

Commissioner's Decision # 1382
Décision du commissaire # 1382

TOPICS: O-00, A-11, G-00
SUJETS: O-00, A-11, G-00

Application No: 2,655,473
Demande no: 2,655,473

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application 2,655,473, having been rejected under subsection 30(3) of the *Patent Rules*, has consequently been reviewed in accordance with paragraph 30(6)(c) of the *Patent Rules*. The recommendation of the Board and the decision follow.

Agent for the Applicant

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INTRODUCTION

- [1] This decision deals with a review of the rejection of Canadian patent application No. 2,655,473, filed on June 14, 2007 and entitled “*Family Code Determination Using Brand and Sub-Brand*”. The Applicant and Inventor is J. Michels. The application pertains to improvements in the generation of bar codes on retail coupons.
- [2] The application was brought before the Patent Appeal Board on the grounds that the application is non-compliant with the *Patent Act and Rules* for obviousness, unacceptable new subject matter, and lack of utility.
- [3] For the reasons that follow, we recommend that the application be refused.

BACKGROUND

- [4] The application relates to the field of scannable bar codes, and in particular, the creation of a scannable bar code for use on retail coupons. Coupons are typically redeemed by consumers during a retail transaction to receive discounts or special pricing on products being purchased. The bar codes on the coupon allow for efficient scanning at a point of sale terminal, by encoding coupon data such as product information and coupon value.
- [5] Coupon bar codes have a standardized format that includes a number of fields. One common format is based on the Uniform Product Code (UPC) bar code, developed by the Uniform Code Council (UCC, now known as GS1). As seen in the adjacent illustration (adapted from Figure 1, UCC “*UPC Coupon Code Guidelines Manual*” 1994), the UPC



coupon bar code is a 12 digit numeric code comprising: a single digit number system character value (NSC), where ‘5’ indicates the bar code is for a coupon; a 5 digit manufacturer identifier (also called a company prefix); a 3 digit family code to identify the product or family of products for which the bar code is applicable; a 2 digit value code which designates the redemption value; and finally, a single digit

checksum to verify the accuracy of the previous eleven digits.

- [6] Family codes are used in conjunction with the manufacturer ID to validate that the consumer has purchased a product for which the coupon is valid. Family codes are assigned for every product that may be couponed. The selection of family codes for coupons can be difficult and time consuming, as manufacturers typically sell various brands, sub-brands and products, in numerous combinations of product size, colour, flavour, etc.
- [7] The application discloses a method and system for the generation of a coupon bar code, including a family code creation component for receiving coupon and product criteria from a user and suggesting a coupon family code based on the product, brand and/or sub-brand data that encompasses at least a selected plurality of products chosen by name. By automatically generating a suggested family code for a group of products, errors in the coupon generation process are reduced, and users of the system do not require detailed knowledge of every family code for all products.

PROSECUTION HISTORY

- [8] A Final Action was sent to the Applicant on January 17, 2013, rejecting the application based on two grounds: obviousness and lack of utility. As the Applicant's response to the Final Action did not overcome the defects, the rejected application was forwarded to the Patent Appeal Board ("the Board") accompanied by a Summary of Reasons (SOR) why the application is considered not to comply with the *Patent Act* and the *Patent Rules*. The SOR maintained the rejection of the application on the grounds of obviousness and lack of utility, and identified a new defect, stating that the claim amendments submitted in response to the Final Action introduced unacceptable new subject matter.
- [9] The Applicant's written reply to the SOR of October 10, 2013 provided further arguments regarding the three outstanding defects, and included two sets of proposed claims ('Appendix B' and 'Appendix C') for the Board to consider.

- [10] This panel conducted an initial review of the application, and in a letter dated April 23, 2014, invited the Applicant to respond to several preliminary observations regarding purposive construction and obviousness.
- [11] The panel also clarified that proposed claims 1-6 contained in Appendix B would be considered if necessary to overcome the identified defects, but that claims 1-27 contained in Appendix C would not be considered, as they lack a clear correspondence with the current claims and were not accompanied by an explanation as to how they overcome the identified defects. The Applicant was invited to respond to our letter, and provide an alternate proposed set of claims, if desired.
- [12] In a letter dated June 2, 2014, the Applicant advised the panel that no further submission would be provided and declined the panel's offer of a hearing. The Applicant requested that the review by the panel be based on the written record.
- [13] Accordingly, this review is based on claims 1-6 submitted in response to the Final Action ("claims on file"). As the review has determined that none of the claims on file comply with the *Patent Act* and *Patent Rules*, this review also considers claims 1-6 of Appendix 'B' submitted in response to the SOR ("proposed claims").

ISSUES

- [14] The SOR identified three issues for the panel to consider: obviousness, utility and new subject matter. Following our review, it has been determined that claims 1-6 on file do not lack utility, nor did their amendment introduce unacceptable new subject matter. Therefore, only one substantive issue remains for the panel to determine in this recommendation: Are claims 1-6 on file obvious, and thus in contravention of section 28.3 of the *Patent Act*?
- [15] However, for completeness, this recommendation will provide a summary of the panel's reasoning on the additional issues of new matter and utility, following our analysis of the issue of obviousness.

LEGAL PRINCIPLES

Claim construction

- [16] Following the Federal Court of Appeal decision in *Canada (Attorney General) v Amazon.com Inc.*, 2011 FCA 328 [*Amazon*], the Office released two examination memos which clarified examination practice with respect to the Office's approach to purposive construction (PN2013-02) and computer-implemented inventions (PN2013-03), in light of the relevant Canadian jurisprudence. Both of these memos were cited in our initial review letter.
- [17] Purposive construction of a patent application seeks to determine the meaning of terms used in the claims and which elements are essential to the invention. Purposive construction is performed through the eyes of the person skilled in the art, considering the specification as a whole against the background of the common general knowledge (CGK), including an understanding of the problem and solution addressed by the application. As noted in PN2013-02, one should recognize "that a patentable invention is an inventive solution to a practical problem" and "that an invention must be disclosed (and ultimately claimed) so as to provide the person skilled in the art with an operable solution". Once identified, the solution informs the determination of which elements are essential to the claimed invention. PN 2013-02 further indicates that "not every element that has a material effect on the operation of a given embodiment is necessarily essential for the operation of the invention."

Obviousness

- [18] Section 28.3 of the *Patent Act* provides that the subject-matter defined by a claim must be subject-matter that would not have been obvious on the claim date to a person skilled in the art or science to which it pertains, having regard to certain information:

The subject-matter defined by a claim in an application for a patent in Canada must be subject-matter that would not have been obvious on the claim date to a person skilled in the art or science to which it pertains, having regard to

- (a) information disclosed more than one year before the filing date by the applicant, or by a person who obtained knowledge, directly or indirectly, from the applicant in such a manner that the information became available to the public in Canada or elsewhere; and
- (b) information disclosed before the claim date by a person not mentioned in paragraph (a) in such a manner that the information became available to the public in Canada or elsewhere.

[19] A four-step approach for assessing obviousness was set out by the Supreme Court in *Apotex Inc v Sanofi-Synthelabo Inc*, 2008 SCC 61 [*Sanofi*], as follows:

1. (a) Identify the notional “person skilled in the art”;
(b) Identify the relevant common general knowledge of that person;
2. Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;
3. Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed;
4. Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

New Subject Matter

[20] Subsection 38.2(2) of the *Patent Act* sets out the conditions under which amendments may be made to the specification of a patent:

The specification may not be amended to describe matter not reasonably to be inferred from the specification or drawings as originally filed, except in so far as it is admitted in the specification that the matter is prior art with respect to the application.

- [21] The Act therefore requires that any amendments be “reasonably to be inferred” from the originally filed specification or drawings. Since inference is permissible, one need not find an explicit reference to the additional subject matter in the specification.
- [22] The assessment of new subject matter was recently addressed by the Board in *Re Application No. 2,313,707* (2013), C.D. No. 1353. That decision reaffirmed that the assessment is made from the point of view of the skilled person possessing the relevant CGK at the time of filing of the original specification.

Utility

- [23] Section 2 of the *Patent Act* sets out the definition of “invention”:
- “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.
- [24] An invention must therefore be useful: utility in the sense of the *Patent Act* can be considered as a requirement for an invention to be operable, controllable and reproducible (see *Manual of Patent Office Practice* (MOPOP) section 12.08.01).
- [25] The requirement that an invention be operable is simply an indication that it needs to work for its intended purpose. As affirmed by the Supreme Court of Canada in *Consolboard Inc. v. MacMillan Bloedel (Saskatchewan) Ltd.*, [1981] 56 C.P.R. (2d) 145 (S.C.C.) at page 160, a lack of utility exists if “the invention will not work, either in the sense that it will not operate at all or, more broadly, that it will not do what the specification promises that it will do.”

ANALYSIS

Purposive Construction

- [26] We consider the purposive construction of the claims on file prior to addressing the above issues.

Person skilled in the art and common general knowledge

- [27] Our initial review letter provided the Applicant our preliminary observations on the skilled person and their CGK, and invited the Applicant to provide comments if desired. As the Applicant did not submit comments or provide arguments in response to those observations, we will adopt them for the purposes of our review.
- [28] The person skilled in the art is considered to be a team including both a computer/database programmer and a coupon industry professional. The common general knowledge (CGK) of that person includes:
- a. knowledge of bar codes for manufacturer products, including knowledge of various (coupon) classification schemes;
 - b. knowledge of current product databases, and how to store information in electronic databases;
 - c. knowledge of the data fields used in coupon bar codes (as specified by UPC bar code standards, maintained by the Uniform Code Council (UCC), now operating as GS1); and
 - d. knowledge of common computer database functions, computer architecture, and programming techniques, the common use of web browsers or graphical user interfaces (GUIs), and the generally known use of computers to automate or otherwise facilitate manual steps.
- [29] The knowledge of the bar code data fields (point (c) above) is based on the UCC bar code data fields identified in the application at paragraphs [0003] and [0061] to [0075], and based on the document identified by the panel in our initial review letter: “*UPC Coupon Code Guidelines Manual*”, published September 1994 by UCC.

The problem and solution that the invention addresses

- [30] According to the description (pages 1 and 2), the encoding of coupon bar codes can be difficult and error prone, leading to increased manufacturer costs, lost sales, and delays in retail check-outs. A particular problem for coupon bar code encoding is the selection of a family code for a group of products. As noted earlier (paragraphs [5] and [6]), family

code selection requires that a 3 digit number be chosen for every product for which the user desires to have a coupon. Family code assignment follows a hierarchical structure using numbers between 100 and 990. Industry standards also dictate certain rules for family code assignment; for example, several family codes are reserved from use (e.g. codes 001-009 and 990-999), any code ending in a single '0' is defined as a *summary* family code, and finally, any code ending in '00' is defined as a *super summary* family code. Each of these special family codes has certain rules and restrictions on their use, as defined in the standards.

- [31] The problem addressed by the present application is the generation of a suitable family code which complies with the above rules and restrictions, and will permit a manufacturer to generate a single coupon which is redeemable for more than one product.
- [32] The solution proposed in the application is an improved computer implemented coupon bar code generation method which generates a suitable family code for a plurality of products based on a user selection of a brand, sub-brand, or product name, without the need for extensive training or knowledge of the family codes of the products or the rules associated for encoding a coupon family code. The solution addresses the noted difficulties in the encoding of coupon bar codes, specifically when determining a correct coupon family code based on the underlying family codes of a plurality of products.

Essential elements of the claims

- [33] There are 6 claims on file, including independent claims 1, 4, 5, and 6. Claim 1 is as follows:
1. A computer-implemented method comprising:
causing a user interface to be presented to a user, the user interface presenting a plurality of selectable items;
wherein each selectable item of the selectable items corresponds to a different product in a database of products;
wherein each of the different products is associated, in the database, with a product name, a sub-brand name, and a brand name;

wherein each selectable item of the selectable items is associated, on the user interface, with the product name, the sub-brand name, and the brand name associated with the product corresponding to the selectable item; receiving, from the user through said user interface, a selection of two or more of the selectable items; wherein the two or more products corresponding to the two or more selected items are associated, in the database, with a plurality of different family codes; obtaining the plurality of different family codes from the database in response to the request; automatically generating a suggested family code from the plurality of different family codes; wherein generating the suggested family code includes selecting a numerical value that is rounded off to a significant digit that is common to all of the plurality of different family codes, or selecting a reserved value when the plurality of family codes have no common digits; generating a bar code symbol for a coupon based on the suggested family code.

- [34] The Final Action (page 4) summarized the construction of all claims, indicating that all the claimed features were considered to be essential for solving the problem faced by the inventors. The Applicant did not provide specific comments on the essential elements.
- [35] In considering the problem and solution, the panel finds that a skilled person would understand that the elements of claim 1 work together in a material way to provide the solution disclosed. The essential elements of the solution include the functionality of a user interface for selection of a plurality of products based on their product names, sub-brands and brands from a database, and the functionality to generate a suitable family code for the plurality products, based on the individual family codes of the selected products. The suggested family code is generated by rounding off to the significant digit which is common to the individual family codes of the selected products. Alternatively, when no significant digit is common among the individual family codes, then the step of generating the suggested family code is simply to select a reserved code. A bar code is then generated for the coupon using this family code, enabling a single coupon to be redeemable for at least the multiple selected products.

- [36] Given the solution disclosed and the considerations discussed above, we consider that the essential elements that the skilled person would consider material to the invention are:
- a computer implemented user interface, to select from a database the desired products based on name, sub-brand and brand, and
 - determining the suggested family code by rounding off to a significant digit that is common to all of the family codes of the plurality of selected products, or, alternatively, using a reserved value when there are no common digits, and using the suggested family code to generate a suitable bar code symbol.
- [37] This determination of the essential elements is consistent with that of the Final Action, reworded for simplification, and with the addition of the feature of alternatively using a reserved value when there is no significant common digit. As the Applicant made no submission regarding the construction of the claims, we need not further elaborate on this matter. We further note there does not appear to be any issues with the meaning of any of the terms used in the claims.
- [38] It is arguable that the solution might be viewed as the calculation of a suggested family code by simply following a set of rules, and thus it could be argued that the only essential elements are non-statutory rules, calculations, or algorithms (similar to the non-patentable subject matter discussed in *Schlumberger Canada Ltd v Commissioner of Patents*, [(1981), 56 C.P.R. (2nd), 204 (F.C.A.)]). However, since the Final Action did not address this possibility, and in view of our conclusions on the issue of obviousness below, the panel need not consider this issue any further.
- [39] The remaining independent claims define alternative embodiments of the invention, incorporating the same essential features as claim 1: claims 4 and 6 define system embodiments of the method of claim 1, and claim 5 defines a computer readable medium for the method of claim 1.
- [40] Dependent claims 2 and 3 each introduce an additional essential feature to claim 1. Claim 2 defines generating specific identifiers in the bar code symbol being produced by the

method of claim 1. Claim 3 defines displaying one or more ineligible products for which the suggested family code generated by the method of claim 1 does not apply.

Are claims 1-6 obvious?

Step 1: Identify the notional “person skilled in the art” and the common general knowledge of that person

[41] Both of these two steps have been addressed earlier with our construction of the claims (paragraphs [27] and [28], above), and those results will be applied to our analysis here.

Step 2: Identify the inventive concept of the claim in question or if that cannot readily be done, construe it

[42] The Final Action provided an inventive concept based on the claims previously on file (claims prior to the “claims on file”). The Final Action maintained the same inventive concept from claim 1 for each of the remaining independent claims. We agree that this approach was correct in this case, as the claims differ only in their form (i.e., method, system, or computer readable medium). Therefore the inventive concept identified in the Final Action is the same for claims 1, 4, 5 and 6:

a computer method which allows a user (presumably a manufacturer) to create a coupon by selecting a range of products that are to be associated with that single coupon. The products are stored in a database, and displayed via a GUI. Upon selection of the products, a common significant digit is identified as being the basis for a Suggested Family Code to link all the products together. That Suggested Family Code is stored in a bar code that will appear on the coupon.

[43] The Applicant did not provide any alternative wording or disagree with this inventive concept. However, we make two observations: First, after the Final Action, the application was amended such that the current claims on file include the additional alternative feature of selecting a reserved value when there are no common digits. Second, we note that the above inventive concept does not specify that the selection of

products may be made by name, brand or sub-brand (rather than by number codes). Our purposive construction of the claims (at paragraph [36]) has addressed these two observations.

[44] Considering the problem and the solution being addressed and the purposively construed claims, the panel considers that the inventive concept of the independent claims is a coupon bar code generation method that includes the functionality of:

- a computer implemented user interface, to select the desired products based on name, sub-brand and brand, rather than knowledge of the numerical family codes and
- determining the suggested family code by rounding off to a significant digit that is common to all of the family codes of the plurality of selected products, or, alternatively, using a reserved value when there are no common digits.

Step 3: Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed

[45] The Final Action and SOR identifies the following single reference as prior art:

Patent document:

US2004-0103023A1

27 May 2004

Irwin

[46] *Irwin* discloses (see Abstract and page 5) a coupon bar code verification system that verifies that a coupon is valid for the appropriate products after a coupon is created, but prior to its issuance. The verification process provides a list of possible errors and remedies for a scanned coupon. The verification is based on industry standards such as the UCC (GS1) guidelines and standards for bar code formats. Warnings are provided to a user when a scanned coupon includes a summary family code, a super summary family code, or the 992 bypass family code.

[47] The system in *Irwin* (see paragraphs [0039] to [0041]) incorporates a user interface and display, and produces either a validation report if the coupon is readable by point of sale

terminals, or a failure report if the coupon bar code is not readable. Verification includes generating a product list of all products for which the coupon is valid, based on the family code and company prefix data of the bar code.

- [48] The user interface of *Irwin* does not explicitly allow for the selection of a group (or plurality) of products, brands or sub-brands by name prior to the assignment of a family code. Instead, the user interface of *Irwin* is designed for coupon verification after products and their family codes have already been assigned to a coupon bar code.
- [49] Regarding the manner of generating the family codes, *Irwin* does not explicitly disclose the specific manner of how to generate a suggested bar code by rounding off to a significant digit common to the individual family codes, since in *Irwin*, family codes appear to have been assigned prior to the use of the bar code verification system. *Irwin* also does not discuss generating a suggested bar code by “*selecting a reserved value when the plurality of family codes have no common value*”.

Summary of differences

- [50] In view of the foregoing, we conclude that the differences between the inventive concept of claims 1, 4, 5 and 6 and the state of the art are:
- i. a user interface to select a group (or plurality) of products, brands or sub-brands by name, and
 - ii. generating a suggested coupon bar code by:
 - a. the rounding off to a significant digit common to the individual family codes of the selected products, **or**
 - b. selecting a reserved value when the plurality of family codes have no common value.

Step 4: Do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

Difference (i) - a user interface to select a group of products, brands, sub-brands by name

- [51] The skilled person would recognize that family codes by definition are inextricably linked to the individual products to which they are assigned. According to the UCC Guidelines (section 4.3), family codes are assigned to products. Further, the Guidelines advise manufacturers to “*anticipate all potential combinations of products likely to be covered by a single coupon offer when originally establishing family codes*”. This affirms that in any selection or assignment of family codes, knowledge and understanding of the products and their relationship to other products is required. It would be logical to the skilled person that such knowledge of the selected products would invariably and without ingenuity include product information, including name, brand, and sub-brand details.
- [52] Second, although not fully described, Irwin discusses at paragraph [0039] a “Family Code Manager” which “*displays the family code data in an easy to read hierarchical text structure, links all current point of sale products to their appropriate family codes...and highlights family code usage that conflicts with UCC guidelines*”. This reiterates the known linking of product names with family codes for ease in selecting products for coupons and coupon bar codes. Furthermore, in this passage, *Irwin* identifies the concept of a user interface designed to manage the family codes and products. A fully functional user interface as contemplated by the Family Code Manager in *Irwin* would logically display and identify the products under management by name, brand details, etc. As seen in Figure 7 of *Irwin*, the bar code verification system identifies the products by name and description: the skilled person would, without any inventive ingenuity, design any family code manager interface to display at least the same information as in Figure 7.
- [53] Given these facts, one skilled in the art would recognize that the starting point in the process of assigning a family code is the identification of the plurality of products. It would be logical to the skilled person that, for ease of identification, the products be listed or presented by use of their commonly known name. It would be apparent to the skilled person that the easiest way to select a group of products would be to choose them from a list based on descriptive language that identifies the product, rather than based on a string of numbers such as a product ID code. It was also known from the “Family Code Manager” in *Irwin* to provide a user interface to list product names for the management of family codes. As per the UCC Guidelines, when assigning family codes for a single

coupon to be valid for multiple products, “family code management” inherently involves assigning a family code to a listing of products. Therefore the idea of a user interface to display the names, brands or sub-brands of the products to be selected lacks inventive ingenuity.

- [54] Regarding the question of whether or not the implementation of a user interface would be inventive over the manual assignment of a family code based on a selection from a list of product names, the panel considers this to be an obvious implementation. The skilled person, having knowledge of computer architectures, databases, and programming techniques, the use of web browsers or graphical user interfaces (GUIs), and the use of computers to automate or otherwise facilitate manual steps, would readily implement the idea of a listing of product names, brands and sub-brands from which to select products. The disclosure does not describe any specific implementation details beyond those skills of the person skilled in the art. The skilled person would also appreciate that only routine programming would be necessary once the idea to automate a user interface had been conceived. Therefore, there is no degree of ingenuity required to implement the idea of providing a user interface to select a plurality of products, brands or sub-brands by name.

Difference (ii)(a) - rounding off to a significant digit common

- [55] As noted earlier (paragraph [30]), *summary family codes* are family codes ending in a single ‘0’, and when used on a coupon, will validate “*any item whose family code has the same first two digits as the number which ended in ‘0’*” (UCC Guidelines, paragraph 4.4). For example, summary family code 210 will validate the coupon for the purchase of any product with a family code from 211 through 219. In other words, inherent in the definition of the summary family code is the fact that it is based on rounding off to a significant digit that is common to all of the individual products. For product family codes 211 and 212, the common significant digit is the ‘1’, and the rounded off numerical value is ‘210’. This is identical to the particular solution in the inventive concept of claims 1-6.
- [56] Likewise, a *super summary code* is by definition a family code that ends in the digits ‘00’, and validates a coupon for use in any product that contains the first digit that

precedes the two zeros (UCC Guidelines, paragraph 4.4). For example, products having family codes 219, 239 and 288 will all be valid individual products for use with a coupon having a super summary family code of 200, based on a rounding off to the significant digit common to the three values 219, 239 and 288, namely, the value '200'. The method of rounding used in the definition of a super summary code is identical to that used in the inventive concept of claim 1-6.

- [57] *Irwin* (paragraph [0046] and Table I) also discloses the well known use of summary family codes and super summary family codes in the validation of a coupon family code for a group of products. In Figure 7, a coupon bar code being validated indicates that the coupon family code is 300 (a super summary code), covering products with family codes of 311, 312, 321 and 322.
- [58] There is no ingenuity in specifying that the suggested family code is based on rounding off to a significant digit common to the pre-existing individual family codes. The manner of determining the suggested family code in the inventive concept of claims 1-6 is equivalent to the manner of determining a summary family code or super summary family code as defined in the UCC standards. Although the concept of "rounding off to a significant digit that is common" is not explicitly disclosed in the Guidelines as the manner for assigning summary codes or super summary codes, the skilled person would immediately and without ingenuity understand the mathematical concepts as the same.
- [59] In response to the Final Action, the Applicant further argues that since it would be known that there is an alternative manner in which the suggested family code could be determined, then the claimed method would not be inherent from the teaching of *Irwin*. The Applicant provided an example wherein a summary code could be generated by first selecting '110' as the a summary code, then subsequently assigning codes '111' to '119' to the individual products desired. In other words, the Applicant argues that the suggested family code could be directly entered by a user first, before the product codes are determined.
- [60] However, we do not agree that this line of reasoning changes the obvious nature of the manner of determining the family codes as presently claimed. The UCC guidelines state

that the summary codes are used to create coupons for a series of products whose assigned family codes begin with the same first two digits (or first digit for super summary codes). The skilled person would understand that this requires that the product family codes have been previously assigned before one can generate a summary code. Therefore, the disclosure of *Irwin* would not be read in a manner inconsistent with that of the skilled person and their CGK. The alternative reading of *Irwin* as proposed by the Applicant above is inconsistent with the common general knowledge, and is therefore not a compelling reason why the claimed subject matter would not be obvious.

Difference (ii)(b) - selecting a reserved value when plurality of codes have no common value

- [61] In a situation wherein a suggested family code could not be automatically generated because of the lack of common digits, there are a finite number of alternative solutions. One solution known to the skilled person is to allow for a manual entry of a user selected value. Another solution would be to automatically assign some other family code that is not based on the rounding off to a significant digit.
- [62] As previously discussed, reserved family codes from 990 to 999 were well known on the claim date (for example, UCC guidelines, page 7). As acknowledged in the application (paragraph [0087]), the 992 bypass family code is one reserved value known to allow a coupon to be validated without reference to the exact product being scanned. In this manner, the 992 bypass code allows the validation of the purchased products to be “bypassed”. *Irwin* (Table 1) also describes the 992 bypass family code as allowing for “non-validated scanning”. Therefore, the use of a reserved value (any of the reserved family codes 990 to 999) for a family code was known on the claim date. It provides an alternate family code in circumstances where a summary code or super summary code is, for whatever reason, not suitable.
- [63] The additional limitation of selecting a reserved value when there is no common digit is an inevitable and logical choice for the skilled person. For example, in the manual method for assigning a suggested family code, where a plurality of individual codes have no common digits (for example, codes 111 and 222), the skilled person would need to assign a suitable code that would achieve the desired goal of having a single coupon valid

for the selected products. Since there are no common digits, there are no super summary codes that will accommodate that desire. The remaining tool for the skilled person to manually assign a suitable family code, according to the standards set out by the industry, is a reserved value, such as the 992 bypass code. Use of a 992 bypass family code will allow the desired effect of having a single coupon that is valid for the plurality of individual products.

- [64] In the automated method of claim 1, given a similar scenario where a plurality of selected products have no common digits from which to round to a suitable family code, it would be obvious to likewise employ the 992 bypass family code so as to achieve the same goal of having a single coupon valid for the plurality of individual products. Therefore, the skilled person would see no degree of invention in difference (ii)(b), the generation of a suggested family code by selecting a reserved value.
- [65] Having determined that there is no inventive step with respect to the differences considered separately, we assess whether or not there is invention in their combination.
- [66] Combining the user interface with the known methods of assigning a family code for a plurality of products (based on a summary family code, a super summary family code, or a reserved bypass family code) does not produce any unexpected result or represent an ingenious advance to either the user interface or generation of a suggested family code. Therefore, the skilled person would require no inventive ingenuity in combining the two differences.
- [67] Accordingly, claims 1, 4, 5 and 6 on file are obvious.

Dependent claims 2 and 3

- [68] Claim 2 defines “[t]he computer-implemented method of Claim 1, where generating a bar code symbol further includes generating the bar code symbol using a number system character and an application identifier”.
- [69] At paragraph [5], we noted that a “number system character” or NSC digit is a standard feature for bar codes according to the UCC standards, where the number ‘5’ indicates a

bar code to be used on coupons. Support for this is also found at paragraph [0003] of the instant description, and the skilled person would know this feature as part of their CGK. Regarding the application identifier, the skilled person, having knowledge of the UCC standards for bar codes, would be familiar with the additional data fields associated with the extended bar code specifications (UCC/EAN-128), described at paragraphs [0003] and [0066] of the description. Therefore, the use of these specific data fields by the skilled person in the generation of a bar code would be routine and un inventive.

- [70] Claim 3 defines “[t]he computer-implemented method of Claim 1, further comprising displaying one or more ineligible products for which the suggested family code is inapplicable”.
- [71] *Irwin* (Figure 7) illustrates the validation of a coupon bar code with a super summary family code of 300 covering products with family codes of 311, 312, 321 and 322. In this case, the skilled person is taught that the products that are eligible for a particular family code are displayed. The skilled person, knowing the use of super summary codes, would also recognize the idea that other products that are not covered by the coupon with a family code of 300 could be displayed. Furthermore, it would be a routine and trivial matter for the skilled person to implement such a display by identifying those products for which the summary family code and super summary family code standard does not apply, and then display those products as ineligible products. Therefore, there is no degree of invention defined by the subject matter of claim 3.
- [72] The skilled person would consider there is no inventive step involved in the additional features of dependent claim 2 and 3, considered individually and in combination with the features of claim 1, upon which they depend. Accordingly, claims 2 and 3 are obvious.

Proposed Claims of Appendix B

- [73] We consider proposed claims 1-6, in order to determine whether or not they rectify the obviousness of the claims on file.

[74] Proposed independent claims 1, 4, 5 and 6 replace the phrase “...or selecting a reserved value when the plurality of family codes have no common digits...” with “...or selecting a user provided value”. Therefore, the wherein clause of proposed claim 1 becomes:

wherein generating the suggested family code includes selecting a numerical value that is rounded off to a significant digit that is common to all of the plurality of different family codes, or selecting a user provided value; (emphasis added)

[75] However, we do not consider this feature, alone or in combination with the other features of the claim to be inventive in view of *Irwin* and the CGK of the skilled person.

[76] Providing a user value as a suggested family code instead of automatically generating one is the same as the default manual entry of a family code, known in the art. As discussed in the UCC Guidelines, the known manner of selecting a family code for a plurality of products is simply to manually select a suitable summary code or super summary code. This becomes a user provided summary code value. There is nothing inventive in this method of generating a suggested family code, since it is simply the previously known manual method, and the method that the present invention was attempting to improve.

[77] One might argue that the inclusion of a feature to allow for manual entry of a user-provided value would be a non-obvious improvement to an otherwise automated family code generation method. However, it would be well known and common practice to the skilled person, having familiarity with common computer programming and user interface techniques, to provide a user interface with a “manual entry” option for data entry, in order to provide redundancy or alternative data entry for circumstances when the “automated” suggested entry does not function.

[78] As the proposed claims define obvious subject matter, they cannot be relied upon to overcome the obvious claims on file, and therefore the panel does not recommend that the proposed claims be submitted by amendment.

OTHER ISSUES:

Do claims 1 and 4-6 introduce unacceptable new matter?

- [79] In reply to the Final Action, the Applicant chose to amend the independent claims to define an additional step:
- “...wherein generating the suggested family code includes selecting a numerical value that is rounded off to a significant digit common to all of the plurality of different family codes, or selecting a reserved value when the plurality of family codes have no common digits;” (emphasis added)
- [80] The SOR contends that the amendment is unacceptable new matter as the terms “reserved value” and “common digit” are not supported by the original specification.
- [81] We find that the skilled person would reasonably infer these terms from the original specification and drawings. In regards to “*reserved value*”, paragraph [0087] of the description states that a “*992 bypass family code*” may be a suggested family code on a coupon. The person skilled in the art, considering the known coupon code standards (paragraph [28](c), above) would have knowledge that the 992 bypass family code was one of several reserved family codes. Accordingly, as disclosed at paragraphs [0074] (reserved family code) and [0087] (bypass family code), the term “reserved value” as claimed is reasonably inferred.
- [82] The other disputed term, “common digits”, although not explicitly disclosed in the specification, is nevertheless an expression of a common mathematical concept. It would be understood by the skilled person working in coupon bar codes to mean any digit (or digits) that are shared or common between two or more 3-digit family codes. Thus, the term “common digits” would also be reasonably inferred from the specification.
- [83] We also consider these terms in the context as claimed; namely, whether or not it is reasonably inferred that a reserved value would be used as a suggested family code when the plurality of family codes have no common digits?
- [84] In paragraphs [0058], and [0085] to [0087] of the application, two options are disclosed for suggesting a suitable family code for more than one product when no common digits exist: either a manually entered family code by the user, or the use of a “992 bypass family code”. To the skilled person, it would be logical to use a “992 bypass family code”

as the manner of generating a suitable suggested family code rather than requesting a manual, user input, since the invention seeks to reduce the errors and difficulties in the manual bar code creation methods, in part by providing a method to automatically generate a suitable family code.

- [85] Therefore, the skilled person, considering the circumstance when no common digits existed among the products being selected, would reasonably infer that the disclosed “992 bypass family code” is an alternative manner of generating a suggested family code.

Do claims 1 and 4-6 lack utility?

- [86] The Final Action specifically noted two instances when, in view of the description and Figures 7C-8F, the invention would not operate as described:

- (a) when a user happens to select two or more products which do not share any common digits, no suggested family code is generated, so the invention cannot operate as intended; and
- (b) when two or more products are selected by the user, and other products are not selected, the generated suggested family code may nevertheless also be valid for the unselected products, and thus the intended goal to reduce coding errors is not achieved.

- [87] In reply to point (a), the Applicant chose to amend the claims to include the additional feature of “*selecting a reserved value when the plurality of family codes have no common digits*”. The panel considers that by explicitly defining the use of a bypass code for the situation where no common digits are identified in the individual family codes, any inoperable circumstance whereby a suggested family code could not be determined is overcome.

- [88] Regarding point (b), the Applicant argued that the claims are not inoperable as they define a solution that achieves the intended function of the invention, in that the generated suggested family code covers at least the products that were selected.

- [89] We do not consider that the situation where a suggested family code leads to a coupon being valid for unselected products is a situation which renders the invention inoperable. The invention as claimed does what it sets out to do: it automatically generates a suggested family code for a plurality of selected products for which a single coupon is desired. While it may be preferable that the suggested family code should also not apply for the unselected products, such a perceived shortcoming in design or operation does not render the claim inoperable.
- [90] Furthermore, paragraph [0081] of the description states that “*the GUI may display a list of products or families of products for which the previously requested bar codes are not applicable*”. In this manner, the user can see what products will not be covered by the coupon that has the bar code as generated. The skilled person would not construe the specification as promising that the suggested family codes are not to include products to which the coupon does not apply.
- [91] Therefore, the original claims on file do not lack utility under Section 2 of the *Patent Act*.

RECOMMENDATION OF THE BOARD

- [92] In view of the above findings, the Board recommends that the application be refused on the grounds that claims 1-6 on file are obvious and are therefore non-compliant with subsection 28.3 of the *Patent Act*.

Andrew Strong
Member

Paul Fitzner
Member

Stephen MacNeil
Member

DECISION

- [93] I concur with the findings and the recommendation of the Board that the application be refused as claims 1-6 on file are obvious and are therefore non-compliant with subsection 28.3 of the *Patent Act*, and that proposed claims 1-6 do not overcome this defect.
- [94] Therefore, in accordance with section 40 of the *Patent Act*, I refuse to grant a patent on this application. Under Section 41 of the *Patent Act*, the Applicant has six months within which to appeal my decision to the Federal Court of Canada.

Agnès Lajoie
Assistant Commissioner of Patents

Dated at Gatineau, Quebec,
This 15th day of July, 2015