time to solve the scheduling problems. As set out in the specification and as detailed by the cited prior art, it is clear that previous solutions resulted in taking each piece of work for one day and looking to see which other piece(s) of work could be performed thereafter on that day. After this, the same process was repeated for the next day and so on until the time period of the schedule (normally one month) was completed. This, if you like, involved a linear type of programming and needed a lot of processing to reach an optimal solution. The applicants' solution is to look at all days that a piece of work needs doing and to see what other piece(s) of work can be linked on these days and then to see which other piece(s) of work on which other days can be linked thereafter - if you like, a sort of parallel processing linking a plurality of days together. This is then repeated until all days on which that work is performed are fully linked. Clearly, this solution leads to a reduction in the total numbers of combinations which need to be considered and results in less processing time being needed compared with the prior art. This is what is said in lines 10-15 on page 5 and lines 16 to 27 on page 46 of the specification as originally filed.

21. This is what Mr Stebbing effectively said at the hearing - "the present invention reduces the load on a computer compared with the acknowledged prior art. So by making more efficient use of computer resources, I would say the present invention may have a technical effect". This was seen by Mr Stebbing as one of three possible ways of providing a technical effect - 1) the result of the processing 2) causing the computer to operate in a different way or 3) the field of work carried out.

22. I think that in this application, 3) can be disregarded since whatever the technical fields the invention of the application could be used with, the actual item produced is just a list which is clearly in the excluded fields of Section 1 (2). The same is true of 1) also.

23. I shall now turn to see what guidance the precedent cases give as to what constitutes/can constitute a technical contribution. It is worth noting that both Nicholls L J in *Gale & Aldous L J in Fujitsu* had "difficulty in identifying clearly the boundary line between what is and what is not a technical contribution". What is clear is, as has been said many times, each case must be decided on the particular facts of the case.

24. The granddaddy of all decisions is *Vicom* which has been referred to many times and which Mr Stebbing firstly referred to, along with *Koch & Sterzel*, as an example of the first kind of technical effect. *Vicom* is perhaps better known for Fox L J's comments in *Meryll Lynch* "...Decisive is what technical contribution the invention makes to the art." There must, I think, be some technical advance on the prior art in the form of a new result (eg a substantial increase in processing speed as in *Vicom*)."

25. Whilst it is true that the board did mention this "increase in processing speed" within the body of the *Vicom* decision, this "increase in processing speed" was not given as a reason for allowing the appeal, rather, as stated by the appeal court in *Fujitsu*, "in *Vicom* the technical contribution was provided by the generation of the enhanced display". In other words, that an increase in processing speed can provide a technical contribution has not been agreed by either the Courts or the EPO Board of Appeal.

26. Mr Stebbing then went on to discuss *Sohei* as an example of the second kind of technical effect. Decisions of the EPO Board of Appeal are not binding on me; rather, they

are persuasive where they do not run contrary to a UK court decision. *Sohei's* application was, in some respects, similar to the present one. *Sohei* related to a computer system for financial and inventory management which whilst using conventional computer parts, had a program requiring four memory areas and a special form displayed on the computer screen and providing a user interface for inputting information which was clearly new in the art. Mr Stebbing referred me to the Board's decision at 3.6 :-

“3.6 Against claims so generalised in the board's view, no objection that they relate only to "doing business" as such could be raised. In other words: in their generalised version as outlined above, the subject-matter of these claims would not be judged as being abstract or non-technical in the sense this is normally attributed to the subject-matter and activities excluded from patentability by Article 52(2) as such in accordance with Article 52(3) EPC. More particularly, the teaching to provide, in the memory, the afore mentioned five files intended for different purposes (as outlined in point 3.5) and to cause the processing unit to perform the afore mentioned five functions would clearly require technical considerations (in the sense mentioned under 3.3).

Still, the question remains what the effect of the de facto restriction of said first and second types of management to financial and inventory ones on this finding is.

In the board's view, by that restriction the subject-matter claimed only gains, in addition to the aspect, or component, ie the combination of features, which is not excluded as just outlined, a new aspect, or component, ie further feature(s), which as such would have to be regarded as being excluded from patentability. However, by this addition of a new component, or feature(s), non-technical as it may be, the afore- identified component found, as a technical component, not to be excluded from patentability, will not be reduced to zero but retained, at least implicitly, in the features of the subject-matter claimed.

The fact that the types of processing to be performed on the data files are specified, in the actual claims, more precisely than in the provisionally "generalized" claims should not change, in the board's opinion, the claimed subject-matter from one which is not excluded to one which would be excluded from patentability. It follows from the afore mentioned case law that subject-matter is not excluded from patentability if it involves, or implies, at least one aspect, or component, which is not excluded.”

27. This would seem similar to this application in the sense that in this application, the claims are to a generalised system, method and computer program to start with. However, in relation to *Sohei*, words have meaning and if the wording of a specific claim should be read more generally, it would very rarely be apparent what the actual scope of a claim was. Similarly, generalising what is being operated on means that what is being dealt with is merely data per se. Thus, whilst on the face of it, this appears similar to the applicants' case, the Board appear to have forgotten their own wording in *Vicom*. Whilst in paragraph 6 of *Vicom* they accept that a claim directed to a technical process in which a mathematical method is used does not seek protection for the mathematical method **as such**, in paragraph 7 they state:-

“7. In contrast, a “method for digitally filtering data” remains an abstract notion not distinguished from a mathematical method so long as it is not specified what physical entity is represented by the data and forms the subject of a technical process, i.e. a process which is

susceptible of industrial application.”

28. In other words, *Vicom* was patentable because it related to a technical field and not to data manipulation per se and *Sohei* would not seem therefore such a safe precedent to be persuaded by.

29. This brings me thus to *Fujitsu* itself. Mr Stebbing argued that this application was distinguished from *Fujitsu* in the sense that the only comparison there was between a previous manual method and a new computerised one whereas in this application, we are comparing a new computerised method with a previous computerised one ie to quote “ we are improving the usage of computer resources in an existing application.”. It seems to me wrong to say that you cannot have a patent the first time you computerise anything but can when you improve the program. I think the “test” in either case is the same - is there a technical contribution?

30. In the Court of Appeal it was held by Aldous L. J. in *Fujitsu* that “a claim to a computer operating in a particular way is no more patentable than a claim to a computer program. A claim to a method of carrying out a calculation (a method of performing a mental act) is no more patentable when claimed as being done by a computer than when done on a piece of paper. Methods of performing mental acts, which means methods of the type performed mentally, are unpatentable, unless some concept of technical contribution is present. Roch L. J. in the same case added “In my opinion, what the appellants have done here is no more than to produce, brilliant though it may be, a new computer program. The invention may be new but as it is no more than a computer program, it is not patentable.”. That was the reasoning in *Fujitsu*.

31. A similar statement was made in *Wang* ie Aldous J. said at page 473 “Claim 21 relates to a “computer system shell” using a conventional computer so programmed so that an expert can store his knowledge in a particular wayThe applicant submitted that the program containing the system shell combined and cooperated with the computer so as to produce a new machine, namely, a computer which could be used to be programmed with knowledge. ...Thus the applicant submitted that the claim had a technical effect, namely a new machine ready to be used in a novel way.

I cannot accept that submission. The machine, the computer, remains the same even when programmed. The computer and the program do not combine together to produce a new computer. They remain separate and amount to a collocation rather than a combination making a different whole. The contribution is, to my mind, made by the program and no more.”

32. Also, at pages 472 & 473 of *Wang*, he further stated “The fact that the scheme, rule or method is part of a computer program and is therefore converted into steps which are suitable for use by a person operating the computer does not matter. The method remains a method for performing a mental act whether a computer is used or not.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.”

33. Going back in time we have *Quigley* which was actually concerned with steel production ie technical but the contribution actually was, as stated by the Assistant

Commissioner for the Australian Patent Office, “He (Quigley) has merely devised a roster or schedule for his work force so as to obtain more work from a normal crew in a given period.” - page 376. Mr Stebbing put the point that this application was distinguished from *Quigley* by the fact that the operation there was purely manual - “there was not any use of a computer to determine anything”. However, as stated above in *Wang*, even when a computer is used, the method remains a method of performing a mental act or of doing business.

34. Mr Stebbing believed that this also distinguished his application from *Gale*. Whilst *Gale* had produced a new way of determining square roots which resulted in reduced processing time and claimed a RAM having such instructions, it was held to be no more than a computer program and therefore not held to be patentable in the Appeal Court. Whilst Laddie J. speculated in *Fujitsu* in the Patents Court that it appeared that *Gale* had been perhaps badly done to and also what the result would have been if a claim to a computer had been present (ie would such a claim have survived a Section 1 (2) attack?) he came down firmly in stating that the Appeal Court had no option but to find as they did ie *Gale*'s Application was not patentable. So again, whether a technical contribution was present in reducing processing time or speed was not discussed. It is interesting to speculate whether such a claim directed to the process of producing square roots reducing processing time would be deemed to relate to a technical contribution or not. It would seem clear that what you are doing is manipulating data per se and such would not seem to produce the necessary technical contribution. Whilst, as Mr Stebbing stated, claims to computer programs are acceptable, they are only acceptable as long as there is a technical contribution.

35. Mr Stebbing also thought his application was distinguished from *Meryll Lynch* for a similar reason also - “there was nothing said about the computer”. *Meryll Lynch* was an application directed to a data processing system for making a trading market in securities and took the line that whilst there must be a new technical result, the result must not itself be an item excluded by Section 1 (2) (c). However, whilst the Office seems, on the face of it at least, to have gone beyond this in some respects - looking to the Practice Notice referred to earlier - it is clear that the requirements are still the same - a technical contribution is required.

36. On the other hand, *Lux Traffic Signals* was held to be patentable and not a method of doing business as it provided a technical contribution to the known art - a controller with a single knob setting per set of lights in one case or the idea of regulating traffic by incorporating into a controller the idea of providing an extended green period if no traffic was detected by a detector in the other.

37. Thus, looking at the above cases, with the possible exception of *Sohei*, it is clear that where there has been seen to be a technical contribution in an otherwise Section 1 (2) excluded field (enhanced image in *Vicom*, single controller in *Lux 1* or detector used differently to extend control time in *Lux 2*), the applications have been accepted as patentable. On the other hand, where the invention has been directed to an excluded field of Section 1 (2) and the “new advance” has been seen to also be directed to one of the excluded fields, then the application has been refused.

38. Looking now at amended claim 1, it is clear that whatever the possible fields of use, the actual product is ‘a list of what work can be performed in what order and on which day(s)’ ie this clearly relates to a scheme, rule or method for performing a mental act or of

performing a business and is caught by the exclusion of Section 1 (2). The improvement in the non conditional part of claim 1 also clearly relates to a program for a computer and whilst it clearly is an improved, new and “inventive” program, it is never-the-less, a computer program which is excluded also by Section 1 (2). In the words of Roch L. J. in *Fujitsu*: “In my opinion, what the appellants have done here is no more than to produce, brilliant though it may be, a new computer program. The invention may be new but as it is no more than a computer program, it is not patentable.”

39. Whilst it has been postulated that an increase in precessing speed/reduction in processing steps could provide a technical contribution, that has not been given as an actual reason for finding a patent application patentable. It is not a path I feel able to follow without the courts providing further guidance in this direction. To some extent at least, any new computer program would be expected to result in less processing or smarter use of a conventional computer or there would not seem any point in making it. The mere fact that an otherwise unpatentable method or system can be implemented on a computer more efficiently than another does not in itself impart a technical contribution.

40. Thus, this aspect of the claims would not seem to define a patentable invention.

41. Considering now, what effect the ‘conditional part of the claim’ would have on this decision. It is clear that the actual method of linking days together is a standard and conventional computer technique and the decision whether to do so or not appears to be one made by the user of the computer rather than in the computer itself. Thus, even if occurring in every case, it would not seem to provide the necessary technical contribution.

42. Looking to the body of the specification, the only other process mentioned is the use of a genetic algorithm which is known from the cited JP prior art, inter alia, and again would appear to add nothing to the claims.

43. Similarly, independent claims 2 & 3 relating to a “work schedule generation method” and a “computer-readable storage medium” have no additional features over and above claim 1 and being on all fours with it would also not seem to have a technical contribution. Nor would there appear to be anything else in the application which could form the basis of a patentable invention.

Conclusion

44. I have found that the invention falls into the areas excluded from patentability as a method of doing business or performing a mental act or a program for a computer. Moreover, I have found that the invention does not make the technical contribution required to make an otherwise excluded invention patentable. I therefore refuse the application under Section 18 (3) on the grounds that the invention claimed therein is excluded under Section 1 (2) (c).

Appeal

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

D McMunn

Deputy Director acting for the Comptroller.