

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To: Barry W Chapin  
Chapin Intellectual Property Law LLC  
Westborough Office Park 1700 West Park Dr  
Westborough, MA 01581

Date of mailing  
(day/month/year)

26 OCT 2007

Applicant's or agent's file reference  
CHS06-01PCT

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.  
PCT/US 06/25441

International filing date (day/month/year)  
28 June 2006 (28.06.2006)

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28 June 2005 (28.06.2005)

International Patent Classification (IPC) or both national classification and IPC  
IPC(8) - G06F 13/00 (2007.01)  
USPC - 725/46

Applicant  
Choicestream Inc

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US  
Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450, Alexandria, Virginia 22313-1450  
Facsimile No. 571-273-3201

Date of completion of this opinion  
29 June 2007 (29.06.2007)

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300  
PCT OSP: 571-272-7774

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Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

- the international application in the language in which it was filed  
 a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- a sequence listing  
 table(s) related to the sequence listing

b. format of material

- on paper  
 in electronic form

c. time of filing/furnishing

- contained in the international application as filed  
 filed together with the international application in electronic form  
 furnished subsequently to this Authority for the purposes of search

3.  In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	None	YES
	Claims	1-37	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-37	NO
Industrial applicability (IA)	Claims	1-37	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-37 lack novelty under PCT Article 33(2) as being anticipated by US 2005/0131762 A1 to Bharat et al. (hereinafter 'Bharat').

As to claim 1, Bharat teaches a method of selecting at least one advertisement (Ad Serving Operations), the method comprising: examining a user profile based on a knowledge associated with a user; examining a content context profile associated with a type of application and an application (targeting) environment; examining an advertisement profile associated with a plurality of advertisements (selecting from the plurality of ads), the plurality of advertisements including a plurality of attributes; and conditionally selecting at least one preferred advertisement from the plurality of advertisements for presentation to the user, the at least one preferred advertisement selected based on a statistical analysis (Statistical Information) of the user profile, the advertisement profile, and the content context profile (Optimization Operations) (see para [0045]-[0048], [0084]-[0085], and fig 2).

As to claims 2-3, Bharat teaches the method comprising: creating the user profile (initial or baseline UPI); initializing a state of knowledge associated with the user profile; re-profiling the user profile; and after the re-profiling (expansion and/or reinforcement phase), updating (revised or reinforced) the state of knowledge associated with the user profile (see para [102]); and further comprising: creating the content context profile; initializing a state of knowledge associated with the content context profile; re-profiling the content context profile; and after the re-profiling, updating the state of knowledge associated with the content context profile (UPI for a user or document or ad or ad landing page) (see para [102]).

As to claims 4-5, Bharat teaches the method further comprising: creating the advertisement profile (ad targeting); initializing a state of knowledge associated with the advertisement profile; re-profiling the advertisement profile; and after the re-profiling, updating (updated or extended) the state of knowledge associated with the advertisement profile (see para [0084]-[0086] and [0101]) and further comprises assessing a reaction (response) of the user to the at least one preferred advertisement; and utilizing the reaction of the user to perform a re-evaluation of the user profile or a new update of the state of knowledge associated with the user profile (user-to-user associations may also be generated) (see para [0111]).

As to claims 6-8, Bharat teaches the method wherein examining a user profile based on a knowledge associated with a user comprises: assigning the user to at least one cohort, the at least one cohort including a demographic cohort or a geographic cohort (The UPI attributes 420 may include information concerning user background and interests such as, for example, geographic information, age or age group, topics of interest, reading level, income and other demographics suited for targeting advertisements) (see para [0068]); wherein assigning the user to at least one cohort comprises: using a probabilistic cohort selection technique to assign the user to a latent cohort (probability of the attribute) (see para [0068]); wherein assigning the user to at least one cohort comprises assigning the user to a default cohort (initial user profile) (see para [0016] and [0101]-[0102]).

As to claims 9-11, Bharat teaches the method wherein assigning the user to at least one cohort comprises: evaluating the knowledge (collections of information) associated with the user including demographics of the user (age or age group), at least one socioeconomic characteristic (income) of the user, or at least one location of the user (geographic information) (see para [0067]-[0068]); and wherein evaluating the knowledge associated with the user comprises: evaluating at least one recent search query including at least one web search query (previous queries that the user has made (see para [0068]-[0073]); and wherein evaluating the knowledge associated with the user comprises: evaluating the at least one recent interest of the user including at least one recent searched query (previous queries that the user has made) or at least one page recently visited (the content of websites that the user has visited, or visited in a certain time period) (see para [0068]-[0073]).

As to claim 12, Bharat teaches the method wherein examining an advertisement profile associated with a plurality of advertisements comprises: examining at least one prospective advertisement within the plurality of advertisements, the at least one prospective advertisement including a product recommendation (the ads may be in the form of graphic ads such as so called banner ads, text only ads, image ads, audio ads, video ads) (see para [0037]).

As to claims 13-14, Bharat teaches the method of claim 1 wherein examining a content context profile associated with a type of application (relevancy determination operations) and an application environment comprises creating a content context profile including a web page on which the at least one prospective advertisement is presented (the advertisers web page) (see para [0045]); and wherein creating a content context profile comprises: examining at least one attribute associated with the content context profile (user attribute information may then be matched against advertiser specified attributes) (see para [0037]), the at least one attribute includes at least one attribute of a web page on which the at least one prospective advertisement is presented (the advertisers web page ).  
(See Supplemental Box)

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Box No. V --- Reasoned Statement

2. Citations and Explanations:

As to claims 15-18, Bharat teaches the method of claim 1 wherein examining an advertisement profile associated with a plurality of advertisements comprises: examining at least one attribute, the at least one attribute including at least one sound (music) associated with at least one prospective advertisement within the plurality of advertisements (see para [0038]); wherein conditionally selecting at least one preferred advertisement from the plurality of advertisements for presentation to the user comprises: utilizing an optimization metric (optimization operations) to condition the selection of the at least one preferred advertisement (see para [0045] and fig 2); wherein utilizing an optimization metric to condition the selection of the at least one preferred advertisement comprises: defining the optimization metric to include a click through rate (click-through related to the ad) defining a rate at which a prospective advertisement, displayed to a plurality of prospective users, is selected by the plurality of prospective users (measured or observed user behavior related to ads that have been served). (see para [0037]); and wherein utilizing an optimization metric to condition the selection of the at least one preferred advertisement comprises: defining the optimization metric to include an expected advertisement revenue based on a rate at which a prospective advertisement is displayed to at least one prospective user (maximizing ad revenue without impairing the users experience), the expected advertisement revenue including advertisement serving engine revenue (see para [0010]).

As to claim 19, Bharat teaches the method wherein utilizing an optimization metric to condition the selection of the at least one preferred advertisement comprises: weighting (weighted by scores) at least one attribute associated with at least one prospective advertisement (document UPI), the weighting resulting from an assessment of an amount to which the state of knowledge associated with the user profile (user UPI), the state of knowledge associated with the content context profile, and the state of knowledge associated with the advertisement profile values the at least one attribute (see para [0110]-[0120] and fig 4).

As to claim 20, Bharat teaches the method of claim 1 wherein conditionally selecting at least one preferred advertisement from the plurality of advertisements for presentation to the user comprises: calculating a probability that the user will select the at least one preferred advertisement (advertisements can be ranked using the scores generated by such a function), the probability based on at least one of the user, advertisement or content context profile (targeting UPI vector) (see para [0128]-[0132]).

As to claims 21-22, Bharat teaches the method of claim 20 wherein calculating a probability that the user will select the at least one preferred advertisement (tend to click on an ad may be determined using data mining techniques) comprises: formulating the probability based on a latent cohort click model a random coefficient click model; and wherein formulating the probability based at least one of a latent cohort model and a random coefficient click model comprises: utilizing historical data to estimate at least one parameter used to compute the probability (additional information determined from historical data) (see para [0128]-[0132]).

As to claims 23-24, Bharat teaches the method of claim 5 wherein assessing a reaction of the user to the at least one preferred advertisement comprises: identifying a sub set of user selected advertisements including a plurality of advertisements selected by the user (personalized results, selecting a result); and identifying a sub set of non user selected advertisements including a plurality of advertisements not selected by the user (not selecting a result) (see para [0068]-[0080]); and wherein utilizing the reaction of the user to perform at least one of a re-evaluation of the user profile (see [0111]), a new update of the state of knowledge associated with the user profile (see para [0114]), the state of knowledge associated with the content context profile, and the state of knowledge associated with the advertisement profile, and an evaluation of the step of conditionally selecting the at least one preferred advertisement comprises: assessing a score for the at least one preferred advertisement, the score based on an interaction of the user with the preferred advertisement and an activity history of the user (web pages that the user selected), an attribute of the content context profile (neighborhood UPI), an attribute of the advertisement profile (document UPI), and a user profile associated with the user (user UPI) (see para [0111]-[0120]).

As to claim 25, Bharat teaches the method of claim 5 wherein utilizing the reaction of the user to perform at least one of a re-evaluation of the user profile, a new update of the state of knowledge associated with the user profile, the state of knowledge associated with the content context profile, and the state of knowledge associated with the advertisement profile, and an evaluation of the step of conditionally selecting the at least one preferred advertisement comprises: assigning an attribute weight to at least one attribute associated with the at least one preferred advertisement; compiling an activity history of the user associated with the at least one preferred advertisement; and adjusting the attribute weight based on the activity history of the user (see fig 7 and para [0111], [0116]).

As to claim 26, Bharat teaches the method of claim 2 wherein updating the state of knowledge associated with the user profile comprises: compiling a cumulative history based on a history associated with a plurality of advertisements that are user selected or a history associated with a plurality of advertisements that are non user selected) (see para [0077], [0095], [0145]).

As to claim 27, Bharat teaches the method of claim 2 wherein updating the state of knowledge associated with the user profile comprises: periodically updating the user profile based on a specified update frequency (attribute frequency-inverse document frequency product) (see para [0132]).

As to claims 28-29, Bharat teaches the method of claim 1 comprising: receiving at least one query from the user; and modifying the at least one query such that the modified (parsed) query optimizes the selecting of the at least one preferred advertisement (see para [0041]); and wherein modifying the at least one query such that the modified query optimizes the selecting of the at least one advertisement comprises: examining a knowledge associated with the user to determine the modification necessary to the query that results in an optimization (optimization operations) of the selecting of the at least one advertisement (see fig 2 and para [0045]-[0049]).

(See Next Supplemental Box)

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Preceding Supplemental Box

Box No. V --- Reasoned Statement

Citations and Explanations:

As to claims 30-31, Bharat teaches the method of claim 1 wherein examining an advertisement profile associated with a plurality of advertisements comprises: examining a location (landing page) to which at least one advertisement from the plurality of advertisements directs a user; and attributing at least one characteristic of the location (profile of an ad landing page) (see para [0014]); further comprising recommending a modification of the at least one characteristic of the location to which the at least one advertisement directs a user (It may be desirable to place an ad on a hosting site or page) such that the at least one advertisement is attractive to the user (enhanced ad targeting UPI) (see para [0084]-[0086]).

As to claims 32-33, Bharat teaches the method of claim 12 wherein examining at least one prospective advertisement within the plurality of advertisements comprises: examining a title(title line) of the at least one prospective advertisement; and examining a universal resource locator associated with the at least one prospective advertisement (see para [0054]-[0057]); and wherein examining at least one prospective advertisement within the plurality of advertisements comprises: recommending a modification of content of the at least one prospective advertisement such that the at least one prospective advertisement is attractive to the user (see para [0047] and fig 2).

As to claim 34, Bharat teaches a computerized device comprising: a memory; a processor; a communications interface; an interconnection mechanism coupling the memory, the processor and the communications interface (see fig 12 and para [0122]-[0125]); wherein the memory is encoded with an advertisement selecting application that when executed on the processor is capable of selecting advertisements on the computerized device by performing the operations of: examining a user profile based on a knowledge associated with a user; examining a content context profile associated with a type of application and an application environment; examining an advertisement profile associated with a plurality of advertisements, the plurality of advertisements including a plurality of attributes; and conditionally selecting at least one preferred advertisement from the plurality of advertisements for presentation to the user, the at least one preferred advertisement selected based on a statistical analysis of the user profile (user UPI), the advertisement profile (ad targeting UPI), and the content context profile (neighborhood UPI) (see para [0085], [0013]-[0015] and fig 2, 6, 7).

As to claim 35, Bharat teaches a computer readable medium encoded with computer programming logic that when executed on a process in a computerized device provides advertisement selection (see fig 3, 12), the medium comprising: means for examining a user profile based on a knowledge associated with a user; means for examining a content context profile associated with a type of application and an application environment; means for examining an advertisement profile associated with a plurality of advertisements (a plurality of ads), the plurality of advertisements including a plurality of attributes (UPI); and means for conditionally selecting at least one preferred advertisement from the plurality of advertisements for presentation to the user (At least one ad may be rank ordered, filtered, and/or selected from the plurality of ads using at least the determined scores), the at least one preferred advertisement selected based on a statistical analysis of the user profile (user UPI), the advertisement profile (ad targeting UPI), and the content context profile (neighborhood UPI) (see para [0013]-[0019], [0085]).

As to claim 36, Bharat teaches the method of claim 9 wherein evaluating the knowledge associated with the user comprises: evaluating the at least one user rating including at least one user rating of product (user rating) (see para [0091]).

As to claim 37, Bharat teaches the method of claim 1 wherein conditionally selecting at least one preferred advertisement from the plurality of advertisements for presentation to the user comprises: selecting at least one subset of advertisements from the plurality of advertisements (only a small subset of the ad UPI vectors remaining will need to be ranked with respect to the user and of document UPI), at least one subset of advertisements grouped as a portfolio selected to introduce variety and diversity, the at least one subset of advertisements grouped as a portfolio comprising at least one advertisements from a plurality of advertisements from a plurality of different groups that are determined by statistically analyzing (data reduction and process prioritization) the state of knowledge associated with the user profile (importance weights for multiple UPI attributes may be grouped together or aggregated in some manner), the state of knowledge associated with the content context profile and the state of knowledge associated with the advertisement profile (see para [0135], 0142]-[0144]).

Claims 1-37 have industrial applicability as defined by PCT Article 33(4) because the subject matter claimed can be made or used in industry.