



PATENTS ACT 1977

APPLICANT	Blackhawk Network Inc
ISSUE	Whether patent application GB1508111.0 complies with Section 1(2) of the Patents Act 1977
HEARING OFFICER	Peter Mason

DECISION

Introduction

- 1 This decision concerns patent application GB1508111.0 entitled “Optimized planogram generator” in the name of Blackhawk Network Inc, and whether the invention as defined in the claims is excluded from patentability under Section 1(2)(c) of the Patents act 1977. The application has not been searched.
- 2 The application was filed 12th May 2015 and takes priority from provisional application number US 61/992,187 filed 12th May 2014. A Report under Section 17(5)(b) was issued 28th October 2015 informing the applicant that the search would serve no useful purpose as the invention was excluded under Section 1(2). The first examination report was issued 28th January 2020 and supports the earlier observation in regard to Section 1(2). The applicant has made a number of submissions rebutting the Section 1(2) objection and has amended the claims repeatedly but has been unable to persuade the examiner of the patentability of the claims. In their letter dated 14th July 2021 the examiner offered the applicant a hearing and, in the absence of any hearing request, informed the applicant that the application may be passed to a hearing officer nonetheless, for a decision. A further submission was received 18th October 2021, again the applicant was unable to persuade the examiner on the patentability of the claims. The examiner duly forwarded the application to a Hearing Officer for consideration. I will therefore make a decision based on the papers available on file.

Preliminary matters

- 3 The only substantive matter before me is whether the invention is excluded from patentability under section 1(2)(c) of the Patents act 1977. Therefore, if I find that the claimed invention is allowable I will return the application to the examiner to complete the substantive examination.
- 4 Section 20 date - The Section 20 expiry date was extended with a Form 52, and appropriate fee, filed 17th August 2021. The extended Section 20 date expired on the 28th November 2021.
- 5 Therefore, there appears to be no recourse available if any objections arise during further examination. In light of this I have only considered the independent claims.

The invention

- 6 The invention relates to a display of products, for example stored-value cards (SVCs), in a retail environment. The sales success of displayed products may be associated with multiple factors including the design of the display as well as the relative position of each displayed product. The invention uses a *planogram* template wherein a planogram is a map of the display which is used to indicate the position of a product. The planogram template is optimised such that it assigns display products with regard to several distinct parameters relating to customer behaviour, as well as predetermined factors, in order to influence sales.
- 7 The claims have been amended since filing and are now presented, as filed on 18th October 2021. There are three independent claims relating to a method of generating an optimized planogram template as set out in claim 1, a product display as set out in claim 5, and a further method of generating an optimised planogram as set out in claim 15. The claims are recited as follows;

1. *A method of generating an optimized planogram template comprising: storing, in a data store on a server, a plurality of planogram map templates, wherein each template of the plurality of planogram map templates comprises a plurality of regions, wherein each region comprises a plurality of positions and at least one constraint, and wherein the at least one constraint is one of a locked status, a brand, a value, a category, a position, a display season, and a display location;*
receiving, by an application on the server, a request to generate an optimized planogram;
assigning, by the application, in response to receiving the request, at least some prepaid cards of a plurality of available prepaid cards to a first template of the plurality of planogram map templates,
wherein the assignment is based upon the at least one constraint and at least one of a brand associated with a prepaid card, a value associated with the prepaid card, a category associated with the prepaid card, categories associated with other prepaid cards of a plurality of prepaid cards assigned to the template, a brand associated with a region on at least one region on the template, a category associated with the at least one region on the template, a relationship between the prepaid card and at least one other assigned prepaid card, and a performance history, and

wherein the plurality of prepaid cards assigned to the template is a subset of the plurality of available prepaid cards;

generating, based on the assignment, the optimized planogram template comprising the assignment of the plurality of prepaid cards assigned to the first template;

receiving, in real-time, from one or more sensors in a store display, dynamic feedback relating to prepaid cards removed from the optimized planogram, replaced on the optimized planogram and/or purchased; and

dynamically updating the optimized planogram template based on the received dynamic feedback.

5. *A product display comprising:*

a plurality of items assigned to a first planogram template,

wherein the first planogram template is selected based upon at least one of the season, the display type, the display location, a number of items to display, and the predetermined occupation percentage,

wherein the first planogram template comprises a plurality of regions, wherein at least one constraint on item assignment is associated with at least one region of the plurality of regions

wherein each item is associated with an index, and wherein each item of the plurality of items is associated with a category, a brand, and a load value,

wherein the index is based upon a plurality of factors, wherein the plurality of factors comprises at least two of a number of units sold during a predetermined time period, a load value associated with the number of units sold during the predetermined time period, a net revenue associated with the number of units sold during the predetermined time period, a product commission, a product approval, and a regulatory restriction,

wherein at least some items of the plurality of items is assigned to the first planogram template of a plurality of templates based upon at least the index and a plurality of rules,

wherein the plurality of rules is associated with at least one of the first planogram template, a season, a display type, a position of at least one other item, a predetermined occupation percentage, and a display location; and wherein an optimized planogram template is generated based on dynamic feedback relating to prepaid cards removed from the product display, replaced on the product display and/or purchased received, in real time, from one or more sensors in the product display.

15. *A method of generating an optimized planogram template, comprising:*

defining, by an application stored in a non-transitory memory of a server and executable by a processor, a strike zone on an automated first planogram template comprising a first panel, wherein the strike zone comprises a plurality of locations on the first panel;

ranking, by the application, a first plurality of rows and a first plurality of columns, wherein ranking comprises:

assigning, by the application, to a first row of the plurality of rows a first rank,

assigning, by the application, to a second row of the plurality of rows, a second rank, wherein the first row is located above and adjacent to the strike zone and the second row is located below and adjacent to the strike zone,
assigning, by the application, to a third row of the plurality of rows, a third rank, wherein the third row is located above and adjacent to the first row,
assigning, by the application, to a fourth row of the plurality of rows, a fourth rank, wherein the fourth rank is located below and adjacent to the second row,
assigning, by the application, to the first planogram template based upon the ranking of at least one of the plurality of rows and the plurality of columns, at least some of a plurality of products based upon an index value associated with each product of the plurality of products, and at least one of the ranking of the plurality of columns and the ranking of the plurality of rows;
receiving, in real time, from one or more sensors in a store display, dynamic feedback relating to products removed from a planogram based on the first planogram template, the dynamic feedback comprising the assignment of the plurality of products to the planogram, replaced on the planogram and/or purchased; and
generating the optimized planogram template based on the received dynamic feedback.

- 8 The examiner has observed, throughout their correspondences, that the independent claims have overlapping scope and that they are not clearly unified. However, the examiner has deferred any formal plurality objection.

The law

- 9 The examiner raised an objection under Section 1(2) of the Act that the invention is not patentable because it relates to one or more categories of excluded matter. The relevant provisions of this section of the Act are shown with added emphasis 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)

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.

- 10 The assessment of patentability under Section 1(2) is governed by the judgment of the Court of Appeal in *Aerotel*¹, as further interpreted by the Court of Appeal in

¹ *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371; [2007] RPC 7

Symbian². In *Aerotel*, the court reviewed the case law on the interpretation of Section 1(2) and set out a four-step test to decide whether a claimed invention is patentable:

(1) *Properly construe the claim;*

(2) *identify the actual 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.*

- 11 The Court of Appeal in *Symbian* made it clear the four-step test in *Aerotel* was not intended to be a new departure in domestic law; it was confirmed that the test is consistent with the previous requirement set out in case law that the invention must provide a “*technical contribution*”. Paragraph 46 of *Aerotel* states that applying the fourth step of the test may not be necessary because the third step should have covered the question of whether the contribution is technical in nature. It was further confirmed in *Symbian* that the question of whether the invention makes a technical contribution can take place at step 3 or step 4.
- 12 The relevance of the legislation and legal precedent above is not contested in the latest communications or at the hearing.

Applying the *Aerotel* test

Step 1 - Properly construe the claim

- 13 Throughout their correspondences both the applicant and the examiner have considered the three independent claims together. Furthermore, the examiner has considered the claims to be generally clear in light of the description and there has been no contention from the applicant.
- 14 The independent claims are clear, and I have no difficulty construing them.

Step 2 – Identify the actual contribution

- 15 No search of this application has been performed and so I will consider the alleged contribution.
- 16 Paragraph 43 of *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, stating “*What has the inventor really added to human knowledge perhaps sums up the exercise*”. Knowledge of the prior art plays a role in assessing the contribution, and as Lewison J noted³, the examiner should have some notion of the state of the art. This does not necessarily mean however that the contribution is defined by what is new and inventive in the claim.

² *Symbian Ltd v Comptroller-General of Patents* [2009] RPC 1

³ *AT&T Knowledge Venture/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat), paragraph 8.

17 In regard to the problem at hand, paragraph [0002] and [00017] of the Application reads;

“Retail locations may use in-store displays and advertisements to introduce new products, sell off products with excess inventory, or otherwise structure the displays to maximize sales and minimize inventory costs”, and

“The sales success of these displays may be associated with multiple factors, including the season, economy, as well as the layout of the displayed items. Therefore, the design of the display as well as the position of each item and the relative position of each item, may impact the sales volume of a particular item or family of items.”

18 The application further describes a conventional system wherein display items are typically manually selected and placed. The applicant alleges, in their letter dated 18th October 202, that the proposed system is far less labour intensive thereby improving the efficiency of a planogram generation system and overcoming the problem of employing manual selection and placement of display items.

19 However, the application clearly envisages manual placement of display products; this is discussed in the application at paragraph [00025], [00027] and [00054], at least. Therefore, it seems that the Applicant may be referring to product assignment, rather than manual placement; this seems consistent with the language of the application, wherein paragraph [0042] which reads *“This placement process may be referred to as assignment”*. Therefore, whilst I agree somewhat with the Applicant, I can see no particular problem with an *arbitrary* selection and assignment of display products, manual or otherwise. The specific problem at hand seems to fundamentally relate to how a retail display can be organised in order to influence customer behaviour, rather than general selection and assignment of display products.

20 The invention provides a solution to the problem by generating a planogram based on at least one of a plurality of different parameters not limited to status, brand, value, category. Wherein the planogram is optimised with respect to a sensed customer behaviour relating to removal, replacement or purchase of a displayed product.

21 The advantages of the alleged invention lie in a generation of optimised planogram map using a sophisticated algorithm utilising predetermined valuables. The optimised planogram can be arrived at, in a retail environment, with very little intellectual burden on the retail employee. Therefore, with relatively limited skill a retail employee is able to arrange a display to influence customer behaviour in order to optimise sales in regard to a specific agenda.

22 In an earlier exam report dated 14th July 2021, the examiner identified the contribution as;

Generating a product display planogram or planogram template based on a constraint (e.g. brand of product to be displayed, the display season, occupation percentage, etc.) and then adjusting that planogram/template

based on information from sensors relating to products removed from the display, replaced on the display, or purchased.

- 23 The applicant has not explicitly set out a statement of contribution in their most recent correspondence, however in an earlier letter dated 15th January 2021 the Applicant asserted the contribution to be;

Accordingly, the contribution of the claims is that the planogram and/or the template can be updated based feedback from sensors in the store display, thereby providing a means of dynamically adjusting the planogram and/or the template based on measured data provided by the sensors. AS set out in paragraph [0017], this provides the advantage of providing a system that takes into account information that changes over time on a real-time basis and enables the dynamic generation and updating of displays. The contribution of the claims is therefore the adaptation of an existing system to update and account for data that changes on a real-time basis. [sic]

- 24 Furthermore, the Applicant contends that the examiner, in their early analysis, omits fundamental features of the invention relating to a “*real-time receipt of dynamic feedback*” and “*dynamically updating the optimized planogram*”. Beyond this there appears to be no contention over the contribution.

- 25 The examiner, in light of the agent’s assertions, provides a revised contribution in their examination report dated 26th October 2021 which reads;

Generating a product display planogram or planogram template based on a constraint (e.g. brand of product to be displayed, the display season, occupation percentage, etc.) and then adjusting that planogram/template by dynamically selecting and placing products in the planogram based on information from sensors relating to products removed from the display, replaced on the display, or purchased.

- 26 The revised contribution appears to negate any contention that previously existed.

- 27 Method claims 1 and 15 are clearly computer implemented due to the inclusion of computer hardware such as memory and server etc. Although claim 5 is silent with respect to any integer that explicitly implicates a computer it is clear from reading the claim that a computer is necessary. Therefore, whilst I accept the reformulated contribution as set out in paragraph 26 above, I would add that the generation of a planogram is achieved with a computer running a computer programme.

Steps 3 and 4 Ask whether it falls solely within the excluded matter and check whether the actual or alleged contribution is actually technical.

- 28 The fourth step of the test is to check whether the contribution is technical in nature. In paragraph 46 of *Aerotel* it is stated that applying this fourth step may not be necessary because the third step should have covered the question. I shall consider whether the contribution is excluded alongside the question of whether the contribution is technical in nature, meaning I will consider the third and fourth steps of *Aerotel* together.

29 Lewison J (as he then was) in AT&T/CVON⁴ set out five signposts he considered to be helpful when considering whether a computer program makes a technical contribution. In HTC/Apple⁵ the signposts were reformulated slightly in light of the decision in Gemstar⁶. The signposts 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 the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer;

v. whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.

30 The invention clearly involves a computer programme therefore it is appropriate to consider the signposts. The applicant has previously been presented with, and considered the AT&T signposts, and has specifically relied on signposts (iii) and (v) in their arguments.

31 In regard to the third signpost the applicant contends that, as the computer is interacting with sensors and updating a planogram and/or template in a real-time manner based on sensed data, the computer is operating in a new way.

32 The third signpost however emphasises the effect must be more than merely a simple running of a programme on a typical computer. In practice this means, in order to meet the third signpost, the computer must operate differently than it did prior to the programme being run. Lewison J, in AT&T, noted that this particular signpost “*points towards some generally applicable method of operating a computer rather than a way of handling particular types of information*”.

33 It is entirely routine for a computer to interact with auxiliary components, including sensors, and subsequently update databases and other transient files stored therein, with respect to any received data. Such systems are ubiquitous. Any effect, technical or otherwise, is clearly achieved within the computer by the computer operating in an expected way. The programme is restricted to updating a planogram template and does not change the way the computer operates. Therefore, the invention does not meet the third signpost.

⁴ AT&T Knowledge Ventures LP and CVON Innovations Ltd v Comptroller General of Patents [2009] EWHC 343 (Pat)

⁵ HTC v Apple [2013] EWCA Civ 451

⁶ Gemstar-TV Guide International Inc v Virgin Media Ltd [2010] RPC 10

34 Regarding the fifth signpost the applicant argues that the invention overcomes the problem of employing manual selection and placement (see ‘assignment’, paragraph [0042]) of display products.

35 Birss J, in *Lantana*⁷, considered the fifth signpost stating that;

“[i]t makes sense to think of something which is a solution to a technical problem as itself having technical character because it takes that character from the technical nature of the problem to be solved. But if a thing is not solving the technical problem but only circumventing it, then that thing cannot be said to have taken any technical character from the problem.”

36 Similarly, if a problem to be solved is not a technical problem then the solution cannot take any technical character from the problem, although it may have some alternative technical effect.

37 The problem, as set out in paragraph 19 above relates exclusively to influencing customer behaviour and is clearly a commercial activity wherein a data-processing system receives inputs relating to display parameters, displayed item parameters as well as some sensed customer behaviour. The data-processing system uses these metrics to generate an optimized planogram for the purpose of influencing sales. The problem, clearly, is not a technical problem and therefore the invention cannot take any technical merit from the problem. Therefore, the invention does not meet the fifth signpost.

No argument has been made with respect to the remaining signposts. Furthermore, it is clear to me that these signposts do not apply here.

Conclusion

38 I find the invention claimed in GB 1508111.0 falls solely within matter excluded under Section 1(2) as a business method and/or program for a computer as such. I therefore refuse the application under Section 18(3).

Appeal

39 Any appeal must be lodged within 28 days after the date of this decision.

Peter Mason

Deputy Director, acting for the Comptroller

⁷ *Lantana Ltd v The Comptroller General of Patents, Design and Trade Marks* [2014] EWCA Civ 1463, [2015] RPC 16 at [19], [70]