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UNITED STATES PATENT AND TRADEMARK OFFICE
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BEFORE THE PATENT TRIAL AND APPEAL BOARD
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Ex parte ROBERT WILLIAM CARTHCART,
JONATHAN A. COENS,
MARK MCDUFF,
and JACQUELINE CERRETANI FRANK
_____

Appeal 2018-007128
Application 13/372,054
Technology Center 3600
_____

Before ANTON W. FETTING, CYNTHIA L. MURPHY, and
KENNETH G. SCHOPFER, *Administrative Patent Judges*.

FETTING, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE[1]

Robert William Carthcart, Jonathan A. Coens, Mark McDuff, and Jacqueline Cerretani Frank (Appellant[2]) seek review under 35 U.S.C. § 134 of a final rejection of claims 1, 3, 4, and 7–29, the only claims pending in the application on appeal. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

The Appellant invented a way of suggesting relationship modifications to users of a social networking system. Specification para. 1.

An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below (bracketed matter and some paragraphing added).

1. A method comprising:

[1] receiving,

> from a viewing user of an online social networking system,

> a request for users for relationship modification in the online social networking system,

> the users connected to the viewing user in the online social networking system;

[2] determining a plurality of users of the online social networking system connected to the viewing user in the online social networking system;

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[3] ranking, by a processor, the determined plurality of users;

[4] selecting one or more of the ranked plurality of users as candidate users for relationship modification responsive to the received request

> based on one or more predetermined thresholds,

> each predetermined threshold corresponding to a different type of relationship modification;

[5] generating a user interface

> for the viewing user

> for selecting relationship modifications

>> to relationships between the viewing user and the users connected to the viewing user in the online social networking system;

[6] providing,

>> by the processor,

>> to the viewing user

> the user interface,

> the user interface comprising

>> a selection of one or more candidate users as suggested candidates for relationship modification

>> and

>> a list of options for the different types of relationship modification,

>>> the list of options comprising removing the candidate user as a connection to the viewing user in the online social networking system;

and

[7] in response to receiving selection of a relationship modification type from the list of options for a selected of the suggested candidates for relationship modification displayed in the user interface,

applying the selected relationship modification to a relationship between the selected candidate and the viewing user.

The Examiner relies upon the following prior art:

Name	Reference	Date
Dom	US 2004/0122803 A1	June 24, 2004
Lu	US 2007/0106659 A1	May 10, 2007
Puthenkulam	US 2009/0013386 A1	Jan. 8, 2009
Grandison	US 2010/0257577 A1	Oct. 7, 2010

Amy-Mae Elliott, How to Spring Clean Your Twitter Account, Mashable (2010) (accessed July 12, 2016) https://web.archive.org/web/20110112175159/http://mashable.com/2010/04/26/twitter-organize/ ("Mashable").

Claims 1, 3, 4, and 7–29 stand rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more.

Claims 1, 4, and 8 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Mashable and Puthenkulam.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Mashable, Puthenkulam, and Official Notice.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Mashable, Puthenkulam, and Grandison.

Claims 9–12, 14–17, 25–27, and 29 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Mashable, Dom, and Lu.

Claims 13 and 18–21 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Mashable, Dom, Lu, and Official Notice.

Claims 22–24 and 28 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Mashable, Dom, Lu, and Puthenkulam.

ISSUES

The issues of eligible subject matter turn primarily on whether the claims recite more than abstract conceptual advice of results desired.

The issues of obviousness turn primarily on whether the art describes the limitations or the limitations are otherwise predictable to one of ordinary skill.

FACTS PERTINENT TO THE ISSUES

The following enumerated Findings of Fact (FF) are believed to be supported by a preponderance of the evidence.

Facts Related to Appellant's Disclosure

01.   The social networking system may provide a user interface in which a viewing user may be provided with suggested relationship modifications for connected users. Spec. para. 14.

02.   The relationship presentation module 118 may include a user interface to be provided for display on the viewing user device 102 in which the user may select one or more suggestions to modify the relationship between the suggestions and the viewing user. Spec. para. 19.

03.   The relationship modification module 116 may apply these changes received from the viewing user device 102 through the user interface provided by the relationship presentation module 118 by modifying edge objects 110 associated with the viewing user and selected connected users according to the changes received. Spec. para. 20.

04.   The relationship presentation module 118 may include a user interface to be provided for display on the viewing user device

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102 in which the user may select one or more suggestions to modify the relationship between the suggestions and the viewing user. Spec. para. 19.

05.　A relationship presentation module 118 provides a user interface for users of the social networking system 100 to select relationship modifications for a listing of candidate users. Spec. para. 30.

06.　The one or more candidate users are provided 410 in a user interface on a web browser operating on a user device associated with the viewing user. In the user interface provided 410 to the viewing user, the viewing user may indicate that his or her relationship with the provided candidate users should be modified. Spec. para. 52.

07.　The relationship modification module 116 may apply these changes received from the viewing user device 102 through the user interface provided by the relationship presentation module 118 by modifying edge objects 110 associated with the viewing user and selected connected users according to the changes received. Spec. para. 20.

08.　Edge objects 110 store information about users' connections to other nodes on a social networking system 100. Spec. para. 17.

09.　Nodes include users and objects of the social networking system, such as web pages embodying concepts and entities, and edges connect the nodes. Edges represent a particular interaction between two nodes. Spec. para. 12.

10. Users join the social networking system and add connections to a number of other users to whom they desire to be connected. Spec. para. 11.

Facts Related to the Prior Art

Mashable

11. Mashable is directed to tips to organize and declutter a Twitter social media account. Mashable 1.

12. Mashable describes UnTweeps as one really simple free service that helps identify inactive users you're currently following. It will show you who hasn't tweeted of late, and give you the option to unfollow them. You can choose to see who's not sent a tweet over certain time periods. 90 days seems a reasonable span to consider an account abandoned (although Twitter's official guidelines give you 6 month's grace). You can also view 60 or 30 day options if you plan to be more aggressive in cleaning your follow list. Mashable 1.

Puthenkulam

13. Puthenkulam is directed to network connection management. Puthenkulam para. 2.

14. Puthenkulam describes an automatic networking response mechanism that intercepts the networking request and generates a response automatically based on a dynamic social network model. The response may comprise one or more data transmissions, in response to the networking request with one or more data transmissions. A dynamic social network model may describe the user's social circle based on the communication

information collected while the user interacts with various
contacts. For example, if a user has frequent email exchanges
with a particular contact, the high frequency of the interaction
may be recorded and used to infer that the user is close to the
contact. When such characterization for each contact is
available, it may be used to determine whether to accept a
particular networking request from a contact. For instance, the
closer the user is to a contact, the more likely a networking
request from the contact is to be accepted. Puthenkulam para.
21.

15. Puthenkulam describes how each dynamic social network
model built with respect to a single user (or generically a single
entity, representing either a user of a group of users)
characterizes the networking pattern of the user. A dynamic
social network model may contain a list of contacts, each of
which may be individually modeled. For example, each contact
may be classified into some category (i.e., family friend, co-
worker) and the relationship between the user and the contact
may be rated (e.g., close friend, or casual encounter).
Puthenkulam para. 29.

16. Puthenkulam describes the relationship between the user and
a contact as being characterized in terms of how close the
relationship is. For example, a contact that communicates with
the user on a daily basis may have a closer relationship to the
user than a contact that connects with the user every several
months. Based on this criterion and the recorded

communication frequency, the relationship description generator
440 may rank the relationship between the user and each
contact. Puthenkulam para. 49.

Dom

17. Dom is directed to use of databases to detect and qualify
relationships between people and find the best path through the
resulting social network. Dom para. 2.

18. Dom describes social network analysis of looking at how
people interact. By being able to understand the interaction
patterns between data stored in databases, it becomes possible to
more quickly find who might be able to answer questions,
understand the impact of organizational change initiatives, and
find who serves as bridges between different parts of an
organization. Dom para. 6.

19. Dom describes a social network dynamically built based on
the interactions of individuals extracted from the records of their
daily lives. These records primarily include data sources
commonly found in and/or associated with Personal Information
Management (PIM) systems, as well as phone logs, and
proximity reports. These PIM data sources include a calendar, a
to-do list, a journal, an address book, and e-mail. They are
valuable sources of information because people use them to
record their activities, tasks, and impressions, to organize their
contacts, and to correspond. Interactions based on these
activities and correspondence can be identified. Phone logs
provide the phone number of the caller and the caller, and thus

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reveal possible interactions between the individuals associated
with these phone numbers. For individuals who are tracked and
choose to be tracked, the proximity records contain the
encounters of those individuals detected to be within close
proximity of each other. Dom para. 7.

20. Dom describes how it extracts the raw data from these daily-
life sources to detect interactions among people (e.g., how often
they meet, the last time they exchanged correspondence). It then
makes inferences to detect as well as to qualify relationships
between them. A relationship is qualified by assigning a value
to it, based on the following attributes that this invention defines
for a relationship; longevity (how long have they been
connected); currency (have they connected recently); frequency
(how often do they connect); exclusivity (how exclusive is the
connection (e.g., one-to-one vs. one-to-many, secure content));
complexity (is the connection on many levels and on specific
contexts); and reciprocity (is the connection mutual or just one-
way). Dom para. 9.

21. Dom builds a social network from these discovered
relationships. Dom calculates the shortest and best paths
through the social network, given the quality of the
relationships. An application of this system is to detect people
in common, i.e, finding intermediary people to mediate a
connection to an expert. Discovering the best path through the
people in common allows good connections/relationships. Note
that the best path between two people can actually be longer

than the shortest path if the quality of the direct relationships comprising the path is superior. Dom para. 10.

22.   Dom calculates a relationship value for all relationship attributes. The end of the loop for each relationship and person is shown as items. These relationship attributes can also be weighted to indicate greater importance, etc. Therefore, the total relationship value is the sum of these weighted values. Dom para. 58.

23.   Dom uses overall attribute information of all the relationships of a given user to create a user's social network map represented as a graph. The graph can be used to make useful inferences such as the shortest path or the best path from the user to a particular person in their social network map. The user's social network is that subgraph of the organization's social network that contains all nodes and edges that are on any path that includes the user's node. Furthermore, the best path could be classified as a specific type of path. The resulting social network graph could have directed or undirected edges. If external data, for instance organizational chart data, is available, then directed edges can be constructed that follow hierarchical constraints. Dom para. 59.

Lu

24.   Lu is directed to searching the Internet in a way that applies feedback from people who use the search application to improve the quality of search results. Lu para. 2.

25.   Lu describes predicting the relevance of documents to a
search query, thereby returning more relevant results to a user
performing the search. In a preferred embodiment, a method in
accordance with the present invention uses a formula to predict
the relevance of multiple documents to a search query, ranks the
documents based on the relevance of each, and returns the
ranked list to a user in response to a search query. Preferably,
user inputs are used to tune the parameters of the formula to
increase the likelihood that the returned documents are relevant
to the search query. Lu para. 9.

Grandison

26.   Grandison is directed to managing privacy settings for a
social network. Grandison para. 5.

27.   Grandison determines privacy indices related to a triggering
event. Privacy indices are normalized from a summation of
privacy scores of a user or target. In embodiments, a high
privacy index is indicative of a more secure privacy setting.
Likewise, in embodiments, a low privacy index is indicative of a
weaker privacy setting. Grandison calculates recommended
privacy settings. Recommended privacy settings are based on
privacy indices that are determined in a previous step. In
embodiments, a more secure privacy setting is calculated from a
high privacy index. Likewise, in embodiments, a weaker
privacy setting is calculated from a low privacy index.
Grandison para. 25.

28.   Grandison describes how a user may change current privacy

settings. Grandison para. 27.

ANALYSIS

We initially construe the limitations "generating a user interface" and
"providing . . . the user interface." These are not lexicographically defined.
Appellant cites Specification paragraphs 5, 14, 19, 20, 30, and 52 for the full
limitations these phrases appear in. App. Br. 2–3. Paragraph 5 does not
describe an interface. Uncited paragraph 22 also describes providing the
interface. All descriptions of generating and providing the interface describe
the system as doing so generically, without any description of how the
interface is generated or provided. There is no description of any unusual
structural or technological features of the interface. The interface is instead
described in terms of the content it accepts and displays. Thus we construe
generating and providing the recited interface as conventional generation
and display of an interface screen for data entry.

We next construe "connection." This is not lexicographically defined.
The Specification states that "users join the social networking system and
add connections to a number of other users to whom they desire to be
connected." FF 10. By its nature as representing some relations between
users, a connection represents all the users so represented, even if only one
user requested the connection. We construe a connection as data
representing some relationship between users. Nothing in the claims or
Specification limits this representation to a two-way representation.

We next construe "applying the selected relationship modification to a
relationship." There is no lexicographic definition for this. The
Specification describes that this may be done by modifying edge objects,

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and edge objects store information about connections. Edges connect nodes, which are entities and concepts. FF 07–09. As edges and nodes are conceptual entities of a graph, also a conceptual entity, an edge object is no more than data identifying a relationship. Thus we construe "applying the selected relationship modification to a relationship" as storing data representing a modification to data representing a relationship.

Claims 1, 3, 4, and 7–29 rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more

STEP 1[3]

Claim 1, as a method claim, nominally recites one of the enumerated categories of eligible subject matter in 35 U.S.C. § 101. The issue before us is whether it is directed to a judicial exception without significantly more.

STEP 2

The Supreme Court

set forth a framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts. First, . . . determine whether the claims at issue are directed to one of those patent-ineligible concepts. If so, we then ask, "[w]hat else is there in the claims before us? To answer that question, . . . consider the elements of each claim both individually and "as an ordered combination" to determine whether the additional elements "transform the nature of the claim" into a patent-eligible application. [The Court] described step two of this analysis as a search for an "'inventive concept'"—i.e., an element or combination of elements that is "sufficient to ensure

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[3] For continuity of analysis, we adopt the steps nomenclature from 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) ("Revised Guidance").

> that the patent in practice amounts to significantly more than a
> patent upon the [ineligible concept] itself."

Alice Corp. v CLS Bank Int'l, 573 U.S. 208, 217–18 (2014) (citations omitted) (*citing Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012)). To perform this test, we must first determine what the claims are directed to. This begins by determining whether the claims recite one of the judicial exceptions (a law of nature, a natural phenomenon, or an abstract idea). Then, if claims recite a judicial exception, determining whether the claims at issue are directed to the recited judicial exception, or whether the recited judicial exception is integrated into a practical application of that exception, i.e., that the claims "apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception." Revised Guidance, 84 Fed. Reg. at 54. If the claims are directed to a judicial exception, then finally determining whether the claims provide an inventive concept because the additional elements recited in the claims provide significantly more than the recited judicial exception.

STEP 2A Prong 1

At a high level, and for our preliminary analysis, we note that method claim 1 recites receiving a request, determining, ranking and selecting users, generating and providing an interface for data entry, and applying a modification to a relationship. Determining, ranking and selecting are rudimentary forms of data analysis. As we construe *supra*, generating and providing an interface is conventional display of an interface, which is a combination of rudimentary analysis and display. As we construe *supra*, applying a modification to a relationship is storing data representing a

modification to data representing a relationship. Thus, claim 1 recites receiving, analyzing, displaying, and storing data. None of the limitations recites technological implementation details for any of these steps, but instead recites only results desired by any and all possible means.

From this we see that claim 1 does not recite the judicial exceptions of either natural phenomena or laws of nature.

Under Supreme Court precedent, claims directed purely to an abstract idea are patent-ineligible. As set forth in the Revised Guidance, which extracts and synthesizes key concepts identified by the courts, abstract ideas include (1) mathematical concepts[4], (2) certain methods of organizing human activity[5], and (3) mental processes[6]. Among those certain methods of organizing human activity listed in the Revised Guidance are managing personal behavior or relationships or interactions between people. Like those concepts, claim 1 recites the concept of managing relationships between users. Specifically, claim 1 recites operations that would ordinarily take place in advising one to modify user relationship data for users and options selected from candidates ranked and compared to a threshold. The

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[4] *See, e.g.*, *Gottschalk v. Benson*, 409 U.S. 63, 71–72 (1972); *Bilski v. Kappos*, 561 U.S. 593, 611 (2010); *Mackay Radio & Tel. Co. v. Radio Corp. of Am.*, 306 U.S. 86, 94 (1939); *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1163 (Fed. Cir. 2018).

[5] *See, e.g.*, *Bilski*, 561 U.S. at 628; *Alice*, 573 U.S. at 219–20; *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed Cir. 2014); *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1383 (Fed. Cir. 2017); *In re Marco Guldenaar Holding B.V.*, 911 F.3d 1157, 1160–61 (Fed. Cir. 2018).

[6] *See, e.g.*, *Benson*, 409 U.S. at 67; *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371–72 (Fed. Cir. 2011); *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318 (Fed. Cir. 2016).

advice to modify user relationship data for users and options selected from candidates ranked and compared to a threshold involves modifying relationships, which is a social act, and selecting those for users to modify, which is an act ordinarily performed in the stream of modifying behavior between individuals. For example, claim 1 recites "applying the selected relationship modification to a relationship between the selected candidate and the viewing user," which is an activity that would take place whenever one is modifying a relationship between individuals in social networking. Similarly, claim 1 recites "receiving selection of a relationship modification type from the list of options for a selected of the suggested candidates," which is also characteristic of managing relationships between individuals.

The Examiner determines the claims to be directed to determining users connected to a viewing user and selecting one or more of the ranked plurality of users as the requested candidate users for relationship modification based on one or more predetermined thresholds, each predetermined threshold corresponding to a different type of relationship modification. Final Act. 2.

The preamble to claim 1 does not recite what it is to achieve, but the steps in claim 1 result in applying a relationship modification to a relationship absent any technological mechanism other than a conventional computer for doing so.

As to the specific limitations, limitation 1 recites data reception. Limitations 2–4 and 7 recite conventional analyzing and storing of user and relationship data, which advise one to apply generic functions to get to these results. Limitations 5 and 6 recite conventional interface display. The limitations thus recite advice for modifying user relationship data for users

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and options selected from candidates ranked and compared to a threshold. To advocate modifying user relationship data for users and options selected from candidates ranked and compared to a threshold is conceptual advice for results desired and not technological operations.

The Specification at paragraph 1 describes the invention as relating to suggesting relationship modifications to users of a social networking system. Thus, all this intrinsic evidence shows that claim 1 recites managing relationships between users. This is consistent with the Examiner's determination.

This in turn is an example of managing personal behavior or relationships or interactions between people as a certain method of organizing human activity because managing relationships between users is one of the enumerated examples of organizing human activity. The concept of managing relationships between users by modifying user relationship data for users and options selected from candidates ranked and compared to a threshold is one idea for how to articulate the process. The steps recited in claim 1 are part of how this might conceptually be premised.

Our reviewing court has found claims to be directed to abstract ideas when they recited similar subject matter. *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1338 (Fed. Cir. 2018) (Managing control over content usage).

From this we conclude that at least to this degree, claim 1 recites managing relationships between users by modifying user relationship data for users and options selected from candidates ranked and compared to a threshold, which is managing personal behavior or relationships or

interactions between people, one of certain methods of organizing human activity identified in the Revised Guidance, and, thus, an abstract idea.

STEP 2A Prong 2

The next issue is whether claim 1 not only recites, but is more precisely directed to this concept itself or whether it is instead directed to some technological implementation or application of, or improvement to, this concept, i.e., integrated into a practical application.[7]

> At the same time, we tread carefully in construing this exclusionary principle lest it swallow all of patent law. At some level, "all inventions ... embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept. "[A]pplication[s]" of such concepts " 'to a new and useful end,' " we have said, remain eligible for patent protection.

> Accordingly, in applying the § 101 exception, we must distinguish between patents that claim the " 'buildin[g] block[s]' " of human ingenuity and those that integrate the building blocks into something more.

Alice, 573 U.S. at 217 (citations omitted, alterations in original).

Taking the claim elements separately, the operation performed by the computer at each step of the process is expressed purely in terms of results, devoid of implementation details. Step 1 is a pure data gathering step. Limitations describing the nature of the data do not alter this. Steps 2–4 and 7 are generic, conventional activity, such as storing, transmitting, or displaying the results. Steps 5 and 6 recite generic computer processing expressed in terms of results desired by any and all possible means and so present no more than conceptual advice. All purported inventive aspects

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[7] *See, e.g.*, *Alice*, 573 U.S. at 223, discussing *Diamond v. Diehr*, 450 U.S. 175 (1981).

reside in how the data is interpreted and the results desired, and not in how the process physically enforces such a data interpretation or in how the processing technologically achieves those results.

Viewed as a whole, Appellant's claim 1 simply recites the concept of managing relationships between users by modifying user relationship data for users and options selected from candidates ranked and compared to a threshold as performed by a generic computer. This is no more than conceptual advice on the parameters for this concept and the generic computer processes necessary to process those parameters, and do not recite any particular implementation.

Claim 1 does not, for example, purport to improve the functioning of the computer itself. Nor does it affect an improvement in any other technology or technical field. The 27 pages of Specification spell out different generic equipment[8] and parameters that might be applied using this concept and the particular steps such conventional processing would entail based on the concept of managing relationships between users by modifying user relationship data for users and options selected from candidates ranked and compared to a threshold under different scenarios. They do not describe any particular improvement in the manner a computer functions. Instead, claim 1 at issue amounts to nothing significantly more than an instruction to apply managing relationships between users by modifying user relationship data for users and options selected from candidates ranked and compared to a threshold using some unspecified, generic computer. Under our

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[8] The Specification describes a conventional computer system executing, for example, a Microsoft Windows compatible operating system (OS), Apple OS X, and/or a Linux distribution. Spec. para. 22.

precedents, that is not enough to transform an abstract idea into a patent-eligible invention. *See Alice*, 573 U.S. at 225–26.

None of the limitations reflects an improvement in the functioning of a computer, or an improvement to other technology or technical field, applies or uses a judicial exception to effect a particular treatment or prophylaxis for a disease or medical condition, implements a judicial exception with, or uses a judicial exception in conjunction with, a particular machine or manufacture that is integral to the claim, effects a transformation or reduction of a particular article to a different state or thing, or applies or uses the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception.

We conclude that claim 1 is directed to achieving the result of managing relationships between users by advising one to modify user relationship data for users and options selected from candidates ranked and compared to a threshold, as distinguished from a technological improvement for achieving or applying that result. This amounts to managing personal behavior or relationships or interactions between people, which fall within certain methods of organizing human activity that constitute abstract ideas. The claim does not integrate the judicial exception into a practical application.

STEP 2B

The next issue is whether claim 1 provides an inventive concept because the additional elements recited in the claim provide significantly more than the recited judicial exception.

The introduction of a computer into the claims does not generally alter the analysis at *Mayo* step two.

> [T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention. Stating an abstract idea "while adding the words 'apply it'" is not enough for patent eligibility. Nor is limiting the use of an abstract idea "'to a particular technological environment.'" Stating an abstract idea while adding the words "apply it with a computer" simply combines those two steps, with the same deficient result. Thus, if a patent's recitation of a computer amounts to a mere instruction to "implemen[t]" an abstract idea "on ... a computer," that addition cannot impart patent eligibility. This conclusion accords with the preemption concern that undergirds our § 101 jurisprudence. Given the ubiquity of computers, wholly generic computer implementation is not generally the sort of "additional featur[e]" that provides any "practical assurance that the process is more than a drafting effort designed to monopolize the [abstract idea] itself."

Alice, 573 U.S. at 223–24 (citations omitted, alterations in original).

"[T]he relevant question is whether the claims here do more than simply instruct the practitioner to implement the abstract idea . . . on a generic computer." *Alice*, 573 U.S. at 225. They do not.

Taking the claim elements separately, the function performed by the computer at each step of the process is purely conventional. Using a computer for receiving, analyzing, displaying, and storing data amounts to electronic data query and retrieval—one of the most basic functions of a computer. All of these computer functions are generic, routine, conventional computer activities that are performed only for their conventional uses. *See Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). S*ee also In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011) ("Absent a possible narrower construction

of the terms 'processing,' 'receiving,' and 'storing,' . . . those functions can be achieved by any general purpose computer without special programming"). None of these activities is used in some unconventional manner nor do any produce some unexpected result. Appellant does not contend they invented any of these activities. In short, each step does no more than require a generic computer to perform generic computer functions. As to the data operated upon, "even if a process of collecting and analyzing information is 'limited to particular content' or a particular 'source,' that limitation does not make the collection and analysis other than abstract." *SAP Am., Inc.*, 898 F.3d at 1168.

Considered as an ordered combination, the computer components of Appellant's claim 1 add nothing that is not already present when the steps are considered separately. The sequence of data reception-analysis-display-storage is equally generic and conventional. *See Ultramercial, Inc.*, 772 F.3d at 715 (sequence of receiving, selecting, offering for exchange, display, allowing access, and receiving payment recited an abstraction), *Inventor Holdings, LLC v. Bed Bath & Beyond, Inc.*, 876 F.3d 1372, 1378 (Fed. Cir. 2017) (sequence of data retrieval, analysis, modification, generation, display, and transmission), *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1339 (Fed. Cir. 2017) (sequence of processing, routing, controlling, and monitoring). The ordering of the steps is therefore ordinary and conventional.

We conclude that claim 1 does not provide an inventive concept because the additional elements recited in the claim do not provide significantly more than the recited judicial exception.

REMAINING CLAIMS

Claim 1 is representative. The other independent method claims 9, 25, and 27 are substantially similar at least as regards this analysis. The remaining method claims merely describe process parameters. We conclude that the method claims at issue are directed to a patent-ineligible concept itself, and not to the practical application of that concept.

There are no structural claims. As a corollary, the claims are not directed to any particular machine.

LEGAL CONCLUSION

From these determinations we further determine that the claims do not recite an improvement to the functioning of the computer itself or to any other technology or technical field, a particular machine, a particular transformation, or other meaningful limitations. From this we conclude the claims are directed to the judicial exception of the abstract idea of certain methods of organizing human activity as exemplified by the managing personal behavior or relationships or interactions between people of managing relationships between users by modifying user relationship data for users and options selected from candidates ranked and compared to a threshold, without significantly more.

APPELLANT'S ARGUMENTS

As to Appellant's Appeal Brief arguments, we adopt the Examiner's determinations and analysis from Final Action 2–5 and Answer 4–6 and reach similar legal conclusions. We now turn to the Reply Brief.

We are not persuaded by Appellant's argument that "the examiner's analysis impermissibly omits consideration of much of the claim language that provides context to the claimed elements." Reply Br. 5. The Examiner

analyzed the operations performed as we do *supra*. Again, data content and source cannot confer eligibility. *See SAP supra.* Neither can context. "The Supreme Court and this court have repeatedly made clear that merely limiting the field of use of the abstract idea to a particular existing technological environment does not render the claims any less abstract." *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1259 (Fed. Cir. 2016).

We are not persuaded by Appellant's argument that the Examiner misunderstands the invention by not considering the volume of data a social networking system generates and the interface. Reply Br. 5–8. The claims do not recite any level of data volume, and so very low volumes amenable to paper and pencil are within the scope of the claims. An interface is a generic and conventional computer component. Simply reciting the interface for its intended use and properties cannot confer eligibility.

> Because the claims are directed to an abstract idea, the claims must include an "inventive concept" in order to be patent-eligible. No such inventive concept is present here. Instead, the claims "add" only generic computer components such as an "interface," "network," and "database." These generic computer components do not satisfy the inventive concept requirement.

Mortg. Grader, Inc. v. First Choice Loan Servs. Inc., 811 F.3d 1314, 1324–1325 (2016).

We are not persuaded by Appellant's argument that the Examiner's analysis is untethered from the language of the claims. Reply Br. 8. This is a conclusory argument with no supporting evidence or analysis.

Appellant also attempts to analogize the claims to those involved in *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed.

Cir. 2016). Reply Br. 8. In *McRO*, the court held that, although the processes were previously performed by humans, "the traditional process and newly claimed method . . . produced . . . results in fundamentally different ways." *FairWarning IP, LLC v. Iatric Sys.*, 839 F.3d 1089, 1094 (Fed. Cir. 2016) (differentiating the claims at issue from those in *McRO*). In *McRO*, "[i]t [was] the incorporation of the claimed rules not the use of the computer, that improved the existing technology process," because the prior process performed by humans "was driven by subjective determinations rather than specific, limited mathematical rules." 837 F.3d at 1314 (internal quotation marks and alterations omitted). In contrast, the claims of the instant application merely implement an old practice of using decision criteria in making decisions in a new environment. Appellant has not argued that the claimed processes of selecting users apply rules of selection in a manner technologically different from those which humans used, albeit with less efficiency, before the invention was claimed. Merely pigeon holing the objects of decision making in tiers to aid decision making is both old and itself abstract.

> The claims in *McRO* were not directed to "a specific asserted improvement in computer animation, i.e., the automatic use of rules of a particular type." We explained that "the claimed improvement [was] allowing computers to produce 'accurate and realistic lip synchronization and facial expressions in animated characters' that previously could only be produced by human animators." The claimed rules in McRO transformed a traditionally subjective process performed by human artists into a mathematically automated process executed on computers.

FairWarning, 839 F.3d at 1094.

We are not persuaded by Appellant's argument that the Examiner merely stated disagreement with Appellant's arguments that the claimed

invention similarly recites a specific, structured user interface that is paired with multiple functionalities related to the interface structure. Reply Br. 9, referring to Appeal Br. 14. Appellant cites to *Trading Technologies International, Inc. v. CQG, Inc.*, 675 F. App'x 1001 (Fed. Cir. 2017). First, this case is non-precedential and two related precedential cases with user interfaces had the claims held ineligible. *Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1084 (Fed. Cir. 2019) and *Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1378 (Fed. Cir. 2019). Second, the claim does not recite and the Specification does not describe structure associated with the interface, only data content. In *Trading Technologies*, in response to a similar argument that the claims "provide a particular graphical user interface that improves usability, visualization, and efficiency," the Court determined that "the claims are focused on providing information to traders in a way that helps them process information more quickly, not on improving computers or technology. . . . The 'tool for presentation' here is simply a generic computer." *Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d at 1384–85 (citations omitted). Similarly here the claims are not focused on an interface, but on providing information to users in a way that helps them process information more quickly, not on improving computers or technology and the tool for presentation is a generic computer.

We are not persuaded by Appellant's argument that the claims contain an inventive concept that is also found in the specific ordered combination of the limitations, similar to the Federal Circuit's findings in *BASCOM* (*BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016)). Reply Br. 12. Initially, we remind Appellant that

BASCOM did not find claims eligible on the substance, but rather that the Appellees did not provide sufficient evidence to support a 12(b)(6) motion to dismiss in which facts are presumed in the non-movant's favor.

The key fact in *BASCOM* was the presence of a structural change in "installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user. This design gives the filtering tool both the benefits of a filter on a local computer and the benefits of a filter on the ISP server." *BASCOM*, 827 F.3d at 1350. The instant claims have no analogous structural benefit.

We are not persuaded by Appellant's argument that "an analysis must be made of whether a particular technology is well-understood, routine, and conventional, which goes beyond what was simply known in the prior art." Reply Br. 12. Such analysis is presented *supra* under Step 2B.

We are not persuaded by Appellant's argument that the Examiner did not address the content of the dependent claims. Reply Br. 13. The Examiner addressed all the claims in the Final Action, albeit in summary fashion. Appellant does not argue the dependent claims individually and so there are no arguments for us to respond to.

Claims 1, 4, and 8 rejected under 35 U.S.C. § 103(a) as unpatentable over

Mashable and Puthenkulam

We are not persuaded by Appellant's argument that "Mashable's 'following back' of a user they are not currently following on Twitter (but who is following them) is not a 'relationship modification,' as recited in claims 1, 9, 25, and 27." Appeal Br. 20–21 (emphasis omitted). Mashable describes Twitter's "follow" feature. The Examiner cites this as an example of the recited connection. Final Act. 7. Appellant contends Mashable is

describing a connection from another user to the user in question and not vice versa. We agree. Appellant then contends that a connection must be two-way. *Id.* We disagree. As construed *supra*, there is no requirement for a connection to be two-way.

We are not persuaded by Appellant's argument that "Mashable does not describe a 'predetermined threshold' for the alleged 'following back' modification,' as recited in claims 1 and 27." App. Br. 21–23. Mashable describes using 30, 60, and 90 day thresholds for making decisions. Examiner cites this as an example of a threshold and further determines that as this is simply an example of using thresholds, it shows one of ordinary skill knew to use thresholds in decision making. Final Act. 7. Appellant contends Mashable is describing only a date threshold and such a date threshold would be nonsensical in creating follow relationships. App. Br. 21–23. The limitation at issue is "selecting . . . users as candidate users for relationship modification responsive to the received request based on one or more predetermined thresholds, each predetermined threshold corresponding to a different type of relationship modification." Claim 1, limitation 4. First, there is nothing nonsensical about using similar 30, 60, and 90 day thresholds for making decisions to follow. A user might very well decide that after another user followed him for one of those periods, he would look into creating a reciprocal follow. More to the point, as the Examiner determined, Mashable shows one of ordinary skill would find it predictable to apply thresholds of other characteristics as well. Although Mashable describes the connection of being a follower, users have many other characteristics and so using thresholds to select users for relationship modification would be predictable.

We are not persuaded by Appellant's argument that "Mashable and Puthakulam do not disclose or suggest [limitations 5–7] . . . as recited in claim[s] 1[,] . . . 9 and 27." App. Br. 23–25. Mashable describes showing users who have or haven't tweeted and providing the option to follow or stop following. Examiner cites this as an example of an interface generated and displayed to select relationship modifications and apply them. Final Act. 7. Appellant contends Mashable only describes presenting raw data and not an interface. App. Br. 23–25. As we construe *supra*, generating and providing the recited interface is conventional generation and display of an interface screen for data entry. This is necessarily present in Mashable for a user to be able to enter modifications.

Claim 3 rejected under 35 U.S.C. § 103(a) as unpatentable over Mashable, Puthenkulam, and Official Notice

This rejection is not separately argued.

Claim 7 rejected under 35 U.S.C. § 103(a) as unpatentable over Mashable, Puthenkulam, and Grandison

We are not persuaded by Appellant's argument that

Mashable, Puthakulam, and Grandison do not disclose or suggest "wherein the list of options for the different types of relationship modification comprises the viewing user lessening relationship statuses between the viewing user and the one or more candidate users using the user interface," as recited in dependent claim 7 (depends from claim 1).

Appeal Br. 33–34 (emphasis omitted). Grandison describes lessening privacy settings. Grandison describes a user doing so, implying an interface for the user to enter the change through.

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Claims 9–12, 14–17, 25–27, and 29 rejected under 35 U.S.C. § 103(a) as

unpatentable over Mashable, Dom, and Lu

We are not persuaded by Appellant's argument that "[t]he 'determining' and 'modifying' elements of claim 9 were not addressed in full in the prior Office Action." Appeal Br. 25–27 (emphasis omitted). Appellant only recites and parses the claim limitations and provides no argument and analysis comparing those elements to the art. This is insufficient to act as a separate argument under 37 C.F.R. § 41.37. As our reviewing court held,

> we hold that the Board reasonably interpreted Rule 41.37 to require more substantive arguments in an appeal brief than a mere recitation of the claim elements and a naked assertion that the corresponding elements were not found in the prior art.

In re Lovin, 652 F.3d 1349, 1357 (Fed Cir 2011).

As to Appellant's contention that the rejection is a new ground and should not have been made final, relief is by way of Petition to the Director, as this is not an appealable issue. *See* MPEP § 1207.03.

We are not persuaded by Appellant's argument that

> Mashable, Dom, and Lu do not disclose or suggest "determining, by a processor, a prediction score for the target user based on the information about the target user and the source user applied to the plurality of factors in the retrieved prediction model for suggesting different types of relationship modification to the source user, the different types comprising removing the target user as a connection to the source user in the online social networking system," as recited in claim 9. This argument also applies to claim 27.

App. Br. 27–28 (emphasis omitted). Lu describes predicting the relevance of documents to a search query, ranking the relevance. This implies a score upon which to rank. Dom describes performing a shortest path search on a

social network graph. The shortest path is based on a variety of factors regarding quality of relationships, not just physical distance. Dom weights each relationship, which is a graph edge. Thus, it was predictable to apply a prediction score for ranking the various paths of weighted edges in a social network graph. As each weight applies to an edge, the weight must be stored in association with its respective edge. Mashable describes the purpose of removing a target user as in the earlier rejection.

We are not persuaded by Appellant's argument that "Mashable, Dom, and Lu do not disclose or suggest 'modifying the social graph by storing the prediction score and different types of relationship modifications for the target user in the edge object associated with the target user and the source user,' as recited in claim 9." App. Br. 28–29 (emphasis omitted). Dom assigns weights to each relationship, which is a graph edge. As each weight applies to an edge, the weight must be stored in association with its respective edge.

We are not persuaded by Appellant's argument that

Mashable, Dom, and Lu do not disclose or suggest "selecting a first plurality of weights for the selected plurality of factors in the prediction model" nor "determining, by the processor, a second plurality of weights for the subset of the plurality of factors in the prediction model based on the received user feedback," as recited in claim 25.

App. Br. 29–31 (emphasis omitted). Dom explicitly assigns weights. It was at least predictable to use data entered through a generic interface to assign or affect such weights.

We are not persuaded by Appellant's argument that

Mashable, Dom, and Lu do not disclose or suggest "retrieving a prediction model for predicting engagement with user content, the prediction model having a plurality of factors" nor

> "determining, by a processor, a prediction score for each of the plurality of target users based on information about the target user and the viewing user applied to the plurality of factors in the retrieved prediction model for predicting engagement with user content," as recited in claim 27.

Appeal Br. 31–32 (emphasis omitted). Dom describes a prediction model for engaging other users based on a plurality of factors. It was at least predictable to also apply the prediction model to engaging with content.

We are not persuaded by Appellant's argument that "Mashable, Dom, and Lu do not disclose or suggest 'wherein a factor of the prediction model comprises a count of other users in the online social networking system connected to the [source and/or target] user,' as recited in dependent claims 14-16." App. Br. 34–35 (emphasis omitted, alteration in original). A count of other users in the online social networking system connected to the source and/or target user is a predictable factor in computing Dom's relevance weights.

Claims 13 and 18–21 rejected under 35 U.S.C. § 103(a) as unpatentable over Mashable, Dom, Lu, and Official Notice

We are not persuaded by Appellant's argument that

> Mashable, Dom, Lu, and Official Notice do not disclose or suggest "wherein a factor of the prediction model comprises a period of time elapsed since the target user last updated a user profile on the online social networking system associated with the target user," as recited in claim 20 (depends from claim 9).

Appeal Br. 35. This is at least a predictable criterion upon which to trigger the operations Mashable describes.

Claims 22–24 and 28 rejected under 35 U.S.C. § 103(a) as unpatentable over Mashable, Dom, Lu, and Puthenkulam

This is not separately argued.

CONCLUSIONS OF LAW

The rejection of claims 1, 3, 4, and 7–29 under 35 U.S.C. § 101 as directed to a judicial exception without significantly more is proper.

The rejection of claims 1, 4, and 8 under 35 U.S.C. § 103(a) as unpatentable over Mashable and Puthenkulam is proper.

The rejection of claim 3 under 35 U.S.C. § 103(a) as unpatentable over Mashable, Puthenkulam, and Official Notice is proper.

The rejection of claim 7 under 35 U.S.C. § 103(a) as unpatentable over Mashable, Puthenkulam, and Grandison is proper.

The rejection of claims 9–12, 14–17, 25–27, and 29 under 35 U.S.C. § 103(a) as unpatentable over Mashable, Dom, and Lu is proper.

The rejection of claims 13 and 18–21 under 35 U.S.C. § 103(a) as unpatentable over Mashable, Dom, Lu, and Official Notice is proper.

The rejection of claims 22–24 and 28 under 35 U.S.C. § 103(a) as unpatentable over Mashable, Dom, Lu, and Puthenkulam is proper.

CONCLUSION

The rejections of claims 1, 3, 4, and 7–29 are affirmed.

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1, 3, 4, 7–29	101	Eligibility	1, 3, 4, 7–29	
1, 4, 8	103(a)	Mashable, Puthenkulam	1, 4, 8	
3	103(a)	Mashable, Puthenkulam, Official Notice	3	
7	103(a)	Mashable, Puthenkulam, Grandison	7	
9–12, 14–17, 25–27, 29	103(a)	Mashable, Dom, Lu	9–12, 14–17, 25–27, 29	
13, 18–21	103(a)	Mashable, Dom, Lu, Official Notice	13, 18–21	
22–24, 28	103(a)	Mashable, Dom, Lu, Puthenkulam	22–24, 28	
Overall Outcome			1, 3, 4, 7–29	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2011).

AFFIRMED