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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 13/918,306	Applicant(s) HUMPHREY ET AL.	
	Examiner HICHAM SKHOUN	Art Unit 2155	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06/14/2013*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-20* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-20* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *06/14/2013* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date *06/14/2013*.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

2. **Claims 1-20** are presented for examination.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. **Claims 1-20** are rejected under 35 U.S.C. 101 because the claim(s) encompass non-statutory subject matter. Official Gazette Notice 1351 OG 212 dated February 23, 2010, states "the broadest reasonable interpretation of a claim drawn to a computer readable medium... typically covers forms of non-transitory tangible media and transitory propagating signals per se in view of the ordinary and customary meaning of computer readable media." Claims 17-34 are directed to a computer readable storage medium.

The specification ([0029]-[0031] states, “Computer-readable media can be any available media that can be accessed by computing device 100 and includes both volatile and nonvolatile media, removable and non-removable media”). The specification did not limit “Computer-readable media” to hardware embodiment, and could include non-statutory embodiments such as a signal.

Those claims are construed to cover both transitory and non-transitory media. "A transitory, propagating signal ... is not a 'process, machine, manufacture, or composition of matter.' Those four categories define the explicit scope and reach of subject matter patentable under 35 U.S.C. § 101; thus, such a signal cannot be patentable subject matter." In re Nuijten, 84 USPQ2d 1495, 1503 (Fed. Cir. 2007).

Because the full scope of the claim encompasses non-statutory subject matter (i.e., transitory propagating signals), the claim as a whole is non-statutory. The Examiner suggests adding the term "non-transitory" to claim(s) 1-20 to limit the claim scope to encompass only statutory subject matter. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

16. Claims 1-3, 6-9 are rejected under 35 U.S.C. 102(a)(2) as being anticipated by Smith-Mickelson et al (US 20140229470 A1) hereinafter as Smith.

7. Regarding claim 1, Smith teaches One or more computer-readable media storing computer-useable instructions that, when used by one or more computing devices, cause the one or more computing devices to perform a method for searching content items associated with augmented indexes, using dynamic filtering, the method comprising:

Receiving a search query, wherein the search query is associated with a sort attribute (Fig 2, step 210, [0037], the search query can comprise one or more terms (search query elements) and/or one or more ad-hoc filters (sort attribute). The ad-hoc filters can be used to filter documents based on meta-data);

Identifying a plurality of search query elements for the search query (Fig 2, step 210, [0037], the search query can comprise one or more terms (search query elements) and/or one or more ad-hoc filters (sort attribute). The ad-hoc filters can be used to filter documents based on meta-data); the plurality of search query elements includes the sort attribute having one or more attribute-range-elements each associated with an attribute-range of the sort attribute ([0025], [0028], The search queries can comprise filters to perform ad-hoc filtering of documents using indexed meta-data information associated with the documents);

Referencing an augmented index for searching the plurality of search query elements (Fig 2, step 230 & The second set of posting lists store index information for a plurality of time ranges. For example, the second set of posting lists can comprise an ordered list of document identifiers associated with each time range (e.g., each posting list can represent a different time range) , and in [0022] the index used is an inverted (augmented) index), wherein the augmented index comprises the one or more attribute-range-elements that map to one or more content items having an attribute-value in the attribute-range of the one or more attribute-range-elements ([0047] At 420, a second set of posting lists is created. The second set of posting lists stores index information for a plurality of time ranges. The index information maps documents (using their document identifiers) to the time ranges within which the documents were created).

Identifying matching content items that satisfy the search query ([0033], The computing resources 110 can execute the search queries using the first set of posting lists 130, and return documents (e.g., by document identifier) that match the search queries (e.g., documents that contain the search terms and that match the ad-hoc filters); wherein identifying the matching content items comprises:

(a) selecting matching content items in the augmented index based on the plurality of search query elements determined for the search query ([0033], The computing resources 110

can execute the search queries using the first set of posting lists 130, and return documents (e.g., by document identifier) that match the search queries (e.g., documents that contain the search terms and that match the ad-hoc filters); and

(b) Dynamically filtering the matching content items into a matched-group using the one or more attribute-range-elements mapping to the matching content items ([0044] At 330, a count of documents within each of the plurality of time ranges is determined. The count can be determined by matching document identifiers from the search results to document identifiers in the posting lists for each time range. By matching document identifiers using index information, search faceting over time ranges to generate time-series data can be performed efficiently even for very large datasets);

Providing the matching content items of the search query as search results (Abstract, index information can be created that maps document creation time to time ranges. Search queries can then be executed (e.g., comprising ad-hoc filters to filter on the meta-data), and search results can be faceted on the time ranges to produce time-series data. The time-series data can be graphed to display trends of activity (e.g., trends of events based on user activity)).

8. **Regarding claim 2**, Smith teaches the invention as claimed in claim 1 above and further teaches wherein the sort attribute is different from an index attribute of the augmented index, the sort attribute is selected from a plurality of sort attributes associated with the one or more content items ([0019] & [0022], At query time, results (e.g., search results filtered by particular meta-data) can be faceted by time ranges (e.g., hourly, daily, etc.) based on event or document creation time Using these techniques, searching (e.g., including ad-hoc filtering based on meta-data), faceting, and returning results can be performed in real-time or near-real-time (e.g., using only index information, and without having to retrieve original document information, create additional database tables, etc.)).

9. **Regarding claim 3**, Smith teaches the invention as claimed in claim 1 above and further teaches wherein the plurality of search queries elements are determined based on an implicit

association with the search query or an explicit association with the search query ([0037], the search query can comprise one or more terms (explicit association) and/or one or more ad-hoc filters).

10. **Regarding claim 6**, Smith teaches the invention as claimed in claim 1 above and further teaches wherein the augmented index is an inverted index ([0022], inverted index) comprising the one or more attribute-range-elements each represented with a posting list ([0007], [0044] At 330, a count of documents within each of the plurality of time ranges is determined. The count can be determined by matching document identifiers from the search results to document identifiers in the posting lists for each time range. By matching document identifiers using index information, search faceting over time ranges to generate time-series data can be performed efficiently even for very large datasets).

11. **Regarding claim 7**, Smith teaches the invention as claimed in claim 1 above and further teaches wherein the one or more attribute-range-elements are assigned the attribute-range based on predefined ranges derived from the attribute-value of each of the one or more content items ([0007], [0044] At 330, a count of documents within each of the plurality of time ranges is determined. The count can be determined by matching document identifiers from the search results to document identifiers in the posting lists for each time range. By matching document identifiers using index information, search faceting over time ranges to generate time-series data can be performed efficiently even for very large datasets).

12. **Regarding claim 8**, Smith teaches the invention as claimed in claim 1 above and further teaches wherein selecting matching content items in the augmented index based on the plurality of search query elements determined for the search query further comprises: identifying the plurality of search query elements that are search query terms of the search query (Fig 2, step 210, [0037], the search query can comprise one or more terms (search query elements) and/or one or more ad-hoc filters (sort attribute). The ad-hoc filters can be used to filter documents

based on meta-data) ; identifying the plurality of search query elements that are attribute-range-elements of the search query, the attribute-range-elements associated with the sort attribute ([0025], [0028], The search queries can comprise filters to perform ad-hoc filtering of documents using indexed meta-data information associated with the documents); and selecting matching content items based on an algorithm finding matching content items for both the search query terms and the attribute-range-elements (Abstract Techniques and tools are described for producing time-series data using faceted search based on document creation time. For example, index information can be created from events (e.g., by adding meta-data and indexing the events as documents). In addition, index information can be created that maps document creation time to time ranges. Search queries can then be executed (e.g., comprising ad-hoc filters to filter on the meta-data), and search results can be faceted on the time ranges to produce time-series data).

13. **Regarding claim 9**, Smith teaches the invention as claimed in claim 1 above and further teaches wherein dynamically filtering the matching content items into the matched-group using the one or more attribute-range-elements mapping to the matching content items further comprises: identifying a target count of matching content items; upon the matching content items reaching the target count, selecting an irrelevant attribute-range-element to exclude from dynamic filtering; and matching additional content items for the search query while excluding the one or more content items matching on the irrelevant attribute-range-element ([0007], [0044] At 330, a count of documents within each of the plurality of time ranges is determined. The count can be determined by matching document identifiers from the search results to document identifiers in the posting lists for each time range. By matching document identifiers using index information, search faceting over time ranges to generate time-series data can be performed efficiently even for very large datasets).

Claim Rejections - 35 USC § 103

14. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

15. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

a) A patent may not be obtained through the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claims 4, 5, 10-12 and 15-20 are rejected under 35 U.S.C.103 as being unpatentable over Smith-Mickelson et al (US 20140229470 A1) hereinafter as Smith in view of O'Neil et al (US 20020143524 A1) hereinafter as O'Neil.

17. Regarding claim 4, Smith teaches the invention as claimed in claim 1 above but did not specifically teaches the plurality of search queries elements are associated with syntax elements that reformulate the search query to support dynamic filtering.

However O'Neil teaches the plurality of search queries elements are associated with syntax elements that reformulate the search query to support dynamic filtering (Fig 1, 1A, [0031], [0032]&[[0038]-[0043], The query reformulation module receives the logical form Lex LF 108 and the filter 109 Perform filtering step to identify essential terms in query (or eliminate non-essential terms)).

It would have been obvious to one of ordinary skill in the art before the effective filling date of the claimed invention to incorporate the concept of the plurality of search queries

elements are associated with syntax elements that reformulate the search query to support dynamic filtering suggested in O'Neil's system into Smith's and by incorporating O'Neil into Smith because both system are related to providing search result to a search query would provide an improved way to acquire information using a knowledge based technique (O'Neil, [0007]).

18. **Regarding claim 5**, Smith and O'Neil teach the invention as claimed in claim 4 above and further O'Neil teaches the syntax elements provide a reformulation of the search query for at least one of the following: the sort attribute; a search attribute; and an order feature ([0061]-[0067], [0165]-[0179] search attribute & [0205]-[0212], sort attribute).

19. **Regarding claim 10**, Smith teaches A system for searching content items associated with augmented indexes, using dynamic filtering, the system comprising: a query receiving component for receiving a search query, wherein the search query is associated with a sort attribute (Fig 2, step 210, [0037], the search query can comprise one or more terms (search query elements) and/or one or more ad-hoc filters (sort attribute). The ad-hoc filters can be used to filter documents based on meta-data); a parsing component for: identifying a plurality of search query elements for the search query (Fig 2, step 210, [0037], the search query can comprise one or more terms (search query elements) and/or one or more ad-hoc filters (sort attribute). The ad-hoc filters can be used to filter documents based on meta-data), the plurality of search query elements includes the sort attribute having one or more attribute-range-elements each associated with an attribute-range of the sort attribute ([0025], [0028], The search queries can comprise filters to perform ad-hoc filtering of documents using indexed meta-data information associated with the documents); a query execution component for: referencing an augmented index for searching the plurality of search query elements (Fig 2, step 230 & The second set of posting lists store index information for a plurality of time ranges. For example, the second set of posting lists can comprise an ordered list of document identifiers associated with each time range (e.g., each posting list can represent a different time range) , and in [0022] the index used

is an inverted (augmented) index), wherein the augmented index comprises the one or more attribute-range-elements that map to one or more content items having an attribute-value in the attribute-range of the one or more attribute-range-elements ([0047] At 420, a second set of posting lists is created. The second set of posting lists stores index information for a plurality of time ranges. The index information maps documents (using their document identifiers) to the time ranges within which the documents were created); and identifying matching content items that satisfy the search query based on selecting matching content items in the in the augmented index ([0033], The computing resources 110 can execute the search queries using the first set of posting lists 130, and return documents (e.g., by document identifier) that match the search queries (e.g., documents that contain the search terms and that match the ad-hoc filters) that are dynamically filtered into a matched group based on the one or more attribute-range-elements mapping to the matching content items ([0044] At 330, a count of documents within each of the plurality of time ranges is determined. The count can be determined by matching document identifiers from the search results to document identifiers in the posting lists for each time range. By matching document identifiers using index information, search faceting over time ranges to generate time-series data can be performed efficiently even for very large datasets); and a presenting component for: providing for display the matching content items as search results (Abstract, index information can be created that maps document creation time to time ranges. Search queries can then be executed (e.g., comprising ad-hoc filters to filter on the meta-data), and search results can be faceted on the time ranges to produce time-series data. The time-series data can be graphed to display trends of activity (e.g., trends of events based on user activity)), but did not specifically teaches reformulating the search query with one or more syntax elements that support dynamic filtering.

However O'Neil teaches reformulating the search query with one or more syntax elements that support dynamic filtering (Fig 1, 1A, [0031], [0032]&[[0038]-[0043], The query reformulation module receives the logical form Lex LF 108 and the filter 109 Perform filtering step to identify essential terms in query (or eliminate non-essential terms));

It would have been obvious to one of ordinary skill in the art before the effective filling date of the claimed invention to incorporate the concept of reformulating the search query with one or more syntax elements that support dynamic filtering suggested in O'Neil's system into Smith's and by incorporating O'Neil into Smith because both system are related to providing search result to a search query would provide an improved way to acquire information using a knowledge based technique (O'Neil, [0007]).

20. **Regarding claim 11**, Smith and O'Neil teach the invention as claimed in claim 10 above and further Smith teaches wherein the query execution component further comprises an attribute range mapper configured for: mapping attribute-values of the one or more content items to the one or more attribute-range-elements ([0047] At 420, a second set of posting lists is created. The second set of posting lists stores index information for a plurality of time ranges. The index information maps documents (using their document identifiers) to the time ranges within which the documents were created) , wherein mapping the attribute-value is performed offline or online ([0018], index information can be created that maps document creation time to time ranges (offline)); and generating a unique key for further distinguishing a cluster of the content items that share attribute-values such that the content items are ordered based on the unique key ([0039] & [0052] , Fig 5 , list 520 the second set of posting lists can comprise an ordered list of document identifiers associated with each time range (e.g., each posting list can represent a different time range). Performing the search faceting 230 comprises generating a count of documents, of the matching document, for each of the plurality of time ranges represented in the second set of posting lists).

21. **Regarding claim 12**, Smith and O'Neil teach the invention as claimed in claim 10 above and further Smith teaches wherein the query execution component further comprises dynamic filter configured for: identifying a target count of matching content items; upon the matching content items reaching the target count, selecting an irrelevant attribute-range-element to exclude from dynamic filtering; and matching additional content items for the search query

while excluding the one or more content items matching on the irrelevant attribute-range-element ([0007], [0044] At 330, a count of documents within each of the plurality of time ranges is determined. The count can be determined by matching document identifiers from the search results to document identifiers in the posting lists for each time range. By matching document identifiers using index information, search faceting over time ranges to generate time-series data can be performed efficiently even for very large datasets).

22. **Regarding claim 15**, Smith and O'Neil teach the invention as claimed in claim 10 above and further Smith teaches wherein combining the matching content items from each of the plurality of index server nodes, further comprises: aligning matching content items across each of the attribute-range associated with the one or more attribute-range-elements ([0039] & [0052] , Fig 5 , list 520 the second set of posting lists can comprise an ordered list of document identifiers associated with each time range (e.g., each posting list can represent a different time range). Performing the search faceting 230 comprises generating a count of documents, of the matching document, for each of the plurality of time ranges represented in the second set of posting lists).

23. **Regarding claim 16**, Smith teaches One or more computer-readable media storing computer-useable instructions that, when used by one or more computing devices, cause the one or more computing devices to perform a method for searching content items associated with augmented indexes, using dynamic filtering, the method comprising: receiving a search query, wherein the search query is associated with a sort attribute (Fig 2, step 210, [0037], the search query can comprise one or more terms (search query elements) and/or one or more ad-hoc filters (sort attribute). The ad-hoc filters can be used to filter documents based on meta-data);, the sort attribute is different from an index attribute ([0019] & [0022], At query time, results (e.g., search results filtered by particular meta-data) can be faceted by time ranges (e.g., hourly, daily, etc.) based on event or document creation time Using these techniques, searching (e.g., including ad-hoc filtering based on meta-data), faceting, and returning results can be

performed in real-time or near-real-time (e.g., using only index information, and without having to retrieve original document information, create additional database tables, etc.)); identifying a plurality of search query elements for the search query (Fig 2, step 210, [0037], the search query can comprise one or more terms (search query elements) and/or one or more ad-hoc filters (sort attribute). The ad-hoc filters can be used to filter documents based on meta-data), the plurality of search query elements includes the sort attribute having one or more attribute-range-elements each associated with an attribute-range of the sort attribute and an ordering element for ordering matching content items of the search query ([0025], [0028], The search queries can comprise filters to perform ad-hoc filtering of documents using indexed meta-data information associated with the documents); referencing an augmented index for searching the plurality of search query elements (Fig 2, step 230 & The second set of posting lists store index information for a plurality of time ranges. For example, the second set of posting lists can comprise an ordered list of document identifiers associated with each time range (e.g., each posting list can represent a different time range) , and in [0022] the index used is an inverted (augmented) index) wherein the augmented index comprises the one or more attribute-range-elements that map to one or more content items having an attribute-value in the attribute-range of the one or more attribute-range-elements ([0047] At 420, a second set of posting lists is created. The second set of posting lists stores index information for a plurality of time ranges. The index information maps documents (using their document identifiers) to the time ranges within which the documents were created); identifying matching content items that satisfy the search query ([0033], The computing resources 110 can execute the search queries using the first set of posting lists 130, and return documents (e.g., by document identifier) that match the search queries (e.g., documents that contain the search terms and that match the ad-hoc filters), wherein identifying the matching content items comprises: (a) selecting matching content items in the augmented index based on the plurality of search query elements determined for the search query ([0033], The computing resources 110 can execute the search queries using the first set of posting lists 130, and return documents (e.g., by document identifier) that match the search queries (e.g., documents that contain the search terms and that

match the ad-hoc filters); and (b) dynamically filtering the matching content items into a matched-group using the one or more attribute-range-elements mapping to the matching content items ([0044] At 330, a count of documents within each of the plurality of time ranges is determined. The count can be determined by matching document identifiers from the search results to document identifiers in the posting lists for each time range. By matching document identifiers using index information, search faceting over time ranges to generate time-series data can be performed efficiently even for very large datasets); and providing a target count of matching content items from the matched-group as search results for the search query, wherein the matching content items of the target count are sorted based on the sort attribute and ordered based on the ordering element (Abstract, index information can be created that maps document creation time to time ranges. Search queries can then be executed (e.g., comprising ad-hoc filters to filter on the meta-data), and search results can be faceted on the time ranges to produce time-series data. The time-series data can be graphed to display trends of activity (e.g., trends of events based on user activity)), but did not specifically teaches reformulating the search query to include one or more syntax elements that support dynamic filtering.

However O'Neil teaches reformulating the search query to include one or more syntax elements that support dynamic filtering (Fig 1, 1A, [0031], [0032]&[[0038]-[0043], The query reformulation module receives the logical form Lex LF 108 and the filter 109 Perform filtering step to identify essential terms in query (or eliminate non-essential terms)).

It would have been obvious to one of ordinary skill in the art before the effective filling date of the claimed invention to incorporate the concept of the reformulating the search query to include one or more syntax elements that support dynamic filtering suggested in O'Neil's system into Smith's and by incorporating O'Neil into Smith because both system are related to providing search result to a search query would provide an improved way to acquire information using a knowledge based technique (O'Neil, [0007]).

24. **Regarding claim 17**, Smith and O'Neil teach the invention as claimed in claim 16 above and further Smith teaches wherein each of the one or more attribute-range-elements is

associated with the attribute-range based on predefined ranges derived from the attribute-value of the one or more content items ([0047] At 420, a second set of posting lists is created. The second set of posting lists stores index information for a plurality of time ranges. The index information maps documents (using their document identifiers) to the time ranges within which the documents were created).

25. **Regarding claim 18**, Smith and O'Neil teach the invention as claimed in claim 16 above and further Smith teaches wherein assigning predefined ranges to the matching content items comprises tagging the matching content items with an identifier of each of the predefined ranges ([0039] & [0052] , Fig 5 , list 520 the second set of posting lists can comprise an ordered list of document identifiers associated with each time range (e.g., each posting list can represent a different time range). Performing the search faceting 230 comprises generating a count of documents, of the matching document, for each of the plurality of time ranges represented in the second set of posting lists).

26. **Regarding claim 19**, Smith and O'Neil teach the invention as claimed in claim 16 above and further Smith teaches wherein selecting matching content items in the augmented index based on the plurality of search query elements determined for the search query further comprises: identifying the plurality of search query elements that are search query terms of the search query (Fig 2, step 210, [0037], the search query can comprise one or more terms (search query elements) and/or one or more ad-hoc filters (sort attribute). The ad-hoc filters can be used to filter documents based on meta-data) ; identifying the plurality of search query elements that are attribute-range-elements of the search query, the attribute-range-elements associated with the sort attribute ([0025], [0028], The search queries can comprise filters to perform ad-hoc filtering of documents using indexed meta-data information associated with the documents); and selecting matching content items based on an algorithm finding matching content items for both the search query terms and the attribute-range-elements (Abstract Techniques and tools are described for producing time-series data using faceted search based on document creation

time. For example, index information can be created from events (e.g., by adding meta-data and indexing the events as documents). In addition, index information can be created that maps document creation time to time ranges. Search queries can then be executed (e.g., comprising ad-hoc filters to filter on the meta-data), and search results can be faceted on the time ranges to produce time-series data).

27. **Regarding claim 20**, Smith and O'Neil teach the invention as claimed in claim 16 above and further Smith teaches wherein dynamically filtering the matching content items into the matched-group using the one or more attribute-range-elements mapping to the matching content items further comprises: identifying a target count of matching content items; upon the matching content items reaching the target count, selecting an irrelevant attribute-range-element to exclude from dynamic filtering; and matching additional content items for the search query while excluding the one or more content items matching on the irrelevant attribute-range-element ([0007], [0044] At 330, a count of documents within each of the plurality of time ranges is determined. The count can be determined by matching document identifiers from the search results to document identifiers in the posting lists for each time range. By matching document identifiers using index information, search faceting over time ranges to generate time-series data can be performed efficiently even for very large datasets).

28. Claims 13 and 14 are rejected under 35 U.S.C.103 as being unpatentable over Smith-Mickelson et al (US 20140229470 A1) hereinafter as Smith in view of O'Neil et al (US 20020143524 A1) hereinafter as O'Neil as claimed in claim 10 above and further in view of Xiao et al (US 8843507 B2) hereinafter as Xiao.

29. **Regarding claim 13**, Smith and O'Neil teach the invention as claimed in claim 10 above, but did not specifically teaches a plurality of index server nodes, each having at least the query receiving component, the parsing component, the data store, the query execution component, and the presenting component, wherein each of the plurality index server node is configured

for: receiving the search query; wherein the search query is distributed to each of the plurality of index server nodes; processing the search query based a portion of the augmented index associated with each of the plurality of index server nodes and communicating the matching content items from each of the plurality of index server nodes for additional processing.

However Xiao teaches a plurality of index server nodes, each having at least the query receiving component, the parsing component, the data store, the query execution component, and the presenting component, wherein each of the plurality index server node is configured for: receiving the search query (col 4, line 17-63, Fig 3, receive search query); wherein the search query is distributed to each of the plurality of index server nodes (col 4, line 17-63, Fig 3, step 330 & 340); processing the search query based a portion of the augmented index associated with each of the plurality of index server nodes (col 4, line 17-63, Fig 3, step 330 & 340); and communicating the matching content items from each of the plurality of index server nodes for additional processing (col 4, line 17-63, Fig 3, step 350).

It would have been obvious to one of ordinary skill in the art before the effective filling date of the claimed invention to incorporate the concept of a plurality of index server nodes, each having at least the query receiving component, the parsing component, the data store, the query execution component, and the presenting component, wherein each of the plurality index server node is configured for: receiving the search query; wherein the search query is distributed to each of the plurality of index server nodes; processing the search query based a portion of the augmented index associated with each of the plurality of index server nodes and communicating the matching content items from each of the plurality of index server nodes for additional processing suggested in Xiao system into Smith-O'Neil combined system and by incorporating Xiao into Smith-O'Neil combined system because all system are related to providing search result to a search query Would simplify to a user to perform a keyword search, and provide the lists of responsive documents in a few seconds or less (Xiao, col 1, line 5-15).

30. **Regarding claim 14**, Smith, O'Neil and Xiao teach the invention as claimed in claim 13 above and further Xiao teaches an aggregation component configured for: distributing the search query to each of the plurality of index server nodes (col 4, line 17-63, Fig 3, step 330 & 340); receiving the matching content items from each of the plurality of index server nodes (col 4, line 17-63, Fig 3, step 350); and combining the matching content items from each of the plurality of index server nodes (col 4, line 17-63, Fig 3, step 360).

Conclusion

31. The prior art made of record and not relied upon is considered pertinent to applicant s disclosure.

- Statchuk (US 20070055680 A1) discloses a method and system for creating taxonomy from business-oriented metadata content.
- Rennison (US 8024329 B1) discloses using inverted indexes for contextual personalized information retrieval.
- Sun et al (US 8244701 B2) discloses using behavior data to quickly improve search ranking.
- Narula et al (US 20110179016 A1) discloses a Collection of Performance Information for Search Queries Executed in a Tiered Architecture.
- Gross et al (US 8498977 B2) discloses a methods and systems for search indexing.
- SATHE et al (US 20110022600 A1) discloses a method of data retrieval from a data repository in response to a query having either list of keywords and/or list of attribute-value pairs.
- Elzinga (US 8583655 B2) discloses using an inverted index to produce an answer to a query.
- Marchisio et al (US 7526425 B2) discloses a method and system for extending keyword searching to syntactically and semantically annotated data.
- paramsearch, Title "Inverted Index Support for Numeric Search ",Authors (Marcus Fontouraa, Ronny Lempelb, Runping Qic & Jason Ziend), Published online: 30 Jan 2011, page 1-22.

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HICHAM SKHOUN whose telephone number is (571)272-9466. The examiner can normally be reached on Monday to Thursday Flexible.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, PERVEEN REHANA can be reached on 5712723676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3676.

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