

18 December 2012

**PATENTS ACT 1977**

APPLICANT Plastic Logic Limited

ISSUE Whether patent application number  
GB0802816.9 complies with Section 1(2)

HEARING OFFICER Peter Slater

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**DECISION**

- 1 Patent application number GB0802816.9, entitled "Electronic document reader" was filed on 15 February 2008 in the name of Plastic Logic Limited and was published as GB2454032. The application claims an earliest priority date of 24 October 2010.
- 2 The examiner has maintained throughout the proceedings that the invention as claimed in this application is excluded from patentability as a computer program or the presentation of information as such under section 1(2) of the Patents Act 1977. The applicant has not been able to overcome this objection, despite amendments to the application.
- 3 The matter therefore came before me at a hearing on 18 October 2012 where the applicant was represented by David Robinson, Julia Gwilt and Daryl Bradley of Marks & Clerk. Sarah-Jane Bowes of Plastic Logic Limited and the examiner Mr Alessandro Potenza were also present.

**The Invention**

- 4 The invention relates to an electronic document reader and an associated method for formatting or optimising pages, or images of pages, for display on the reader. Essentially, the invention is designed to remove the wasted areas around the margins of the page, to the extent they can be removed without losing information from the pages such as the page numbers. This is achieved by analysing the pages to determine the smallest margin which can be removed from the pages prior to displaying them. This gives the appearance that the page fills the whole of the display screen, with the border of the display effectively replacing the traditional page margins. Re-formatting the pages in this way optimises the size of the content, and ensures that similar scales are applied across all the pages so that the text does not shrink or grow as the user moves between the pages. Formatting of the pages maybe achieved using a

conventional printer driver associated with the reader to manipulate the pages or alternatively pages may be manipulated remotely and then downloaded onto the reader. Remote manipulation of the pages requires less processing on the part of the reader and has the potential to lower its power consumption and increase its battery life.

- 5 The most recent set of claims were filed on 17 August 2012 and include two independent claims to a method of formatting a document for display on an electronic document reader (claim 1) and an electronic document reader (claim 11). The wording of the claims is as follows:

*1. A method of formatting a document for display on an electronic document reader having a border adjacent a re-writable display portion, the method comprising:*

*inputting page data for a plurality of pages of said document for display on said electronic document reader to a management system;*

*automatically processing said page data, using said management program, to determine, for each of said plurality of pages, a margin size of top, bottom, left and right margins of each of said pages;*

*identifying, using said management program, a smallest said margin size of each of said top, bottom, left and right margins from amongst said determined margin sizes;*

*scaling, using said smallest top, bottom, left and right margin sizes, said page data for display on said re-writable display portion, and*

*cropping, using said smallest top, bottom, left and right margin sizes, said page data to generate cropped page data.*

*7. An electronic document reader having a border adjacent a re-writable display portion, the electronic document reader further comprising:*

*an input to receive page data for a plurality of pages of said document for display on said electronic document reader;*

*non-volatile memory for storing said page data;*

*program memory for storing processor control code for controlling said electronic document reader;*

*a display for displaying a said page of said document; and*

*a processor coupled to said non-volatile memory to said program memory, to said input, and to said display, and wherein said processor control code is configured to control said processor to:*

*process said page data to determine, for each of said plurality of pages, a margin size of top, bottom, left and right margins of each of said pages;*

*identify a smallest said margin size of each of said top, bottom, left and right margins from amongst said determined margin sizes;*

*scale said smallest top, bottom, left and right margin sizes, said page data for display on said re-writable display portion, and*

*crop, using said smallest top, bottom, left and right margin sizes, said page data to generate cropped page data and*

*provide said scaled and cropped page data for displaying on said display.*

## The Law

- 6 The examiner has raised an objection under section 1(2)(c) of the Patents Act 1977 that the invention is not patentable because it relates to a program for a computer or the presentation of information as such; the relevant provisions of this section of the Act are shown in bold below:

**1(2) It is hereby declared that the following (amongst other things) are not inventions for the purpose of the 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) the presentation of information;**

*but the foregoing provisions shall prevent anything from being treated as an invention for the purposes of the Act only to the extent that a patent or application for a patent relates to that thing as such.*

- 7 As explained in the notice published by the UK Intellectual Property Office on 8 December 2008<sup>1</sup>, the starting point for determining whether an invention falls within the exclusions of section 1(2) is the judgment of the Court of Appeal in *Aerotel/Macrossan*<sup>2</sup>.
- 8 The interpretation of section 1(2) has been considered by the Court of Appeal in *Symbian Ltd's Application*<sup>3</sup>. *Symbian* arose under the computer program exclusion, but as with its previous decision in *Aerotel*, the Court gave general

<sup>1</sup> <http://www.ipo.gov.uk/pro-types/pro-patent/p-law/p-pn/p-pn-computer.htm>

<sup>2</sup> *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371; [2007] RPC 7

<sup>3</sup> *Symbian Ltd v Comptroller-General of Patents*, [2009] RPC 1

guidance on section 1(2). Although the Court approached the question of excluded matter primarily on the basis of whether there was a technical contribution, it nevertheless (at paragraph 59) considered its conclusion in the light of the *Aerotel* approach. The Court was quite clear (see paragraphs 8-15) that the structured four-step approach to the question in *Aerotel* was never intended to be a new departure in domestic law; that it remained bound by its previous decisions, particularly *Merrill Lynch*<sup>4</sup> which rested on whether the contribution was technical; and that any differences in the two approaches should affect neither the applicable principles nor the outcome in any particular case. But the *Symbian* judgment does make it clear, that in deciding whether an invention is excluded, one must ask does it make a technical contribution? If it does then it is not excluded.

- 9 Subject to the clarification provided by *Symbian*, it is therefore still appropriate for me to proceed on the basis of the four-step approach explained at paragraphs 40-48 of *Aerotel/Macrossan* namely:
- 1) Properly construe the claim
  - 2) Identify the actual contribution (although at the application stage this might have to be the alleged contribution).
  - 3) Ask whether it falls solely within the excluded matter, which (see paragraph 45) is merely an expression of the “as such” qualification of section 1(2).
  - 4) check whether the actual or alleged contribution is actually technical in nature.
- 10 Paragraph 43 confirms that identification of the contribution is essentially a matter of determining what it is the inventor has really added to human knowledge, and involves looking at substance, not form. Paragraph 46 explains that the fourth step of checking whether the contribution is technical may not be necessary because the third step should have covered the point.
- 11 Mr Robinson accepted that this was the right approach to take.

### **Construing the claims**

- 12 The first step of the test is to construe the claims. I do not think this presents any real problems since both the applicant and the examiner appear to agree as to the meaning of the claims.

### **Identify the actual contribution**

- 13 For the second step, it is necessary to identify the contribution made by the invention. Paragraph 43 of *Aerotel/Macrossan* explains that this is to be determined by asking what it is - as a matter of substance not form - that the invention has really added to human knowledge having regard to the problem to be solved, how the invention works and what its advantages are.

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<sup>4</sup> *Merrill Lynch's Application* [1989] RPC 561

- 14 The examiner considers the hardware used to implement the document reader to be entirely conventional, and as such believes the contribution to lie in the management program used to implement the formatting steps of claim 1. The contribution he says is therefore:

*“a program for automatic multipage document formatting using minimum margins calculated separately for each side of a page.”*

- 15 Mr Robinson argues that the examiner’s definition is far too narrow and does not take into consideration the advantages of the invention and the problem with which it is concerned. In paragraph 23 of his skeleton arguments of 11 October 2012, Mr Robinson sets out his definition of the contribution as follows:

*“23. The contribution made by the invention of claim 1 is an improved method of formatting a document that comprises page data for a plurality of pages to enhance the display of the document, During examination various prior-art objections were raised and overcome on the basis of the processing that is applied to the document to be formatted, which provides a novel and inventive method of processing a document, such that, whilst it is incorrect to divide the invention into new and known parts, it is clear that the invention lies in the way in which a document comprising page data for a plurality of pages is processed. The invention solves the problem of how to format a document so as to maximize content size and to prevent text from growing and shrinking as a user changes pages of the document on the electronic document reader and it is clear that such a problem is one that would be addressed by a technical person.”*

- 16 I agree with Mr Robinson to some extent. The examiner has neglected, in formulating his contribution, the advantages associated with the invention, and as such may have taken too narrow an approach. In my view, the contribution relates to a computer implemented method for re-formatting a document for display on an electronic reader, by adjusting the margin size across a plurality of pages to maximize the size of the content and to prevent text growing and shrinking as the user moves between pages.

**Does the contribution fall solely within excluded subject matter? Is the contribution technical in nature?**

*Computer program*

- 17 There is no doubt in my mind that the contribution requires a computer program for its implementation. Mr Robinson agrees. However, the mere fact that the invention is effected in software does not mean that it should be immediately excluded as a computer program as such. What matters is whether or not the program provides a technical contribution.

- 18 Mr Robinson put it to me that the decision of the EPO Board of Appeal in *Vicom*<sup>5</sup> was particularly relevant in this case, and pointed to the present invention making a technical contribution and being patentable. He argues that

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<sup>5</sup> *Vicom System Inc T 0208/04 O.J.EPO 14 [1987]*

the contribution in both the present case and in *Vicom* related to image processing, and in particular to enhancing images, and as such is clearly technical in nature. In the present case, page data in the form of images are manipulated so as to enhance the formatting of the document so as to make it better suited for display on an electronic document reader.

- 19 Whilst I agree with Mr Robinson that *Vicom* of course provides a good indicator as to what constitutes a technical contribution and has been heavily endorsed by the UK Courts, I do not think it is quite on all fours with the invention in the present case. In *Vicom*, what the Board was considering was the enhancement of images by more efficient filtering. That it seems to me is an altogether more technical process than the mere reformatting of a page of text to maximize its size by adjusting its margins, albeit that the pages are in the form of an image.
- 20 I have to admit that the task of determining whether the invention provides a technical contribution is a difficult one, as is evident from the plethora of case law in this area. However, I think, as did the examiner, it would also be useful in this case to use the ‘signposts’ as set out by Lewison J in *AT&T/CVON*<sup>6</sup> as a guide which states in paragraphs 40-41:

*“40. As Lord Neuberger pointed out, it is impossible to define the meaning of “technical effect” in this context, but it seems to me that useful signposts to a relevant technical effect are:*

- i) whether the claimed technical effect has a technical effect on a process which is carried on outside the computer;*
- ii) whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run;*
- iii) whether the claimed technical effect results in the computer being made to operate in a new way;*
- iv) whether there is an increase in the speed or reliability of the computer;*
- v) whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.*

*41 If there is a technical effect in this sense, it is still necessary to consider whether the claimed technical effect lies solely in excluded matter”.*

- 21 At the hearing, Mr Robinson argued that these “signposts” should not be taken as a definitive account of what is and what isn’t technical, and that the signposts are intended to be interpreted in such a way that satisfying one of them is sufficiently clear enough an indication of a technical effect.
- 22 In particular, discussion focussed on the first of these signposts, which Mr Robinson deemed to be the *Vicom* signpost, which requires the claimed technical effect to have a technical effect on a process carried on outside the computer. Mr Robinson argues that the present invention starts with a document which is manipulated and re-formatted to produce an enhanced document, and accordingly the invention as claimed has a technical effect on a process which is carried out outside the computer in much the same way as in *Vicom* where an image is processed to create an enhanced image. In his opinion, satisfying this signpost alone is sufficient to indicate that the

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<sup>6</sup> *AT&T Knowledge Ventures’ Application and CVON Innovations Ltd’s Application* [2009] FSR 19

contribution is a technical one and as such the invention should not be excluded.

- 23 In relation to the fifth signpost, the examiner argues that the problem of optimizing borders in document readers is not solved but circumvented by the invention. Mr Robinson disagrees, the invention he argues, provides a new method of processing images of pages which overcomes the problem of text growing or shrinking as a user changes pages of a document whilst maximizing content size, and that this clearly solves rather than circumvents the problem.
- 24 The remaining signposts seem of little relevance here.
- 25 So is the contribution made by the present invention a technical one? I do not think so.
- 26 As I have indicated above, I do not think the invention as claimed provides a technical effect in the same way as the invention did in *Vicom*, where the image was filtered and transformed to create an enhanced image using complex image processing techniques. The present invention merely involves the manipulation of a series of pages to essentially maximize the size of the text by adjusting the margins which does not on the face of it seem to be technical in nature. Manipulation of the pages is carried out by a computer program residing inside the reader, and thus the invention has no apparent technical effect external to the reader. The hardware used to implement the reader is entirely conventional, and the reader is not made to operate in a new way, for instance, it is no faster and is no more reliable.
- 27 Whilst you could argue that the problem of text growing and shrinking as the user moves between pages is solved rather than circumvented, I do not think it is solved in an inherently technical way. Instead, the program is designed to select the most appropriate margin size for the pages so as to minimize the effect.
- 28 It is my opinion therefore, that a program for re-formatting a document for display on an electronic reader, by adjusting the margin size across a plurality of pages to maximize the size of the content and to prevent text growing and shrinking as the user moves between pages does not provide a technical contribution and is not patentable. The invention as defined in present claims 1 and 7 is therefore in my view excluded as a program for a computer as such.

#### *Presentation of information*

- 29 With regards to the presentation of information exclusion, Mr Robinson referred me specifically to the judgments in *Crawford's Application*<sup>7</sup> and *Townsend's Application*<sup>8</sup>, as well as a number of others, arguing that it was clear that the exclusion should be interpreted narrowly, and that it only applies to the specific content and the nature of the information to be presented, and not to the way in which it is processed, and that the contribution was all to do with processing

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<sup>7</sup> Crawford's Application [2005] EWHC 2417 (Pat)

<sup>8</sup> Townsend's Application [2004] EWHC 482 (Pat)

information and controlling its display and as such did not relate to excluded subject matter.

- 30 Again, I would have to disagree. A process for re-formatting a document for display on an electronic reader, by adjusting the margin size across a plurality of pages to maximize the size of the content and to prevent text growing and shrinking as the user moves between pages is inherently related to the content and to the nature of that content. Does the contribution fall solely within the presentation of information exclusion? Yes, I think it does and as I have been unable to find a relevant technical effect, it must also be excluded as such.

### **Auxiliary Claim Set**

- 31 The Applicants filed an auxiliary set of claims with their skeleton arguments of 11 October 2012 which I agreed to consider if I found the claims as presently on file to be excluded. That alternate claim set again includes a two independent claims which read as follows:

*1. A method of formatting a document for display on an electronic document reader having a border adjacent a re-writable display portion, the method comprising:*

*inputting page data for a plurality of pages of said document for display on said electronic document reader to a management program on a host computer system;*

*automatically processing said page data, using said management program, to determine, for each of said plurality of pages, a margin size of top, bottom, left and right margins of each of said pages;*

*identifying, using said management program, a smallest said margin size of each of said top, bottom, left and right margins from amongst said determined margin sizes;*

*scaling, using said smallest top, bottom, left and right margin sizes, said page data for display on said re-writable display portion;*

*cropping, using said smallest top, bottom, left and right margin sizes, said page data to generate cropped page data and*

*sending cropped page data from said host computer system to said electronic document reader for display on said electronic document reader.*

*7. A system comprising:*

*an electronic document reader having a border adjacent a re-writable display portion, the electronic document reader further comprising:*

*an input to receive page data for a plurality of pages of said document for display on said electronic document reader;*

*non-volatile memory for storing said page data;*



*program memory for storing processor control code for controlling said electronic document reader;*

*a display for displaying a said page of said document; and*

*a processor coupled to said non-volatile memory to said program memory, to said input, and to said display;*

*the system further comprising a host computer system comprising a processor which is configured to:*

*process said page data to determine, for each of said plurality of pages, a margin size of top, bottom, left and right margins of each of said pages;*

*identify a smallest said margin size of each of said top, bottom, left and right margins from amongst said determined margin sizes;*

*scale said smallest top, bottom, left and right margin sizes, said page data for display on said re-writable display portion, and*

*crop, using said smallest top, bottom, left and right margin sizes, said page data to generate cropped page data and*

*provide said scaled and cropped page data to said electronic document reader for displaying on said display.*

- 32 The auxiliary claims specify that the management program is on a host computer system separate from the reader, and that the page data is processed by the host computer system before being sent to the reader. This allegedly reduces the amount of data processing required of the reader, thereby reducing its power consumption and extending its battery life. Mr Robinson argues that this provides a sufficient technical contribution for the invention to avoid exclusion.
- 33 Whilst I can see the logic behind Mr Robinson's arguments, in that reducing the power consumption of the reader and extending its battery life may be technical problems, I do not think that the problem is solved in a technical way. The problem is instead circumvented by shifting the burden of the data processing to another device remote from the reader and transferring the documents to the reader after they have been reformatted. The contribution is the same regardless of where the data is processed and is excluded for much the same reasons I have indicated above. Furthermore, I can see no technical effect which would save the invention as claimed in the auxiliary claim set from exclusion.

## **Conclusion**

- 34 In the light of my findings above, I conclude that the invention as claimed is excluded under section 1(2) because it relates to a computer program and the presentation of information as such. Having read the specification I do not think that any saving amendment is possible. I therefore refuse the application under section 18(3).

## **Appeal**

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

**PETER SLATER**

Deputy Director, acting for the Comptroller