BL O/253/06

7th September 2006

PATENTS ACT 1977

APPLICANT Dr Ward Goldthorpe

ISSUE Whether patent application number GB 2400948 complies with section 1(2)

HEARING OFFICER P Marchant

DECISION

Introduction

1 The invention relates to a computer based system for representing the activities, processes, datasets and knowledge of an organisation in real time and its use to manage those activities, processes and information.

2 The examiner has objected that the invention is excluded from patentability because it falls within the area of non-patentable subject matter set out in section 1(2) of the Act. This issue has been addressed in six examination reports dated 11 January 2005, 26 April 2005, 7 July 2005, 15 September 2005, 22 November 2005 and 3 May 2006. Dr Goldthorpe has argued to the contrary in his responses of 14 June 2005, 26 August 2005, 4 November 2005, 4 January 2006, 14 March 2006 and 22 May 2006.

3 The applicant and the examiner have been unable to agree on this point, and the matter has come before me to consider on the papers. Dr Goldthorpe was given an opportunity to file any final submissions he might wish to make, and did so on 27 July 2006.

The invention

4 The technical field of the invention is stated on page 1 of the specification to be as follows. Reading from line 6:

> "The present invention relates to the management of knowledge about and contained within an enterprise and its processes and more specifically to computer-assisted enterprise knowledge management methods. In particular the invention is directed to a method and system using a computer network to dynamically replicate the fundamental

knowledge structure of processes, systems of processes, and knowledge interrelationships within the system of processes. The invention is also directed to facilitating knowledge worker productivity and organisational learning through the capture, use and transfer of knowledge about and contained within the system of processes constituting an enterprise."

5 I should make clear that I refer here to the original specification as it was published under the Patent Cooperation Treaty, and as it entered the national phase in the United Kingdom. Amendments to the specification which have been filed subsequently have been objected to by the examiner as disclosing additional matter extending beyond that in the original application, contrary to section 76 of the Act. Dr Goldthorpe has argued that new passages in the specification and claims do not add new subject matter. The examiner deferred consideration of this point pending resolution of the patentability issue in his report of 15 September 2005 and the question consequently remains open. I have therefore referred in this decision to the specification and claims of the original disclosure.

6 Returning to the invention; the specification explains, on page 3, that a "universal framework" is first created for dynamically building a model of the enterprise in real time. Figure 2 and the description from page 8, line 4, describe an example of a universal framework on which such a model can be based. In the example, five components are proposed; enterprise knowledge threads, immutable process representation, process classification scheme, knowledge association scheme and process iteration classification scheme. The model represents the enterprise as an evolving system of interconnected processes and knowledge domains. It explains that the model is stored and made available to members of the enterprise and to computer applications, which use it to manage execution of processes and knowledge relating to processes.

7 Original claim 1 reads:

"A method of using a computer network for modelling an enterprise as an evolving system of interconnected processes and knowledge domains, comprising:
creating a universal framework that defines the structure and representation of processes, knowledge, and interrelationships between processes and knowledge in said enterprise;
dynamically building a model of said enterprise in real time utilising said universal framework, said model being initialised with at least one seed process; and
dynamically storing said model on a database;
wherein processes are added to said model in real time either manually by authorised members of the enterprise as users of said computer network or programmatically by computer program applications running on said computer network."

8 Original claim 3 reads:

"A method for performing systemic knowledge management in an

enterprise using a computer network, comprising:
creating a universal framework that defines the structure and representation of processes, knowledge, and interrelationships between processes and knowledge in said enterprise;
dynamically building a model of said enterprise in real time utilising said universal framework, said model representing said enterprise as an evolving system of interconnected processes and knowledge domains
dynamically storing said model on a database; and
managing execution of processes, and managing knowledge about and contained within processes and systems of processes in said enterprise utilising said model in real time."

9 In summary, the disclosure common to the inventions claimed in claims 1 and 3 relates to modelling in real time, and as an evolving system, the structure, knowledge, processes and interrelationships between processes within an enterprise, on a computer system. Claim 1 further relates to building the model in real time by adding representations of further processes, while claim 3 further relates to the use of the model in real time to manage processes and to manage knowledge about processes.

10 There are other independent claims which relate to different aspects of the invention but contain the same key features as claim 1 or claim 3. Claim 9 elates to a computer system for modelling an enterprise as an evolving system, claim 12 to a knowledge management system for enabling systemic knowledge management in an enterprise, and claims 16 and 19 to computer program products embodying different aspects of the invention.

The Law

11 The provisions in the Act relating to excluded matter appear in section 1(2) which reads:

Section 1
(1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say-
(a) the invention is new;
(b) it involves an inventive step;
(c) it is capable of industrial application;
(d) the grant of a patent for it is not excluded by subsections (2) and (3) or section 4A below;
and references in this Act to a patentable invention shall be construed accordingly.

(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 -
(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 that thing as such.

12 Subsection 1(3) and section 4A are not relevant to the present case.

13 These provisions are stated, in section 130 of the Patents Act, to be formulated so as to have the same effect as the equivalent provisions of (inter alia) the European Patent Convention ("EPC"), that is to say, Article 52 paragraphs (1), (2) and (3) of the EPC. I take this to mean that in assessing patentability, one must have regard primarily to the Patents Act and to the precedents on its interpretation provided by judgments of the UK courts. By following the guidance in these judgments, EPO decisions will also be taken into account to the extent intended and approved by the UK courts. Furthermore, decisions of the EPO Boards of Appeal are of persuasive value and so far as they are consistent with the interpretation applied by the UK courts, can be taken into account directly.

14 The current interpretation of these patentability provisions in the Patent Office is based on the judgment of Mr Peter Prescott QC sitting as a deputy judge in the *CFPH*[1] case. In that judgment, in paragraph 95, he made the following observation and proposed this two-part test:

> "A patentable invention is new and non-obvious information about a thing or process that can be made or used in industry. What is new and not obvious can be ascertained by comparing what the inventor claims his invention to be with what was part of the state of the existing art. So the first step in the exercise should be to identify what it is the advance in the art that is said to be new and non-obvious (and susceptible of industrial application). The second step is to determine whether it is both new and not obvious (and susceptible of industrial application) under the description 'an invention' (in the sense of Article 52). Of course if it is not new the application will fail and there is no need to decide whether it was obvious."

15 This test has been adopted by the Patent Office, as has been explained in the Patent Office Notice: "Patents Act 1977: Examining for Patentability" issued in July 2005. Since then, there have been a number of further cases on excluded inventions in the Patents Court which have confirmed this approach. In one of the most recent, *RIM v Inpro*[2], Pumfrey J said; reading from paragraph 185:

> "There has been a flurry of cases on this provision recently, all of which have been concerned with the exclusions relating to methods of

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1 *CFPH LLC's Application* [2005] EWHC 1589 (Pat)
2 *Research in Motion UK Ltd v Inpro Licensing* [2006] EWHC 70

performing mental acts, or doing business, playing games and programs for computers:…" (he lists *Fujitsu*[3], *Halliburton*[4], *Crawford*[5], *CFPH* and *Shopalotto*[6] and continues in paragraph 186) "…It is now settled, at least at this level, that the right approach to the exclusions can be stated as follows. Taking the claims correctly construed, what does the claimed invention contribute to the art outside excluded subject matter?"

16 This confirms that the case law has continued since *CFPH* to underline the approach taken there, that one must determine the contribution to the art and if it falls solely within excluded subject matter, the invention is excluded by section 1(2). If it falls outside those exclusions, then it is patentable as far as the provisions of section 1(2) are concerned.

17 Finally while discussing the law, it may be worth emphasising a point regarding the construction of claims, that is to say the analysis of their wording in order to determine the scope of the invention. The invention is defined in a patent by the wording of the claims, and is taken to include all configurations and arrangements which fall within that scope. The wording of the claims is interpreted having regard to the remainder of the specification, as is provided in section 125(1) of the Act, but is construed, broadly speaking, so as to have the widest scope consistent with that interpretation. The implication of this is that, as discussed below, a term used in the claims may include within its scope arrangements which extend beyond those described in the specification by the author.

The advance

18 Applying the test in *CFPH*, it is necessary to assess what the advance in the art is that is said to be new and non-obvious, and determine whether the advance is new and non-obvious under the description of an "invention" in the sense of Article 52.

19 It is evident from the *CFPH* judgment that it is not essential to determine the most relevant prior art, but it is useful to do so if prior art is available. Prior specification WO 01/15042 was cited by the examiner in his first examination report. It relates, as set out in its claim 1, to "An ontology-driven information system, comprising: a plurality of models, each of the plurality of models expressing an aspect of a business domain using concepts and relationships between concepts; and an ontology in communication with each of the plurality of models, the ontology providing uniform definitions for the concepts and relationships between concepts used in the plurality of models." It is explained on page 5 of this specification that an ontology; "… is a collection of concepts and contexts used to provide a common vocabulary for defining rules, querying disparate data sources and making actionable recommendations." "Actionable recommendations" refers to the purpose of this system which is to recommend

3 *Fujitsu Limited's Application* [1997] RPC 608
4 *Halliburton Energy Services, Inc v Smith International* [2006] RPC 2
5 *Crawford's Application* [2006] RPC 11,
6 *Shopalotto Ltd's Application* [2006] RPC 7

purchases to Internet customers on the strength of purchases they have already made.

20 This prior art also discloses the modelling of aspects of an enterprise, but as Dr Goldthorpe has pointed out, does not disclose modelling of an enterprise as an evolving system of interconnected processes and knowledge domains, as is required in the claims of the present application. I accept that the present invention is distinguished in that respect from this prior disclosure.

21 Other respects in which Dr Goldthorpe considers his invention to be distinguished do not appear to me to be so clear cut. For example the description on page 5 of the prior specification explains that the system; "… uses business rules that are constructed using ordinary terms that can be changed on the fly by a non-technical business user…" He did not consider this to relate to "real time" operation in the sense used in his own specification. However, since the meaning of "real-time" does not appear to be restricted in the present disclosure, the term may be taken to include a range of different activities, possibly including the process described in the prior specification, as is consistent with the principle of construction of claims mentioned above. On another point, he also took the view that since the prior art discloses modelling of a number of individual business activities but not the whole enterprise, it does not anticipate the "whole enterprise" aspect of the invention. However "enterprise" is defined on page 5 of the present specification as including "a part or subset of a larger enterprise", so this interpretation is also open to question.

22 Distinctions of this sort would, I think, require evidence from a skilled addressee to explain what was understood by various terms in order to determine the precise scope of the present claims and the extent to which the features in them have already been disclosed in the prior art, but I do not think it is necessary for me to investigate this in detail for present purposes.

23 On the above assessment I consider that the invention is concerned with the use of computer systems to model the processes of an enterprise, store knowledge data about the processes, store data about other aspects of the enterprise, and to make the model and the stored information available to people and computers to assist in the running of the enterprise. I consider that the advance consists, in such a system, of modelling an enterprise as an evolving system of interconnected processes and knowledge domains.

24 If the advance should properly also include that fact that some aspects of the system operate in real time, or that the model involves a universal framework as described in the specification, or some other feature disclosed in relation to the embodiment, I nevertheless do not consider, having read the specification in detail, that the inclusion of such further feature or features would affect the determination of patentability.

25 I should say for the avoidance of doubt that I do not agree with Dr Goldthorpe's formulation of the advance. In his letter of 4 November 2005 (on page 12), Dr Goldthorpe identified the advance as "the idea of creating in real time a dynamic universal regulation means from real time data about the relationships

between initiating and executing processes within a system of processes, and the real time use of that means for dynamically controlling those processes as a unified system." Dr Goldthorpe emphasises in this definition the control and regulation of processes. However that is not consistent with the original disclosure which as we have seen relates primarily to modelling processes and storing data. While claim 3 and other claims refer to "managing execution of processes and managing knowledge about and contained within processes …" claim 1 is silent as to the management of processes. As originally disclosed, the control aspect is not an essential part of the invention and I think it would be a distortion of the original disclosure to accept this definition of the advance.

26 However the advance I have identified above is, it seems to me, broadly consistent with Dr Goldthorpe's characterisation of the invention in his most recent submission, if the control aspect is not considered an essential element. In paragraph 8 of his letter of 27 July 2006 he says: "As described above, the detail is about controlling the execution of processes in a complex system of processes by tracking and using evolving systemic relationships, with the effect that those processes are "connected" and controlled (with a self-similar mechanism) as a system of "connected processes"." Reading "modelling" as an alternative to "controlling the execution of" and "modelled" as an alternative to "controlled", without being entirely equivalent, this characterisation parallels the advance I have formulated above.

Discussion

27 The context of the invention is, as I have said, a computer system which models the processes of an enterprise, stores data about the processes and about other aspects of the enterprise, and makes the model and the stored information available to people and computers to assist in the running of the enterprise. One element of this relates to modelling and it may be helpful to set out what is meant by this. A model provides a synthetic representation of a real-world system which mimics the real system in some respect. A theoretical (rather than a physical) model consists of a description of the system in terms of the relationships between its various elements. It may involve assigning, to elements of the model, values which correspond to real world values, determining how values are affected as the relationships evolve and no doubt other things.

28 The invention which consists of modelling, storing information about systems, and making the model and the stored information available to users, consequently involves, in the broad context, the collection, generation, manipulation and storage of information describing processes in an enterprise. This appears to me to fall within the area of subject matter excluded by Article 52, and by section 1(2), comprising as it does, aspects of a method of doing business so far as it consists of a tool to assist in the operation of an enterprise, and aspects of a mental act so far as it relates to the manipulation and storage of information.

29 The advance I have identified relates, in such a system, to the modelling of an

enterprise as an evolving system of processes and knowledge domains. While this is a more complex system for modelling, it does not appear to me to be different in kind to the known arrangement. The idea that the model may evolve so that it continues to correspond with the processes it is describing as they change, does not in my view take it beyond the business method and mental act aspects of the basic modelling arrangement.

30 Dr Goldthorpe argues that the necessary technical character arises from a number of features which emphasise the complexity of the system and the interrelationships between its elements. I refer now to his letter of 6 April 2005. This was written before the *CFPH* judgment was issued, but arguments on technical character would also inform the assessment being made by the *CFPH* approach. Among the features he lists under "Technical character" on page 6 are: "the unitary nature of the universal framework, its model building components and its digital interface", "computer processor management in real time of the distributed, simultaneous contributions to the construction of the enterprise model from both people and software", the "unitary nature of the enterprise model reflecting actual evolving interrelationships … between information and processes…", "a unitary, ubiquitous computer processor managed digital model interface … that is provided contemporaneously with the construction of the model", "construction of the enterprise model being computer processor controlled using the emergent features of the model itself" and "distributed, simultaneous computer processor controlled digital organisation … of information and processes in real time under one evolving superordinate organising configuration." He continues: "As a means for systemically organising and regulating activities, processes, datasets and knowledge in real time, the model is technically different to any known models in the art of information systems."

31 These features appear to be those that arise from the running of the modelling system within a conventional computer environment. Such features as the unitary nature of the universal framework, or the interface being managed by the computer processor and being provided contemporaneously with the construction of the model, appear to be the natural result of operating the system and do not in my view demonstrate that the system is one which falls in the patentable area.

32 Dr Goldthorpe also argues that the invention is concerned with the internal operation of computer systems. For example, in his letter of 14 June 2005, on pages 19 to 20, he says: "whilst the invention is prima facie a business method, the claims cannot be judged as abstract or non-technical because the underlying technical problems and considerations are to do with the functioning of computer systems, the control of processes and the generation of metadata, rather than problems in the domain of business methods as such." He says on page 24 that the technical character of the invention lies in the internal functioning of the computer. In his view, the model (and therefore the whole apparatus) is itself a technical device because it controls the processing of selected framework components that are to be added to the model in a recursive feedback mechanism. He also says, on page 25 that the system is a technical one in view of the features that the model has a single interface for

input and output forming part of the functionality of the model which provides information about the model and technical conditions in the apparatus, and that the model combines different activities allowing data associated with one activity to be made available to other activities. Continuing this theme in his letter of 26 August 2005, Dr Goldthorpe says, on page 23; "The applicant's invention has certain functions and internal mechanisms that are not known in other apparatus, creates metadata in a non-conventional way and with special properties, and facilitates the routeing of data between processes in a non-conventional way. This is where technicality is to be assessed."

33 My view is that the modelling system of the invention does not involve new developments in the internal functioning of the computer system. From the description it is clear the invention relates to the operation of the modelling system and not to the operation of the computer. There is no disclosure that the system involves novel computer equipment, or a new mode of operation of a computer system. The invention is in the modelling system and so far as has been described, runs on conventional computer equipment. I do not consider there is any force in the argument that the system is patentable because it relates to the internal functioning of the computer.

34 As we have seen, claim 3 and some other claims relate to "managing execution of processes", and the description enlarges on this, for example page 14 at line 26 states: "Control of the actual real world process occurs using Process Manager…" An example is given, on page 15, of the management of a multi-functional distributed team. It is clear that the disclosure includes the system of the invention controlling real world processes. Dr Goldthorpe relies on the process control aspect in further arguments to support his view on patentability. In his letter of 26 August 2005, on pages 6 and 7, he provides an illustration of a possible application of the system to the operation of an offshore oil platform, which he says will operate differently when controlled by the system of the present invention. Dr Goldthorpe refers on page 26 of his letter of 14 June 2005 to the case of *Koch & Sterzel*[7] in which an X-ray apparatus controlled by a programmed computer was held to produce a technical effect. The decision in *Koch & Sterzel* makes clear that computer control of a physical process may be patentable even though the inventive development that results in the improved operation of the physical process is embodied in the computer program. The same point is made in paragraph 104 of *CFPH* where Prescott QC indicates that an autopilot or a canning process operating in a new way under program control may be patentable.

35 The distinction as I see it is that in *Koch & Sterzel*, and the examples given in *CFPH*, the invention resides in how the system is controlled – "better rules for conducting the manufacture of canned soup" as Prescott QC puts it. In the present arrangement the disclosure is concerned with the structure of an information system collecting, manipulating and storing data about processes in an enterprise and includes the feature that a system may be controlled by it. Dr Goldthorpe (discussing a different point but setting out the way in which he

7 *Koch & Sterzel /X-ray apparatus* [1988] 1-2 OJEPO 19 (T26/86)

considers the system carries out control functions) says, at pages 6 to 10 of his letter of 4 January 2006, that the oil platform is controlled by a system which contains a dynamic representation of processes. The processes evolve in real time and the enterprise is represented by processes within processes, so that the process control itself is fractal in nature. He says as a result that the oil production process in the example is conducted in a different way to oil production that is controlled by a conventional system. It may be true that the resulting control is different, but the invention is not to do with the nature of that difference. It does not describe any "better rules" for the control of processes. It has, by contrast, to do with the management of the data that will eventually result in (some undefined) control of the physical system. I consequently consider that the control aspect of the invention is not such as to confer patentability on it.

36 Having carefully considered the claims, the specification, and the representations made by Dr Goldthorpe, I conclude for the reasons given above that the invention is excluded from patentability. Having also considered this point, I do not think it would be possible to draw up patentable claims based on the disclosure. I consequently refuse the application for failure to comply with section 1(2) of the Patents Act.

Appeal

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

P MARCHANT
Deputy Director acting for the Comptroller