

Commissioner's Decision No. 1448
Décision du commissaire n° 1448

TOPICS: J-00 Meaning of Art
J-50 Mere Plan

SUJETS: J-00 Signification de la technique
J-50 Simple plan

Application No. 2,819,208
Demande n° 2 819 208

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,819,208, having been rejected under subsection 30(3) of the *Patent Rules*, has subsequently been reviewed in accordance with paragraph 30(6)(c) of the *Patent Rules*. The recommendation of the Patent Appeal Board and the decision of the Commissioner are to refuse the application.

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INTRODUCTION

- [1] This recommendation concerns the review of rejected patent application number 2,819,208, which is entitled “Video content navigation with revenue maximization”. The patent application is owned by Arris Technology, Inc. The outstanding defect indicated by the Final Action (FA) is that the claims do not define statutory subject-matter, contrary to section 2 of the *Patent Act*. The Patent Appeal Board (the Board) has reviewed the rejected application pursuant to paragraph 30(6)(c) of the *Patent Rules*. As explained below, our recommendation is to refuse the application.

BACKGROUND

The application

- [2] Canadian patent application 2,819,208, based on a previously filed Patent Cooperation Treaty application, is considered to have a filing date of December 19, 2011 and was published June 28, 2012.
- [3] The application relates to video-on-demand (VOD) content navigation, particularly to the sorting of the content presented in a list to subscribers so as to maximize revenue for the service provider.

Prosecution history

- [4] On January 6, 2016, an FA was written pursuant to subsection 30(4) of the *Patent Rules*. The FA stated that the application is defective on the ground that the claims on file (i.e. claims 1 to 26) do not comply with section 2 of the *Patent Act*.
- [5] In a July 6, 2016 response to the FA (RFA), the Applicant submitted arguments for allowance, contending that the claims are directed to statutory subject-matter.
- [6] As the Examiner did not consider the application to comply with the *Patent Act*, the application was forwarded to the Board for review on July 27, 2016, pursuant to subsection 30(6) of the *Patent Rules*, along with a Summary of Reasons (SOR) maintaining the rejection of the application based on the defect indicated by the FA.
- [7] With a letter dated July 29, 2016, the Board sent the Applicant a copy of the SOR and offered the Applicant the opportunity to attend an oral hearing and to make

further written submissions. With its response on December 30, 2016, the Applicant requested an oral hearing but made no further written submissions.

[8] This Panel was formed to review the application under paragraph 30(6)(c) of the *Patent Rules* and to make a recommendation to the Commissioner as to its disposition. Following our preliminary review, we sent a letter on October 30, 2017 (the PR letter) presenting our analysis and rationale as to why, based on the record before us, the subject-matter of the claims on file does not comply with section 2 of the *Patent Act*.

[9] In the November 27, 2017 response to the PR letter (RPR), the Applicant expressed disagreement with the results of our preliminary review but declined the opportunity for a hearing and made no substantive submissions, instead requesting reconsideration based on the current written record:

Applicant respectfully disagrees with the conclusions reached by the Patent Appeal Board in the Preliminary Remarks, and kindly asks that the Patent Appeal Board reconsider. Applicant believes that all of the claims before the Patent Appeal Board are directed to patentable subject matter for at least the reasons set out during prosecution of the subject application.

[10] As nothing has substantively changed in the written record since the preliminary review, we have maintained its rationale and conclusions.

ISSUE

[11] The issue to be addressed by this review is whether the claims on file define subject-matter falling within the definition of invention in section 2 of the *Patent Act*.

LEGAL PRINCIPLES AND PATENT OFFICE PRACTICE

Purposive construction

[12] In accordance with *Free World Trust v. Électro Santé*, 2000 SCC 66, essential elements are identified through a purposive construction of the claims done by considering the whole of the disclosure, including the specification and drawings (see also *Whirlpool v. Camco*, 2000 SCC 67 at paragraphs 49(f) and (g) and 52). In accordance with the *Manual of Patent Office Practice*, revised June 2015 (CIPO) at §13.05 [MOPOP], the first step of purposive claim construction is to identify the skilled person and his or her relevant common general knowledge (CGK). The next

step is to identify the problem addressed by the inventors and the solution put forth in the application. Essential elements can then be identified as those required to achieve the disclosed solution as claimed.

Statutory subject-matter

[13] The definition of invention is set out in section 2 of the *Patent Act*:

“Invention” means any new and useful art, process, machine, manufacture or composition of matter, or any new and useful improvement in any art, process, machine, manufacture or composition of matter.

[14] “Examination Practice Respecting Computer-Implemented Inventions”, PN2013–03 (CIPO, March 2013) [*PN2013–03*] clarifies the Patent Office’s approach to determining if a computer-related invention is statutory subject-matter.

[15] As stated in *PN2013–03*, where a computer is found to be an essential element of a construed claim, the claimed subject-matter is not a disembodied invention (e.g. mere ideas, schemes, plans or sets of rules, etc.), which would be non-statutory.

ANALYSIS

Purposive construction

The skilled person

[16] In the PR letter, we accepted the FA’s identification of the skilled person as a person or team with experience in the fields of VOD navigation systems, advertising and marketing.

[17] Although the Applicant, in its RPR, expressed disagreement with the conclusions presented in the PR letter, the Applicant made no argument to dissuade us from this identification. Therefore, we adopt it here.

The CGK

[18] Based on the identification of the CGK in the FA and on the application’s description of the background of the art, we identified the following concepts as CGK in the PR letter and the Applicant has not provided any reason to diverge from that identification:

- VOD systems and their operation;

- The hierarchical navigation systems of VOD systems, which can list content based on various sorting criteria;
- The typical use of computer servers and processors in VOD systems to perform mathematical methods in a more efficient and expedient manner;
- Presenting lists of VOD content according to general popularity or by criteria based on past user behaviour; and
- More generally, presenting or drawing attention to the products or services one wishes customers to buy.

The problem to be solved

[19] In the PR letter, we agreed with the FA that the problem is that VOD navigation methods and systems may miss revenue generation opportunities as consumers must wade through increasing amounts of uninteresting or irrelevant content, and may miss greater revenue generation opportunities as consumers select content generating less revenue. In response to the Applicant's contentions in the RFA that the problem and solution must be set out in the context of a VOD navigation method and system, we explained in the PR letter:

Based on what the description (paragraph 5) says about two drawbacks of existing VOD navigation systems, we agree with the characterization in the FA of the problem. However, this problem must be considered in light of the CGK and what the description (paragraphs 1 to 4) states is known.

As shown above, the application acknowledges the existence of VOD navigation systems capable of providing lists of content sorted according to different criteria and calculations, such as popularity or past user behaviour. Such systems and functions are part of the CGK. The skilled person would thus not see the problem as lying in the implementation of a VOD navigation system with sorting capabilities itself but in the calculations and rules used to sort the presented list.

[20] The Applicant has provided no additional argument to define the problem differently and we maintain that definition here: the problem is that calculations and rules currently used to sort lists of content for presentation in VOD navigation systems may miss revenue generation opportunities.

The proposed solution

[21] As explained in the PR letter:

The application (title; paragraphs 6 and 14; figure 2) characterizes the solution as a method of presenting a VOD navigation screen displaying a list of shows that has been ordered so as to maximize revenue for the service provider. The focus and level of detail in the application (e.g. paragraphs 18 to 72; figure 1), and what it identifies as necessary for and specific to the invention, show the solution to lie more in rules and calculations for ranking shows than in overcoming any challenges in implementing VOD navigation systems with the capability to sort lists of shows or present sorted lists of shows. This view is supported by the above identifications of the problem and of the CGK.

Thus, our preliminary view is that the solution is the algorithm used to rank the content items based on the estimated value of revenue for each item and the estimated probability that a subscriber will select it for viewing.

[22] The RPR contains no further argument to dissuade us from this identification and we maintain it here: the solution is the algorithm used to rank the content items based on the estimated value of revenue for each item and the estimated probability that a subscriber will select it for viewing.

The essential elements

[23] Independent claims 1, 3, 4, 18, 25 and 26 are directed to methods for maximizing revenue in a VOD system and to VOD systems themselves. Claim 1 is included here as a representative claim:

1. A method for maximizing revenue in a video-on-demand (VOD) system operated by a service provider, the video-on-demand system including a VOD server communicatively coupled to a content database comprising a plurality of VOD content items, a VOD revenue processor, a user interface (UI) server communicatively coupled to the VOD revenue processor and to the VOD server, the method comprising:

for the plurality of VOD content items, the VOD revenue processor calculating an expected revenue value (ER_T) to the service provider for each content item (T), based on an estimated value of revenue (R_T) for the content item, weighted by an estimated probability (P_T) that a subscriber will select the content item for viewing;

one or more of the VOD revenue processor and the UI server selecting the one or more highest ranked content items of the plurality of VOD content items, wherein a rank is determined such that content items having higher ER_T values are ranked higher than content items having lower ER_T values; and

the UI server delivering identifying information about the one or more highest ranked content items to a set-top device associated with the subscriber, for presentation to the subscriber on a menu from which the one or more highest ranked content items can be selected for viewing;

wherein if the content item is an advertising supported content item, R_T is calculated by multiplying a quantity of advertising availabilities allocated to the service provider for the content item, by a cost per impression for which the service provider can sell each of the advertising availabilities, by a retention rate associated with the content item.

- [24] As explained in the PR letter, the independent claims define similar elements and characteristics. The dependent claims add further limitations and constraints but retain the same essential elements as the independent claims.
- [25] The RFA contended that purposive construction of the claims should have resulted in the inclusion of the recited hardware and firmware functionality among the essential elements:

Applicant respectfully submits that Examiner has not construed the claims in a way that is consistent with the instructions of the Supreme Court. To paraphrase, the requirement is to focus on the complete and clear language of the claims, with consideration for the inventor's intent. Examiner has not done this, but rather, has disregarded all of the physical elements of the claims without any authority. There is no reasonable interpretation of any of the claims that would suggest the inventor's "purpose" is *not* to include the recited hardware/firmware functionality and Applicant submits that no court in Canada would consider the current claims as reading on a "*mental process*" as Examiner has asserted. [Emphasis in original.]

- [26] In response, the PR letter explained that purposive construction must consider the application as a whole, including the problem addressed by the application and its solution. In the present case, the solution relates to the algorithm itself, not to its implementation in the hardware of the VOD system. Such physical components may define the context or specific working environment of the claimed invention,

but are not essential elements of the claimed invention itself. As stated in *MOPOP* at §13.05.02c, “not every element that has a material effect on the operation of a given embodiment is necessarily essential to the solution.”

[27] Accordingly, as explained in the PR letter, despite the claims’ literal references to physical VOD components, we considered that the skilled person, based on the problem, solution and the relevant CGK, would understand claims 1 to 26 to share the same set of essential elements:

- calculating an expected revenue value (ER_T) to the service provider for each content item (T), based on an estimated value of revenue (R_T) for the content item, weighted by an estimated probability (P_T) that a subscriber will select the content item for viewing;
- selecting the one or more highest ranked content items of the plurality of VOD content items;
- wherein a rank is determined such that content items having higher ER_T values are ranked higher than content items having lower ER_T values; and
- presenting identifying information to the subscriber about the one or more highest ranked content items;
- wherein if the content item is an advertising supported content item, R_T is calculated by multiplying a quantity of advertising availabilities allocated to the service provider for the content item, by a cost per impression for which the service provider can sell each of the advertising availabilities, by a retention rate associated with the content item.

[28] As the RPR introduces no further argument, we adopt this identification of the essential elements here as well.

Statutory subject-matter

[29] The Applicant contended in the RFA that all the essential elements are explicitly or implicitly tied to a VOD method and system and its production of a tangible, physical result: the physical display of VOD content items in a certain order on a user interface.

[30] Having received no further submission on this matter, our consideration of this argument remains as it was set out in the PR letter:

[A]ny such physical components or steps may be part of the working environment, but it is the steps and rules of the algorithm that are the essential elements.

As for the step of presenting identifying information to the subscriber about the highest ranked content items, this simply represents an output from the ranking algorithm that comprises the solution proposed as the invention. Any physical components or steps involved in outputting data belong only to the working environment, as stated. The output information itself is abstract and has only intellectual meaning—it does not constitute a physical change or effect.

[31] The Applicant also contended in the RFA that the essential elements “include a large number of values which are analysed in real time” and that “all of these data points [are processed] in a complex, real time manner.” Therefore, submitted the Applicant, the claims should be considered allowable.

[32] As explained in the PR letter:

An algorithm or mathematical formula is abstract. An algorithm is no less abstract for employing mathematically intensive calculations and large amounts of data. Therefore, it would not matter to the determination of statutory subject matter here even if the essential algorithm here were considered to be “complex” or to involve a large number of values.

As for the Applicant’s argument concerning real-time computation, “the evaluation of the subject-matter of a claim for compliance with section 2 of the *Patent Act* is to be made on the basis of the essential elements” (*PN2013–03*). The essential elements, in turn, are those “elements of the claim that are essential to solve the identified problem” (*MOPOP* at §§13.05.01 and 13.05.02*c*).

Calculating an expected revenue value for each content item, ranking the content items accordingly and presenting a list of content items ordered according to rank does not need to be done in real time. Therefore, real-time computation is not a determinative factor as to whether any VOD system components are essential elements, and by extension, is not a determinative factor in the question of statutory subject-matter.

[33] As construed above, the essential elements are the abstract steps and rules of the algorithm for ranking content items based on their intellectual significance and predicted business character. Such matter is outside the categories of invention

within section 2 of the *Patent Act*. Therefore, our view is that claims 1 to 26 do not define statutory subject-matter and thus do not comply with section 2 of the *Patent Act*.

RECOMMENDATION OF THE BOARD

[34] In view of the above, the Panel recommends that the application be refused on the basis that claims 1 to 26 define non-statutory subject-matter and thus do not comply with section 2 of the *Patent Act*.

Leigh Matheson
Member

Ed MacLaurin
Member

Lewis Robart
Member

DECISION OF THE COMMISSIONER

- [35] I concur with the findings of the Board and its recommendation to refuse the application. The claims on file do not comply with section 2 of the *Patent Act*.
- [36] Accordingly, I refuse to grant a patent for this application. Under section 41 of the *Patent Act*, the Applicant has six months to appeal my decision to the Federal Court of Canada.

Johanne Bélisle
Commissioner of Patents
Dated at Gatineau, Quebec,
this 3rd day of May , 2018