

manual manipulation of separate spreadsheets and databases, are time-consuming and expensive. The invention overcomes these problems by employing a suitably programmed computer to automate the process of cleaning the data and identifying matches or mis-matches in the data that might be of use to a criminal investigator. The invention provides a single source of clean data to work on, which avoids the need to update all the various sources of data as further evidence is gathered and gaps or inaccuracies in the data are found and corrected. Sophisticated matching algorithms are employed in cleaning the data and in identifying networks, and, by Dr Leary's account, the invention is not only helping to reduce the amount of manual data processing involved in the forensic analysis of telecommunication data but is also proving to be a commercial success.

- 4 The most recent set of claims filed on 21st June 2012 has two independent claims: independent claim 1 is to a method for analysing forensically extracted telecommunications data and independent claim 26 is to an apparatus for the construction and identification of networks. Both claims relate to the same inventive concept, so I need only consider one of these claims for the purpose of this decision. Claim 1 reads as follows:

1. A method for analysing forensically extracted telecommunications data in order to identify a network of actors and their measure of influence within a telecommunications data set, the method comprising:

importing telecommunications data, data from one or more data sources including a mobile telephone, the data source comprising fields having a plurality of attributes;

normalising the telecommunications data in one or more of the fields to create a consolidated telecommunications data set;

wherein the step of normalisation comprises identifying one or more matching attributes between two fields within a data set, assigning a matched attribute score to each of the matches attribute(s) indicative of the likelihood of the uniqueness match, determining a matching score of the two fields based on the total score of each of the matched attribute scores and if the matching score exceeds a threshold value consolidating the two fields as a single normalised field;

identifying a first network of actors based on identical or similar instances of one or more pieces of telecommunications data in the telecommunications data set; and

calculating using social network analysis metrics a measure of influence of one or more of the actors in the first identified network and identifying the most influential people within a network based on the extracted telecommunications data.

The law

- 5 The section of the Act concerning inventions that are excluded from patentability is section 1(2), which reads:

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 –

(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.

- 6 In order to decide whether an invention relates to subject matter excluded by section 1(2), the Court of Appeal has said that the issue must be decided by answering the question of whether the invention reveals a technical contribution to the state of the art (cf *Symbian*¹, *Aerotel*²). The Court of Appeal in *Aerotel* set out the following four-step test to help decide the issue:

1) construe the claim;

2) identify the actual (or alleged) contribution;

3) ask whether it falls solely within the excluded subject matter;

4) check whether the actual or alleged contribution is actually technical in nature.

- 7 Mr Black agrees that this is the correct approach to deciding the issue. He notes in his skeleton arguments that according to *Symbian* the check at step 4 (as to whether the contribution is technical in nature) can be performed at the same time as step 3, with the outcome that what is being looked for is essentially whether the contribution identified in step 2 is a “technical contribution”. He refers in his skeleton arguments to further case law dealing with what might constitute a technical contribution, namely *Halliburton*³, *Protecting Kids The World Over (PKTWO)*⁴ and *AT&T/CVON*⁵, which I shall deal with in detail below.

Arguments and analysis

- 8 There is no particular difficulty in construing the meaning of claim 1 or in identifying the contribution allegedly made by the invention. *Aerotel* suggests that the contribution can be assessed from the point of view of the problem to be solved, how the invention works and what the advantages are. In applying this guidance to the present invention, the contribution can be seen to be an improved tool for use in

¹ *Symbian Ltd v Comptroller-General of Patents* [2008] EWCA Civ 1066

² *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371

³ *Halliburton's Application* [2011] EWHC 2508 (Pat)

⁴ *Protecting Kids the World Over's Application* [2011] EWHC 2508 (Pat)

⁵ *AT&T/CVON* [2009] EWHC 343 (Pat)

digital forensics which collates and cleans certain data relating to telephone calls and then identifies patterns or links within the data so as to determine networks of people in communication with each and the most influential people within these networks. The tool is “improved” in the sense that it automates the existing method of analysing telecommunications data and avoids the need for manual manipulation of data across a number of spreadsheets. The method of analysing data is performed by a computer.

- 9 In accordance with the *Symbian* approach for deciding whether the invention is excluded under section 1(2), the next step is to assess whether this contribution can be regarded as being technical. The courts have consistently found that the mere fact that the contribution is made in the field of computing is not enough for it to be regarded as technical. Something additional is required, and Mr Black has directed me to a number of authorities on the subject which I shall summarise very briefly.
- 10 In *Halliburton*, which relates to a computer implemented method of designing a drill bit, HHJ Birss QC said that the question is to be decided by considering what task it is that the program (or the programmed computer) actually performs. A computer programmed to perform a task which makes a contribution to the art which is technical in nature, is a patentable invention and may be claimed as such. If the task the computer performs itself falls within the excluded matter, and there is no more to it, then the invention is not patentable. When the task carried out by the computer program is not itself something within the excluded categories then it is likely that the technical contribution has been revealed and thus is patentable. (The caveat here being the words “is likely”: HHJ Birss says that there are no doubt cases in which the task carried out is not within the excluded areas but nevertheless there is no technical contribution at all).
- 11 What I take from this is that I need to take account of the task performed by the computer program and determine whether the task is technical. If the task performed by the computer is a business method, a presentation of information, a mathematical method or a method of playing a game then the computer program is not patentable. If the task performed by the computer program falls outside these categories then the program will be patentable if it can be shown to make a technical contribution. HHJ Birss gives two specific examples where overlap with other excluded categories does not exist: i) when the task performed does not represent something specific and external to the computer, i.e. there is nothing else going on other than the running of a computer program, then the computer program can be patentable if it solves a technical problem (e.g. making computers work better is patentable); ii) when the task performed by the computer represents something specific and external to the computer then the computer program is likely to be patentable because it is likely that a technical contribution exists (e.g. a method of designing drill bits is technical because it involves consideration of physical parameters such as wear, dimensions and the ability to cut).
- 12 In *PKTWO*, an invention concerning the monitoring of content of electronic communications was found to be patentable even though the method of monitoring was implemented as a computer program. The court overturned in part the decision of the office to refuse the application on the basis that no account had been taken of the alarm notification feature which appeared in a later claim when assessing the contribution made by the invention. Floyd J found that the contribution of the later claim did not reside wholly within the computer program exclusion.

- 13 In *AT&T/CVON*, Lewison J reviews the relevant authorities and sets out a number of signposts to a relevant technical effect. These are set out at paragraph 40 of the judgment, but can be paraphrased as follows: i) a computer program that either solves a technical problem external to the computer or solves a technical problem within the computer is to be regarded as making a technical contribution, ii) a computer program that improves the operation of a computer by solving a problem arising from the way the computer is programmed, can also be regarded as making a technical contribution if it leads to a faster or more reliable computer, and iii) a computer program that relates to the control of internal communications within a computer network and is not concerned with nature of the data and the way in which a particular application operates on them, is to be regarded as making a technical contribution.
- 14 Mr Black summarises the teaching of the authorities as follows: when the task performed by the computer is specific and external to the computer, the nature of the task must be considered; if the task is not excluded then it is likely that the invention is patentable.
- 15 In addition to the case law referred to by Mr Black, the examiner has referred me to the Office decision in *Advanced Forensic Solutions Ltd*⁶ which relates to a method of uncovering evidence of fraud by analysing telephone data. Dr Leary is named as inventor in this application, and the Hearing Officer in the case found that the invention was excluded as a computer program. As Mr Black rightly notes, this decision was issued before the judgment in *Halliburton* and therefore before the Courts had provided further guidance as to how to assess the contribution of an invention. Mr Black also notes that the present invention is further distinguished from this particular case because the task concerned is not a business task, i.e. in the earlier case, the task is concerned with identifying whether a commercial activity is deemed to be legitimate or fraudulent, which has its roots in a non-technical art. He argues that the task performed by the present computer program is not a business task.
- 16 So what then is the task performed by the present computer program? Mr Black argues that the task performed is one of extracting pertinent information from a large volume of telecommunications data, which he says is not within any excluded category other than that of a computer program. According to *Halliburton*, this is likely to be patentable. He says that the invention results in greater accuracy and provides significant efficiencies in the processing and extraction of information relating to networks of individuals in communication with each other, which he argues are technical improvements; user reports submitted shortly before the hearing endorse these particular benefits of the invention. The argument, therefore, is that the task performed by the computer program does not fall within any of the other excluded categories (i.e. the non-computer program exclusions) - this alone ought to be enough for the invention to be patentable, but the technical improvements over the prior art provide further reason to find the invention patentable.
- 17 I agree with Mr Black's characterisation of the task performed by the computer program. The next step is to decide whether the task of extracting pertinent information from a large volume of telecommunications data falls within one of the

⁶ Advanced Forensic Solutions Limited BL O/409/10

excluded categories? From the detailed description of the invention contained in the application it is clear to me that the computer program involves some clever search algorithms to identify further leads and associations in a criminal investigation and provides forensic investigators with a very useful tool, but to say that the task performed by the computer is a business method or a mathematical method, as the examiner suggests, is I believe stretching the scope of these exclusions somewhat. Mr Black suggests that this ought to be enough for the invention to be patentable, but I do not agree - the contribution made by the invention must, in accordance with *Aerotel* and *Symbian*, be technical. The contribution made by the invention is to provide a faster and more reliable method of identifying matching records in a large volume of data. The fact that the records relate to telecommunications data is, I believe, irrelevant to the consideration of technical contribution. The invention is concerned with the formatting and parsing of data and in linking relevant data records through novel search algorithms. These functions of formatting, parsing and searching data are standard features in computer programming, and the benefits provided by the invention, i.e. speed, reliability and tracking changes to data over time, are the sorts of benefits one would expect to see in computerising an otherwise manual process (see pages 1-3 of the specification). Put another way, the task performed by the computer does not represent something specific and external to the computer and does not, in my opinion, solve a technical problem. The invention as currently defined falls solely within the excluded category of a computer program.

- 18 This is not the end of the matter. In *PKTWO* the court held that an invention concerning the monitoring of content of electronic communications was indeed patentable because the computer program for searching electronic data went a step further by raising an alarm notification when certain keywords were found. The question of whether the present invention can be classed as an alarm was discussed at the hearing, with Mr Black suggesting that the step of identifying the most influential people in a network could be seen to provide a similar alert to that in *PKTWO*. The examiner argues that there is a distinction between the two cases because the alert in *PKTWO* is generated in real-time, whereas the present application merely provides an indication of matches as and when telephone data is loaded into the database. The computer program does not provide any other form of alert.
- 19 In *PKTWO*, Floyd J found that the invention solved a technical problem outside the computer, namely how to improve on the inappropriate communication alarm generation provided by the prior art. I am satisfied that the present invention does not provide a better alarm generation system in the way provided in *PKTWO*; what the present invention provides is a better way of analysing telecommunications data and presenting the information to the forensic investigator, not an automatic alarm system. The invention does not involve a technical contribution nor does it match any of the signposts to technical contribution set out at paragraph 40 in *AT&T/CVON*.

Conclusion

- 20 I find that the invention set out above is excluded under section 1(2)(c) as a computer program. I can find no possible amendment in the specification that will render the claims patentable. I therefore refuse the application under section 18(3).

Appeal

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

H Jones

Deputy Director acting for the Comptroller