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28 September  
2006

## PATENTS ACT 1977

APPLICANT Yi Tang

ISSUE Whether patent application number GB  
0312402.1 complies with section 1(2)

HEARING OFFICER R C Kennell

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### DECISION

- 1 Patent application GB 0312402.1 was filed by Mrs. Yi Tang on 30 May 2003 claiming a priority date of 27 June 2002. The application was published as GB 2390191 A on 31 December 2003.
- 2 The examiner has reported that the application is excluded from grant under Section 1(2) of the Patents Act 1977. The examiner objected that the claimed subject matter related a method of doing business, mental act and/or a computer program. Furthermore, the examiner has reported that the claims are not limited to a single invention and thus fall foul of Section 14(5) of the Act; and also that one of the inventions lacks inventive step in the light of two prior US patent specifications.
- 3 Following several rounds of examination in which the examiner maintained his excluded matter objection, a hearing was offered in order to resolve the issue, with further consideration of the plurality of invention and inventive step objections being deferred. Mrs. Tang, who is not professionally represented, asked for the matter to be decided on the papers.
- 4 In a letter dated 9 September 2005, the examiner drew Mrs Tang's attention to a change in the Patent Office's practice in regard to the section 1(2) exclusions<sup>1</sup> following the decision of Peter Prescott QC, sitting as a Deputy Judge, in *CFPH LLC's Application* [2005] EWHC 1589 (Pat), [2006] RPC 5, and offered Mrs Tang an opportunity to make further submissions. Mrs Tang believed that her previous correspondence had dealt adequately with the matter.
- 5 Although Mrs Tang was willing to amend the specification to overcome plurality, in fact no formal amendments have been submitted. I therefore propose to consider the patentability of all the claims in the applications as

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1 See <http://www.patent.gov.uk/patent/notices/practice/examforpat.htm>

filed.

## **The application**

- 6 The application is directed to a voice-controlled business scheduling system which is principally intended to allow users to reserve and manage appropriate time slots. The background is described at paragraphs [0004] - [0013], where it is explained that previous proposals to use voice recognition techniques in business appointment and reservation systems, such as described in US patent specifications 2002/0035493 A1 and 2001/0047264 A1, have failed to give telephone callers a speed and user-friendliness comparable to those of point-and-click techniques via a graphic user interface. The invention is stated at paragraph [0008] of the application to improve on simple “bingo play” techniques, where a user requests a specific time first and, if the time is not available, the process is repeated until a time that is available is found. Rather, the invention allows a user to find his/her preferred time slot by providing search options for a user selected range.
- 7 To achieve this, it has been necessary to design a fast database searching algorithm and support it with a natural language voice interface that gives sufficient information to the user without overwhelming him, so as to enable the transaction to be successfully concluded. As the application explains at paragraphs [0014] – [0015], the scheduling system of the invention is a “virtual administrator” which emulates a human administrator in charge of keeping business schedules.
- 8 There are five independent claims. Claim 1 (and corresponding system claim 7) defines a method of reserving a time slot by offering a user a search range (e.g. would you like to come in the month of May or June?) and then providing search options for the user selected search range (e.g. preferred time, date, and earliest available time slot in May). Available time slots closest in time to the user’s selected search options - for a selected range - are identified and subsequently reserved if chosen by the user. Claim 1 reads:

“A method of automating business scheduling using a natural language voice user interface through which a user accesses a scheduling database to search availability and reserve a time slot based on preferences of said user, said method comprising:

  - (a) through said natural language voice user interface providing to said user at least one available search range for said user selection thereof;
  - (b) through said natural language voice user interface providing to said user a plurality of search options for said user selection thereof, said plurality of search options including search on preferred date, preferred time of day, and earliest available time slots;
  - (c) through said natural language voice user interface obtaining said user's preferences as required by a selected one of said plurality of search options selected in step (b);
  - (d) searching said scheduling database for available time slots by applying said selected one of said plurality of search options within a selected one of said at least one available search range selected in step (a) in order to produce a search result;
  - (e) selecting a plurality of available time slots from said search result, said plurality

of available time slots being closest in time to said user's preference, a total number of said plurality of available time slots not exceeding a predetermined value;

(f) through said natural language voice user interface providing to said user said plurality of available time slots for said user selection of a chosen time slot;  
(g) reserving said chosen time slot in said scheduling database for said user; and  
(h) repeating steps (a) through (h), if said search result from step (d) contains no available time slot or if no said plurality of available time slots is chosen by said user in step (f), and only if a predetermined number of repetitions of steps (a) through (h) has not been exceeded.”

- 9 Claim 13 provides a method for a user to cancel an appointment. Claim 13 reads:

“A method of automating cancellation of business schedule using a natural language voice user interface through which a user accesses a scheduling database to cancel an appointment or reservation made for said user, comprising:  
(a) through said natural language voice user interface obtaining an identity from said user;  
(b) validating said identity for authorizing access by said user to said scheduling database,  
(c) searching said scheduling database for an appointment or reservation associated with said identity,  
(d) through said natural language voice user interface presenting to said user said appointment or reservation for confirmation by said user on cancellation thereof,  
(e) canceling in said scheduling database said appointment or reservation associated with said identity upon said confirmation.”

- 10 Claim 15 defines a method for a user to call a selection of telephone numbers by voice command. For example, this allows an administrator to call and remind a selection of users who have upcoming appointments. Claim 15 reads:

“A method, using a natural language voice user interface, for a user to dial selectively a list of telephone numbers by voice command in one call, comprising:  
(a) selecting a telephone number with an identity from a list of telephone numbers;  
(b) through said natural language voice user interface presenting to said user said identity or said telephone number for a confirmation by said user on dialing said telephone number;  
(c) setting up a call from said user to said telephone number upon said confirmation;  
(d) upon termination of said call repeating step (a) through (d) until all numbers in said list of telephone numbers have been processed.”

- 11 Claim 17 defines a system which allows an administrator to check, block, unblock, cancel and fax information for a specified time range. Claim 17 reads:

“A system for business schedule administration using a natural language voice user interface through which an administrator accesses a scheduling database to check schedule, to unblock/block schedule, to cancel schedule, and to fax a schedule listing, comprising:  
(a) first means, using said natural language voice user interface, for obtaining an identity from said administrator and for validating said identity for authorizing access by said administrator to said scheduling database;  
(b) second means, using said natural language voice user interface, for presenting

to said administrator a plurality of administration tasks for selection thereof, said plurality of administration tasks including checking schedule, schedule blocking, schedule unblocking, schedule cancellation, and sending fax of scheduling list;

(c) third means, using said natural language voice user interface, for obtaining said administrator's input specifying a time range in which a selected one of said plurality of administration tasks selected by said second means will be performed;

(d) fourth means, using said natural language voice user interface, for presenting to said administrator scheduling status information for said specified time range;

(e) fifth means, using said natural language voice user interface, for accessing said scheduling database and for unblocking all time slots within said specified time range;

(f) sixth means, using said natural language voice user interface, for accessing said scheduling database to cancel all appointments or reservations found within said specified time range;

(g) seventh means, using said natural language voice user interface, for accessing said scheduling database to block all time slots within said specified time range;

(h) eighth means, using said natural language voice user interface, for accessing said scheduling database to compile and send a fax of scheduling information of said specified time range, said fax being sent to either a predetermined fax number or a fax number provided by said administrator via said natural language voice user interface."

- 12 It will be seen that these claims are not simply related to the scheduling of appointments, and cover a number off ancillary aspects to the management of an appointment and reservation system. However, all except claim 15 involve automating business scheduling by using a natural language voice interface to access and search a scheduling database. Claim 15 of itself has nothing to do with scheduling, since it involves nothing more than using a voice interface to call up telephone numbers from a list (and indeed the examiner has objected that it relates to a separate invention). Further, Figures 12A and 12B illustrate the use of the voice interface for subscription or sign-up to various services, and this is not reflected in any of the claims.

### The law on excluded matter

- 13 The examiner has reported that the application is excluded from patentability because it relates to a scheme, rule or method for performing a mental act, or doing business or a program for a computer as such. This objection is based upon Section 1(2) of the Act. The relevant parts of this Section (emphasis added) state that:

"1(2) 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 –

.....

(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.**"

- 14 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 (EPC), to which they correspond. The courts have frequently stressed the desirability of a uniform interpretation, and I must therefore also have regard to the decisions of the Boards of Appeal of the European Patent Office that have been issued under this Article in deciding whether the invention is patentable. However, although they are persuasive, I am not bound to follow them.

#### Interpretation of the law

- 15 As I have explained above, the test for patentability which I should follow is now that put forward by the Deputy Judge in *CFPH LLC's Application* where (at paragraph 95) he advocated a two-step test as follows:
- (i) Identify what is the advance in the art that is said to be new and not obvious (and susceptible of industrial application).
  - (ii) Determine whether it is both new and non-obvious (and susceptible of industrial application) under the description of an "invention" in the sense of Article 52 of the European Patent Convention – which Section 1(2) reflects.
- 16 Once the new and non-obvious advance has been identified, the Deputy Judge suggests that it will often be possible to determine whether this was an advance under the description of an invention by asking "is this a new and non-obvious advance in technology". However, because of the possible difficulty in determining what is meant by technology, the Deputy Judge says (see paragraph 97) that if there is any doubt in this regard then it will be necessary to have recourse to the terms of Article 52 of the EPC. I should mention that there have been a number of recent decisions issued by the High Court<sup>2</sup> to which Mrs Tang has not been referred. I do not see any need, and do not propose, to refer to these decisions in any detail, because I do not think they add anything to the arguments before me. I merely note that, without disagreeing with the approach in *CFPH*, they reinforce the need generally for the invention to make a technical contribution or have a technical effect in order to pass the test for patentability.
- 17 In applying the *CFPH* test, I believe that it is still the substance of the invention that is important rather than the form of claim adopted. As explained in paragraph 7 of the Patent Office's notice, UK and European case law has consistently held that a non-patentable invention cannot be rendered patentable simply by claiming it in a different guise.

#### **Step 1 of *CFPH* – identifying the advance**

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<sup>2</sup> *Halliburton Energy Services Inc. v Smith International (North Sea) Ltd* [2005] EWHC 1623 (Pat), [2006] RPC 2; *Shopalotto.com Ltd's Application* [2005] EWHC 2416 (Pat), [2006] RPC 7; *Crawford's Application* [2005] EWHC 2417 (Pat), [2006] RPC 11; *Inpro Licensing SARL's Patent* [2006] EWHC 70 (Pat), [2006] RPC 20; *Macrossan's Application* [2006] EWHC 705 (Ch)

- 18 It does not appear to be in dispute that the invention is implemented by standard hardware and data processing techniques. As has been explained in the examination reports, interactive voice response systems are well known and the specific techniques used to implement the voice user interface - ASR (Automatic speech recognition), TTS (Text to Speech) and VoiceXML (Voice Extensible Markup Language) are standard. Accordingly, following the *CFPH* test, the examiner considered that the advance was in an excluded field since it lay not in the voice interface itself but in its application to the administration of a business by managing the appointments system. Mrs Tang, although maintaining that the invention had a technical effect (for reasons which I will deal with later), did not specifically identify where the advance might lie for the purposes of the *CFPH* test.
- 19 I agree with the examiner. In my view, having regard to the prior art mentioned above (which is also the nearest art found as a result of the official search), the advance at least as regards claims 1/7/13/17 does indeed lie in the application of natural language voice techniques to the management of business appointments and reservations so as to provide a more efficient and user-friendly system.
- 20 On the face of it, this is not necessarily the same for claim 15. However, although it has not been searched or examined, it seems to me that a claim of this breadth cannot be supported by the description. The only mentions in the description of dialing a list of telephone numbers by voice command occur at paragraph [0025], which merely states that “the system” is capable of initiating automated telephone calls to send reminders to users who have made reservations or appointments, and the embodiment of Figures 11A – E, which shows this feature but only as part of a comprehensive system for administering appointment status. Further, Mrs Tang has stated that claim 15 is directed to “the administration function of the appointment system” and is willing to amend it accordingly (see her letters of 8 April and 20 August 2004). It seems to me that for any claim which the description could support, the advance will still be as stated in the previous paragraph. I will proceed on that basis.

### **Step 2 of *CFPH* – is the advance patentable?**

- 21 I must now consider the second step of the *CFPH* test and decide whether the said advance is under the description of an invention within the terms of section 1(2). Since *CFPH* came on the scene relatively late in the processing of the application, the arguments before me are almost entirely on the basis of the law prior to *CFPH* and whether a technical contribution is present. As I have explained above, case law since *CFPH* has made clear that the matter still essentially boils down to whether the invention makes a contribution of a technical nature, and so that does not of itself negate these arguments. However, my approach to them must be based on the *CFPH* test.
- 22 There has been a substantial correspondence between the examiner and Mrs Tang but I do not think I need to go through it in detail in this decision. The course of the argument between them is summarized in the examiner’s report of 20 September 2004 and Mrs Tang’s reply of 17 December 2004, and I will

try to distil from that the main points of the argument.

- 23 In response to the examiner's objection under s1(2), it seems to me that Mrs Tang's argument boils down in essentials to the following:
- i. The invention is not a business method because it is method of making business appointments which does not necessarily produce a business result.
  - ii. The invention is not a computer program in the light of the decision of the EPO Board of Appeal in *Texas Instruments* (T 0236/91), where a technical effect was held to be present because it allowed the use of natural language to input data to a computer in order to operate it; the present case is analogous because it allows a telephone caller to operate a computer via natural language.
  - iii. A technical result was present because there was improved man-machine communication which benefited the caller by providing a quicker scheduling process.
  - iv. The invention extends beyond a computer program because it has spatially-discrete components other than a computer, the process of the invention would not work without human involvement and the invention is not merely concerned with improving the performance of a computer.
  - v. The invention was distinguished from Office decisions cited by the examiner: *Ford Motor Company* BL O/010/03 and *Fujitsu* BL O/125/04 concerning scheduling systems, and *Dell USA* BL O/432/01 which related to an online interface for ordering a customized computer.

#### Business method

- 24 On point (i), whilst I accept that the invention, however claimed, fundamentally relates to an administrative procedure, this may not be enough of itself to make it a scheme, rule or method for doing business as such. Mrs Tang argues that although the system is described as a business scheduling system, this is merely intended to distinguish it from personal scheduling systems, and the fact that it is something used by business to improve efficiency does not automatically categorise it as a business method. As she argues, making a business appointment does not of itself involve a business transaction or any exchange of value between the parties. This is to be distinguished from, e.g., on-line auction systems which will necessarily complete a business activity related to an auction business.
- 25 I do not think that Mrs Tang's argument can be supported when regard is had to the previous case law as explained in the "Manual of Patent Practice" (see paragraphs 1.23 – 1.25). Thus, schemes or methods of bookkeeping or carrying out "other commercial procedures" have been excluded, and "doing business" has been considered to embrace purely organizational and managerial activities. Further, if Mrs Tang's argument is carried to its logical

conclusion, it seems to me that the exclusion would be limited only to carrying out the specific activity which the organization is in business to do. I think that is too narrow. As is stated at paragraph [0002] the invention is to be used by “any business where services are provided on an appointment/reservation basis”, doctors, hairdressers, restaurants and sports centres being exemplified. To my mind, for businesses of this nature, the appointment system is an essential part of the way in which they do business with their clients and customers.

- 26 Turning to the cases mentioned at point (v), I do not gain any particular assistance from the *Ford Motor Company* and *Fujitsu* decisions, which appear to have been cited by the examiner mainly as examples of scheduling systems which have been refused as business methods. *Ford* relates to creating items according to a schedule based on the location to which the items are to be transported, and *Fujitsu* (which was also refused as a mental act and a computer program) to producing a work schedule for assigning aircrews to flights. Neither appears particularly close to the present system.
- 27 *Dell USA* was cited by the examiner to reinforce the point that the invention was doing essentially what a receptionist would do when scheduling an appointment, since the computer was merely advising on possible options and leading the customer through them to arrange an acceptable time. In *Dell USA*, refusing an application for an online interface for ordering a customized computer, the hearing officer held that the computer was doing nothing more than what a “respectable salesperson” would do as a matter of business practice. Mrs Tang appears to distinguish the case on the grounds that a receptionist is not equivalent to a salesman, but I do not think that is at all a relevant distinction. The receptionist is still involved in generating custom for a business which, as I have pointed above, relies on an efficient appointments system.
- 28 On the basis of the above I would be prepared to find that the invention related to a method for doing business as such. However, I should add that in one of the recent cases on section 1(2) mentioned above, *Macrossan’s Application* [2006] EWHC 705 (Ch), the decision of Mann J could be seen as lending some support to Mrs Tang’s arguments. *Macrossan* concerned an automated method of acquiring the documents necessary to start a company. On whether this constituted a business method, the judge stated at paragraphs 29 – 30:

“29. Mr Macrossan says that the hearing officer erred in this respect. He says that what the legislature had in mind was something abstract in nature, and the invention did not fall within that category. In addition, even if the invention could fall within the words, the bar did not apply to partial methods of doing business, and that is the most that could be said of the invention under this head if the head applied at all. He sought to draw a parallel with using a telephone in business. The fact that a telephone might be used in business ought not to exclude it from patentability on the “method of business” ground.

30. .... However, I consider that in this case the hearing officer erred in her reasoning and answer. She seems to have relied heavily on the fact that the activity in question is carried out for remuneration by solicitors. That is true,



but it does not mean that the invention embodies a “scheme or ... method ... of doing business” within the Act. The activity involved in the invention is a business service, or end product, for which the customer is prepared to pay and for which the customer contracts. That may entitle the invention to the title “a method of providing business services”, but that is not what the exclusion in the Act is aimed at, in my view. The exclusion is aimed more at the underlying abstraction of business method – the market making technique in *Merrill Lynch’s Application* [1989] RPC 561; or the way of doing the auction in *Hitachi T258/03* (EPO Board of Appeal, 21<sup>st</sup> April 2004). In *CFPH* Mr Prescott identified joint-stock companies themselves as being methods of carrying out business – see paragraph 41 of his judgment. That has the necessary level of abstraction or method (business method). The invention in the current application does not. It is merely a facility which might be used in a business; or, to put it another way, a tool. That cannot be said of the inventions in *Merrill Lynch* and *Hitachi*. In those cases the inventions were more than a tool – they were ways of conducting the entire business in question. Again, in *Pensions Benefit Business Partnership* (T931/95) the Technical Board of Appeal held that the operation of a pensions scheme on a computer amounted to a method of doing business. In doing so it said that “All the features of this claim are steps of processing and producing information having purely administrative, actuarial and/or financial character. Processing and producing such information are typical steps of business and economic methods.” While that does not claim to be, and should not be treated as, a definition of “a method of doing business it still, to my mind, captures something of the essence of the point. .... “

- 29 This case, which is currently under appeal to the Court of Appeal, has not previously been drawn to Mrs Tang’s attention and I should not base my decision on it without giving her an opportunity to comment. In fairness to her, whilst I would still be inclined to find against her because (in line with my view above) I would see the invention much more as a way of conducting the entire business in question than as a mere ancillary tool or service, I will make no decision on whether the invention is excluded as a business method. It is in any case not necessary for me to decide the point, because, as will be seen below, I consider that the application is excluded under other heads of section 1(2).

#### Computer program

- 30 On point (ii) I do not think it follows from *Texas Instruments* that there is necessarily a technical effect because the computer allows the use of a natural language to input data into a computer in order to operate it, or because a software-based application is controlling an external process existing outside the computer. *Texas Instruments* relates to a menu-based system which enables an operator to make a multi-word input by entering words or phrases from each of a plurality of sequentially presented menus, second and subsequent menus being determined by the selection from at least one earlier menu. The system stores a lexicon of words and phrases together with their linguistic category and the grammatical rules of the natural language being used; parses the partial sentence formed at each stage in response to the linguistic category of words or phrases previously selected in order to select the next menu; and translates the final parsed sentence into a command executable by the computer.

- 31 I do not find the reasoning of the Board easy to follow, but as I read it they considered that there was a technical effect because the ad hoc creation of menus by parsing at each stage meant that the internal working of the computer was not conventional, and because the inputting of the parsed complete sentence as a command for execution could not be regarded as generally or fundamentally non-technical, unlike say the inputting of text for editing purposes. However, I am not bound by this decision and I do not in any case think it carries over to the present case when that is analysed in accordance with *CFPH*.
- 32 Thus, as I have stated above the advance in my view lies in the application of natural language voice techniques to the management of business appointments and reservations so as to provide a more efficient and user-friendly system. It seems to me that as a matter of substance this advance is nothing to do with technical features, such as the computer operating internally in a new technical way or the components of the system networking with each other, but rather is brought about by the way in which the system has been programmed. As I have mentioned above, the system uses standard hardware and data-processing techniques, and also it is admitted at paragraph [0011] of the application that the invention essentially relies on a database searching algorithm.
- 33 Further, I do not think any of points (ii) – (iv) above entail a technical contribution when regard is had to where the substance of the invention lies. Nor am I persuaded by a suggestion made by Mrs Tang that, like *Texas Instruments*, a software-based “speech application” is controlling a process which exists outside the computer. That may be a factor in deciding where the advance lies, as is apparent from paragraph 104 of *CFPH*. As the Deputy Judge explains:
- “... The question to ask should be: is it (the artefact or process) new or non-obvious merely *because* there is a computer program? Or would it still be new and non-obvious in principle even if the same decisions and commands could be taken and issued by a little man at a control panel, operating under the same rules? For if the answer to the latter question is ‘Yes’ it becomes apparent that the computer program is merely a tool, and the invention is not about computer programming at all. ...”
- 34 However, whatever may have been the case in *Texas*, it seems to me that in the present invention the “little man” test breaks down. The whole point of the invention is to replace the human operator by a database searching algorithm which can work with standard voice recognition techniques in a better way than previous proposals to use these for appointment and reservation systems.
- 35 The invention is therefore essentially about how the computer is programmed, and accordingly I find that it relates to a computer program as such.

#### Mental act

- 36 This objection has not been developed in any great detail, but the examiner considers that searching algorithm goes through a routine of presenting

options and asking questions which constitutes a mental act and (as the application admits) emulates what a human receptionist does. I agree, and therefore find that that the invention also relates to a mental act as such.

### **Conclusion**

- 37 I have decided that the invention is excluded under section 1(2) because it relates to a program for a computer or to a method for performing a mental act as such. I believe that it would also fall to be excluded as a method for doing business as such, but for the reasons explained above I am not basing my decision on that aspect.
- 38 I have read the specification in its entirety and cannot identify anything that could form the basis of a patentable invention. I do not therefore see any need to consider further the outstanding objections to plurality of invention and to lack of inventive step. I therefore refuse the application under section 18(3).

### **Appeal**

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

**R C KENNELL**

Deputy Director acting for the Comptroller