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MCATEE, PATRICK

ART UNIT	PAPER NUMBER
3689	

NOTIFICATION DATE	DELIVERY MODE
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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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
	14/577,161	DELACOURT et al.
Office Action Summary	Examiner	Art Unit	AIA Status
	Patrick McAtee	3689	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 <u>3</u> 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 <u>8/9/18</u>.
  ☐ 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) <u>1-20</u> 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  5a) Of the above claim(s) _____ is/are withdrawn from consideration.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) <u>1-20</u> 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 <u>allowable</u>, 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
<u>http://www.uspto.gov/patents/init_events/pph/index.jsp</u> 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 _____ 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)   3) ☐ Interview Summary (PTO-413)
                                                       Paper No(s)/Mail Date _____.
2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)   4) ☐ Other: _____.
  Paper No(s)/Mail Date _____.

DETAILED ACTION

This is a final office action on the merits. The U.S. Patent and Trademark Office (the

Office) has received claims 1–20 in application number 14/577,161.

- Claims 1, 5–7, 11, 14, and 17 are currently amended.
- No claims have been added or cancelled.

Claims 1–20 are pending and have been examined on the merits.

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the

first inventor to file provisions of the AIA.

This application currently names joint inventors. In considering patentability of the

claims the examiner presumes that the subject matter of the various claims was commonly

owned as of the effective filing date of the claimed invention(s) absent any evidence to the

contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and

effective filing dates of each claim that was not commonly owned as of the effective filing date

of the later invention in order for the examiner to consider the applicability of 35 U.S.C.

102(b)(2)(C) for any potential 35 U.S.C. 102(a)(2) prior art against the later invention.

Claim Rejections - 35 U.S.C. § 112(b)

The following is a quotation of 35 U.S.C. § 112(b):

> (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. § 112 (pre-AIA), second paragraph:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1.   **Claim 11 is rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.**

Regarding claim 11. Claim 11 has been amended to recite:

> wherein the pre-determined criteria comprise a pre-determined voting strategy;

at line 2. But claim 7, from which claim 11 depends, has also been amended to recite:

> wherein the pre-determined criteria comprise a pre-determined voting strategy;

at line 2. Thus, claim 11 repeats verbatim a limitation from claim 7, and claim 11 is indefinite because it is not clear if the repeated limitation somehow further limits claim 11 in a way that claim 7 is not, either by implying a new element is required, or by the repetition itself. If the limitation does not further limitation claim 11, it is not clear whether its repetition in claim 11 alongside the other limitations of claim 11 somehow further narrows claim 11. Based on these issues and possible other interpretations, one of ordinary skill in the art would not have been able to determine the required scope of claim 11 to avoid possible infringement. Therefore, claim 11 is indefinite.

Claim Rejections - 35 U.S.C. § 101

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.

2.   **Claims 1–20 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Based upon consideration of all of the relevant**

factors with respect to the claims as a whole, claims 1–20 are held to claim an unpatentable abstract idea, and are therefore rejected as ineligible subject matter under 35 U.S.C. § 101.

Regarding claims 1–20. As discussed in MPEP § 2106, Part (III), when considering subject matter eligibility under 35 U.S.C. § 101, it must be determined whether the claim is directed to one of the four statutory categories of invention, i.e., process, machine, manufacture, or composition of matter (i.e., Step 1). If the claim does fall within one of the statutory categories, it must then be determined whether the claim is directed to a judicial exception (i.e., law of nature, natural phenomenon, and abstract idea) (i.e., Step 2A), and if so, it must additionally be determined whether the claim contains any additional elements other than the abstract idea itself that transform the exception into patent-eligible subject matter. If an abstract idea is present in the claim, any additional elements in the claim, either individually or as an ordered combination, must be sufficient to ensure that the claim contains an inventive concept, i.e., amounts to significantly more than the abstract idea itself (i.e., Step 2B).

With respect to Step 2A, the Supreme Court and Federal Circuit have identified abstract ideas in patent claims by making comparisons to concepts found in past decisions to be judicial exceptions to eligibility. MPEP § 2106.04(a). Section 2106.04(a)(2) of the MPEP summarizes concepts the courts have considered to be abstract ideas by associating eligibility decisions with judicial descriptors (e.g., "an idea of itself," "certain methods of organizing human activities") based on common characteristics. These associations define the judicial descriptors in a manner that stays within the confines of the judicial precedent, with the understanding that these associations are not mutually exclusive, i.e., some concepts may be associated with more than

one judicial descriptor. Additionally, the USPTO regularly updates both a quick reference sheet[1]

and chart of decisions[2] showing how the courts continue to address subject matter eligibility

questions.

With respect to Step 2B, MPEP § 2106.05, Part (I)(A) summarizes a non-exhaustive list

of relevant considerations for evaluating whether additional elements in a claim amount to an

inventive concept, i.e., amount to significantly more than the abstract idea itself. The

considerations, elaborated upon in MPEP § 2106.05(a)–(h), are whether the additional elements

amount to:

a) Improvements to the functioning of a computer itself or improvements to any other technology or
    technical field;
b) Applying the judicial exception with, or by use of, a particular machine;
c) Effecting a transformation or reduction of a particular article to a different state or thing;
d) Adding a specific limitation other than what is well-understood, routine and conventional in the
    field, or adding unconventional steps that confine the claim to a particular useful application;
e) Other meaningful limitations beyond generally linking the use of the judicial exception to a
    particular technological environment;
f) More than a recitation of the words "apply it" (or an equivalent) or are more than mere
    instructions to implement an abstract idea or other exception on a computer;
g) Adding more than insignificant extra-solution activity to the judicial exception; and
h) More than generally linking the use of a judicial exception to a particular technological
    environment or field of use.

In the instant case, claims 1–5 are directed to a machine (i.e., system); claims 6–16 are

directed to a process (i.e., method); and claims 17–20 are directed to an article of manufacture

(i.e., non-transitory computer-readable storage medium). However, as discussed below, the

claimed invention is directed to ineligible subject matter because the claims as a whole,

considering all claim elements both individually and in combination, are directed to a judicial

exception without reciting significantly more than the judicial exception.

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[1] Available at https://www.uspto.gov/sites/default/files/documents/ieg-qrs.pdf.
[2] Available at https://www.uspto.gov/sites/default/files/documents/ieg-caselawchart.xlsx.

The limitations of independent claim 1 are representative of and/or encompass the

method steps of independent claim 6 and the functions of independent claim 17. Therefore, the

limitations of claim 1 are being used as representative of claims 6 and 17 and have been denoted

with letters by the Examiner for easy reference. The limitations of claim 1 that define an abstract

idea are identified in **bold** below:

[A] A system, comprising:

[B] a plurality of computing nodes of a service provider that collectively provide services
to a plurality of clients of the service provider via a service provider network that is
distinct from client networks of the plurality of clients, each of the computing nodes
comprising at least one processor and a memory, and the services comprising one or
more backend services provided for clients;

[C] wherein one or more of the plurality of computing nodes implement **an approval
service that manages approval requests pertaining to provisioning,
administering, or managing computing resources comprising the computing
nodes on behalf of the backend services;**

[D] a backend interface **for exchanging approval requests and approval results** over a
network between the approval service and the one or more backend services; and

[E] an administrator interface through which a client's administrator interacts with the
approval service to manage approval requests transmitted via the backend interface
to the approval service over the network from one or more backend services provided
for the client by the service provider, wherein the approval service is a different
service than the one or more backend services that are sources of the approval
requests;

wherein the approval service is configured to:

[F] **receive,** through the administrator interface, **a request to create an approval
template, wherein the approval template defines a one or more criteria for
approval or denial of approval requests that are associated with the approval
template;**

[G] **create the approval template, wherein creating the approval template comprises
storing a representation of the approval template on service provider resources
for subsequent association with approval requests;**

[H] **receive,** through the administrator interface, **a request to create an approval group,
wherein members of the approval group are members of the client who are**

> authorized to respond to approval requests that are associated with the
> approval group;
>
> [I] create the approval group, wherein creating the approval group comprises
> storing a representation of the approval group on service provider resources for
> subsequent association with approval requests;
>
> [J] receive, through the administrator interface, a request to associate the approval
> template and the approval group with one or more approval requests;
>
> [K] store information indicating an association between the approval template, the
> approval group, and the one or more approval requests;
>
> [L] receive, over the network from one of the one or more backend services, a given one
> of the one or more approval requests;
>
> [M] notify the members of the approval group that the given approval request has
> been received;
>
> [N] receive, from one or more of the members of the approval group, a respective
> response to the given approval request;
>
> [O] determine, based at least in part on the received responses and the one or more
> criteria, a result of the given approval request; and
>
> [P] transmit, via the backend interface over the network to the one of the one or more
> backend services, an indication of the result of the given approval request; and
>
> [Q] wherein the one or more backend services are configured to: trigger, based on receipt
> of the result of the given approval request, performance of an action associated with
> provisioning, administering, or managing one or more of the computing resources.

Claim 1 recites an approval service in which approval requests for provision of a resource

are exchanged and managed (limitations C, D) that includes the steps of receiving a request to

create and creating an approval template and approval group (limitations F, G, H, I), receiving a

request to associate and storing an association among the approval template, approval group, and

approval request (limitations J, K), receiving an approval request (limitation L), notifying

members of the approval group of the request (limitation M), receiving from the members a

response to the approval request (limitation N), and determining a result of the approval request

and transmitting an indication of the result (limitations O, P). These steps describe a voting or

approval process that uses predefined criteria to determine if the collective responses from a

group to an approval request results in approval or denial of the request, and sharing the result,

which is similar to concepts identified as abstract ideas by the courts.

Courts have applied the phrase "certain methods of organizing human activity" or human

interaction to describe concepts relating to interpersonal and intrapersonal activities, such as

managing relationships or transactions between people, social activities, and human behavior;

satisfying or avoiding a legal obligation; advertising, marketing, and sales activities or behaviors;

and managing human mental activity. MPEP § 2106.04(a)(2), Part II. For example, several cases

have found concepts relating to managing relationships or transactions between people abstract,

such as processing loan information (*Dealertrack*), managing an insurance policy (*Bancorp*), and

generating rule-based tasks for processing an insurance claim (*Accenture*). All of these concepts

relate to processing a workflow in a business or transactional environment according to

predetermined constraints that determine an outcome (e.g., is the loan approved, is the insurance

policy issued or claim paid). The concept described in claim 1 is not meaningfully different from

the concepts above because it recites predetermining constraints (e.g., template and group(s), one

or more criteria (formerly recited as "voting strategy")) used in an approval workflow to

determine an outcome (e.g., a result of the approval request). The limitations that define the

abstract idea comprise a substantial portion of the claim; most of claim 1 is directed to describing

these concepts. Therefore, claims 1, 6, and 17 are directed to a judicial exception in the form of

an abstract idea consistent with "certain methods of organizing human activity."

In addition, the phrase "an idea 'of itself,'" is used to describe an idea standing alone

such as an uninstantiated concept, plan or scheme, as well as a mental process (thinking) that

"can be performed in the human mind, or by a human using a pen and paper." MPEP

§ 2106.04(a)(2), Part III. Here, the portions of claim 1 identified above are directed to a process

for creating an approval template, an approval group, receiving an approval request, notifying the

members of the approval group of the request and then recording responses and determining a

result. This reflects a plan or scheme that can be performed by a human using pen and paper,

such as an "approval process . . . usually accomplished by an inter-office document on which the

various people in the chain of command respond." (US Patent 5125075 to Goodale, c1:18–20).

Furthermore, Applicant's specification states:

> Therefore, in an organization in which many such emails or text messages are exchanged
> between the members of the organization, keeping track of what has or has not been done
> (much less by whom) can be difficult and error-prone. In addition, this approach can easily
> lead to an important task going unperformed (or an important approval request being ignored)
> while each member of the organization that received the message assumes that another
> member will perform the task (or respond to the approval request).

(App. Spec. [0002]). Thus, it is recognized that a typical or conventional approval management

process involves circulating a paper document to which the various people in the approval chain

respond, and that the problem to which the invention is directed is one related to tracking

information using human mental work or effort. This is consistent with a plan or scheme

performed by a group of humans using pen and paper and show that claims 1, 6, and 17 are

further directed to a judicial exception in form of an abstract idea consistent with "an idea of

itself."

The Examiner notes that the bold portions of the claim above are also similar to certain

methods of organizing human activity embodied in governmental functions. For example,

legislative bodies have predefined procedures for introducing and handling legislation, bills,

measures, and nominations (i.e., approval templates) and will also have rules about voting (i.e.,

one or more criteria for approval (formerly recited as "voting strategies") as well as different

chambers, committees, or bodies (e.g., approval groups) who receive notifications of votes on

bills and measures (i.e., approval requests). The members then respond by voting on the bills,

measures, or nominations where the voting rules determine the outcome and the result is made

public. This is generally reflected in city councils, state legislatures, and the Congress of the

United States. Similarly, at the appellate level of a judicial body, a group of judges will receive

notification of a request to hear a case, or hear a case, and then vote on the outcome of the case,

with the result of the vote being published as an opinion, decision, or memorandum. Similarly, a

jury acts as an approval group, notified of the request for approval by a jury summons, with

respect to an approval request in delivering a verdict in a case according to a burden of proof or

legal standard required to reach the verdict (e.g., unanimous, majority). Similarly, a population

of registered voters acts as an approval group with respect to being notified of and responding to

an election item (e.g., candidate, measure, proposition, amendment, referendum) where the

criteria for voter "approval" (e.g., majority, plurality, fraction) are established by law. Although

courts have not considered a case in which these governmental functions were identified as an

abstract idea, the Examiner finds reasonable similarities and parallels between these functions

and the concepts under "certain methods of organizing human activity." Thus, because the bold

portions of the claimed invention are not meaningfully different from these governmental

functions, the Examiner finds this as another basis to conclude that the invention is directed to an

ineligible judicial exception in the form of an abstract idea.

Again using claim 1 as exemplary, the additional elements or combination of elements

other than the abstract idea itself include a plurality of computing nodes of a service provider that

collectively provide services to a plurality of clients . . . , each of the computing nodes

comprising at least one processor and a memory, and the services comprising one or more

backend services, wherein one or more of the plurality of computing nodes implement an

approval service; a backend interface for exchanging [data] over a network between the approval

service and the one or more backend services; and an administrator interface through which a

client's administrator interacts with the approval service to manage requests transmitted via the

backend interface to the approval service over the network . . . ; wherein the approval service is

configured to: **receive**, through the administrator interface (x3), **receive**, from one of the one or

more backend services; and **transmit**, over the network to the one of the one or more backend

services.

The computing components recited in claim 1 are recited at a high level of generality, and

amounts to no more than addition of a generic computer or technological platform to the claimed

abstract idea. The recitation that the computing nodes comprising at least one processor and a

memory provide "services to an organization that is a customer of a service provider" and

"implement an approval service," including "a backend interface for exchanging" approval data

with the approval service and "an administrator interface through which an administrator . . .

interacts with the approval service to manage approval requests from one or more backend

services" and transmitting information "over a network" suggests a field of use or context in

which the generic computing platform is implemented, but does not describe a particular

machine or improvement to the computer itself. More specifically, these recitations of what the

computing nodes "provide" and "implement" at most lean into the abstract idea identified above,

but nonetheless do not recite any technological improvements or unconventional utilization of

the generic computer.

Furthermore, functions such as "receive," "store," "notify," "return," and "transmit" are

similar to functions that courts have identified as well-understood, routine, and conventional

computing functions when performed by a generic computer, as that in claim 1. This is supported

by cases cited in MPEP § 2106.05(d)(II). For instance, courts have found to be well-understood, routine, and conventional functions including transmitting and receiving information over a network, i.e., using the Internet to gather data (*Symantec*); storing and retrieving information in memory (*Versata*); and electronic recordkeeping (*Alice*) which is similar to notifying of a result of a request and returning or communicating that result. The number and repetition of these steps does not in this case differentiate these functions from a series of well-understood, routine, and conventional functions, i.e., there is nothing about the ordered combination of repeated conventional functions that transforms the underlying abstract idea.

The other functions performed by the computer (e.g., create, determine, and trigger performance of an action) are simply an instruction that the abstract idea is carried out the generically recited computing environment. A human is capable of following administrative rules pertaining to approvals to administrative create approval groups and rules/criteria, determine an outcome of the request, and trigger performance of an action based on the result (limitations I, O, and Q). There is nothing significant or meaningful about the role of the computer in the claims beyond situating the abstract idea in the generic computing environment.

As noted above, the portions of the claim that define the abstract idea echo processes that predate computers, much like the concept of defining a workflow and the requirements for completing steps or phases of the workflow predate modern computers. Thus, while the abstract idea as claimed has been implemented in a technological environment, it is merely a generic and superficial technological environment, and there is nothing significant or meaningful about that implementation that transforms the abstract idea into eligible subject matter. The generic computing nodes are merely being used to perform well-understood, routine, and conventional functions to support (e.g., by exchanging and storing data) a voting or approval process that uses

predefined criteria to determine if the collective responses from a group to an approval request

results in approval or denial of the request, and sharing the result. The creating and determining

aspects of the claim are not changed because they are implemented by a computer, and even in

combination with the expected speed and communication advantages of a computer are not

significantly or meaningfully different from what could be implemented as a purely manual or

mental activity (similar to the legislative or judicial processes discussed above) notwithstanding

the insubstantial incorporation of a generic computer in the claim, and several "interfaces"

recited at a high level of generality and merely so that humans can participate in the approval

process on the generic computing platform.

The Examiner's analysis of the claim holds when considering the invention in light of the

specification, where the problem is described as "keeping track of what has or has not been done

(much less by whom) can be difficult and error-prone . . . [which] can easily lead to an important

task going unperformed (or an important approval request being ignored) while each member of

the organization that received the message assumes that another member will perform the task

(or respond to the approval request)." (App. Spec. [0002]). It is not necessary to address this

problem using a computer, because the problem is one of interpersonal communication and

planning, not of technology. Indeed, Applicant's specification states that problems can arise even

when technology (e.g., text messages or email) is used in the planning and workflow process. As

stated in Applicant's specification, "requests for approval to perform tasks or access resources

are often sent from employees or managers to other employees, managers and/or other authority

figures using emails or text messaging," but

> . . . once the emails or text messages are sent, the sender does not have any control over
> them, nor any mechanism for determining whether or not the instructions were followed (or
> for determining the state of pending approval requests). In some cases, if there are multiple
> acceptable actions that an organization member can take in response to such a message, the
> sender might like to know which of these actions, if any were taken. In some cases, if an

email or text message that includes instructions to perform a task (or respond to an approval request) is sent to multiple people (e.g., all of the members of a department or project team), the sender will typically not have any control over, or knowledge of, which, if any, of the recipients actually read the email or text message and/or perform the task (or respond to the approval request).

(App. Spec. [0002]). Thus, even in the context of using technology to perform the communication, the problems that arose prior to email and text messaging in approval workflows can persist. The present invention mimics what are traditionally certain methods of organizing human activity to plan and carry out an approval workflow, but in a generic technological environment. Claim 1 does not otherwise recite any improvements to technology or another technical field, to the computer itself, or any unconventional steps or limitations that confine the claim to a particular practical application. Therefore, claims 1, 6, and 17 are considered to be directed to a judicial exception without any significant or meaningful additional elements that transform the exception into eligible subject matter.

Dependent claim 2 merely recites what the approval requests are "related to" and what the approval template or group is "associated with." These limitations define the context or environment of use of the abstract idea but do not add any additional elements for consideration under Step 2B. Thus, claim 2 simply embellishes the abstract idea, but does not recite anything in combination with claim 1 that satisfies the considerations of Step 2B. Claim 2 is ineligible.

Dependent claim 3 further recites the role or title of individual persons who are "members of the approval group." By listing possible roles or titles of the individuals who might be voting on the approval request, claim 3 simply further describes the context or environment of use of the abstract idea but does not add any additional elements for consideration under Step 2B. Thus, claim 3 simply embellishes the abstract idea, but does not recite anything in combination with claim 1 that satisfies the considerations of Step 2B. Claim 3 is ineligible.

Dependent claim 4 further recites that the approval template defines two or more approval levels, and that each approval level is associated with a respective approval group. These limitations are considered to be directed to the same abstract idea as claim 1, and fall under "certain methods of organizing human activity." For example, a legislative committee can vote to move a bill to the floor, and then the entire legislative body can vote on the bill. This is two approval levels where each level is associated with a respective approval group, showing that claim 4 is not meaningfully different from traditional interpersonal activities. Claim 4 does not recite any additional elements for consideration under Step 2B. Therefore claim 4 is ineligible for the same reasons as claim 1.

Dependent claim 5 further recites the criteria used for the voting strategy defined by the approval template. These criteria are considered to be "an idea of itself" because they comprise a plan or scheme that can be embodied as a purely mental process in which a human tallies the votes and applies the criteria to determine the outcome. There are no additional elements in claim 5 for consideration under Step 2B. Therefore, claim 5 is directed to an abstract idea, and like claim 1 lacks any significant or meaningful additional elements to make the claim eligible. Claim 5 is ineligible.

Dependent claim 7 further recites that the "criteria comprise a pre-determined voting strategy" and repeats steps with elements similar to limitations F, G, and K in claim 1, which have been addressed above. Claim 7 as an ordered combination with claim 6 does not recite anything that was not addressed with respect to claim 1 above. Therefore claim 7 is ineligible for the same reasons as the independent claims.

Dependent claim 8 repeats the "associating" step of claim 7 with respect to "one or more other approval requests" but does not recite any new additional elements for consideration under

Step 2B. The repetition of the association does not add anything significant or meaningful to the abstract idea. Claim 8 is ineligible.

Dependent claim 9 further recites additional details of the plan or scheme defined in the approval template for the approval sequence, specifically having "two or more approval levels," and that each approval level is associated with an approval group. These elements pertain to the administration of the process, plan, or scheme, but do not recite any additional elements for consideration under Step 2B. Furthermore, as an ordered combination of elements with claim 7, the elements do not recite any unconventional steps or limitations that confine the claim to a particular practical application. The claim merely recites two or more approval levels each associated with a respective approval group, and embellishes the abstract idea but does not add a significant or meaningful limitation to transform the abstract idea. Claim 9 is ineligible.

Dependent claims 10, 11, and 12. Claims 10 and 11 each first recite two "wherein" clauses that are nothing more than a more detailed statement of the "each approval level defined by the approval template is associated with a respective approval group" in claim 9, and as such do not add anything for the same reasons as discussed with respect to claim 9. Both claims 10 and 11 also recite two "notifying" steps. On the one hand, notifying is not meaningfully different from interpersonal communication and therefore part of the abstract idea of certain methods of organizing human activity discussed with respect to the independent claims. On the other hand, "notifying" in a generic computing platform is merely a well-understood, routine, and conventional exchange of data, and not significant or meaningful. Even in claim 11, where the "notifying members of the other approval group" is in response to some criteria, the criteria merely acts as a trigger or condition for the "notifying," which does not distinguish the claim from an ordinary manual or mental process. Claim 11 also further recites that the "criteria

comprise a pre-determined voting strategy" (repeated from claim 7) and recites "receiving" and

"determining" steps that are similar to limitations N and O of claim 1 discussed above. When

considered as an ordered combination, claims 10 and 11 elaborate on the plan or scheme used to

administer the workflow, but do not recite any limitations that improve a technology or another

technical field, or any other elements that distinguish the claim from an ordinary manual or

mental process other than the generic computing elements in the independent claim. Dependent

claim 12 merely recites the same "in response to" conditional phrase in the latter portion of the

second "notifying" limitation in claim 11, and does not recite any other additional elements.

Therefore, claims 10, 11, and 12 are ineligible.

Dependent claim 13 first recites a limitation that describes the role or title of the "service

provider customer," which adds context to the field of use of the invention but is part of the

abstract idea and not an additional element considered under Step 2B. Claim 13 then recites a

"receiving" limitation that is similar to limitation F of claim 1, which has been addressed above.

Thus, when the limitations of claim 13 are considered as an ordered combination, they merely

embellish the abstract idea identified in the independent claims but fail to recite an additional

element or combination of limitations that amounts to significantly more than the abstract idea

itself. Therefore, claim 13 is ineligible.

Dependent claim 14 first recites a limitation that describes the role or title of the "service

provider customer," which adds context to the field of use of the invention but is part of the

abstract idea and not an additional element considered under Step 2B. Claim 14 then recites four

method steps that are similar to limitations F, G, J, and K in claim 1, which has been addressed

above. The final "wherein" limitation of claim 14 pertains to the content of the approval request

or what the approval request represents, but the source or character of the information or what

the information pertains to does not differentiate the abstract idea from an ordinary mental process. Thus, when the limitations of claim 14 are considered as an ordered combination, they merely embellish the abstract idea identified in the independent claims but fail to recite an additional element or combination of limitations that amounts to significantly more than the abstract idea itself. Therefore, claim 14 is ineligible.

Dependent claim 15 recites two "wherein" clauses that repeat concepts similar to limitations K and L in claim 1, which has been addressed above. Thus, claim 15 does not recite any additional elements for consideration under Step 2B, but merely embellishes the abstract idea. Therefore, claim 15 is ineligible.

Dependent claim 16 recites three "wherein" clauses that include the approval request is received "in an actionable notification message," the approval group is "associated with a message inbox," and notifying comprises "posting the actionable notification message to the message inbox." These limitations do not strictly require a computer or computing device because paper-based actionable notifications and message inboxes can be used within the scope of the claim language. However, for purposes of compact prosecution, the Examiner will consider the limitations of claim 16 under Step 2B because they appear to intend to imply the use of electronic communication such as email. However, even when considered under Step 2B, the actions or functions and the technological elements supporting them are recited at a high level of generality and are not sufficiently meaningful or significant to transform the abstract idea. Therefore, claim 16 is ineligible.

Dependent claim 18 recites the "associating" concept of limitation J and the "defines a voting strategy" concept of limitation F, both in claim 1. These limitations have been addressed above. Claim 18 also repeats the limitations with respect to "the other approval request," which

is duplicative of the approval request. When claim 18 is considered as an ordered combination with claim 17, the limitations of claim 18 do not add any significant or meaningful additional elements. Rather claim 18 merely further defines the plan or scheme used to carry out the method of organizing human activity. Repeating or duplicating the elements that define the abstract idea does not transform the abstract idea, i.e., it is within the scope of human activity to repeat or duplicate an approval request and define a similar or different voting strategy. Therefore, claim 18 is ineligible.

Dependent claim 19 recites three "wherein" limitations. The first limitation is similar to claims 4 and 9, which have been addressed above. The second limitation is similar to the first limitation of claims 10 and 11, which have been addressed above. The third "wherein" limitation comprises an approval criteria (formerly recited as "voting strategy") definition similar to limitation F of claim 1 and a "second approval group" that is similar to the second limitation of claim 10, both of which have been addressed above. Because each of these limitations, as addressed above, do not amount to significantly more than the abstract idea, when they are recited as an ordered combination in claim 19, they merely operate as a remixed set of details further defining the abstract idea, but do not result in any improvement to technology, to a technical field, to the computing platform itself, or otherwise transform the abstract idea. The limitations are solely directed to the plan or scheme for organizing human activity, and therefore claim 19 is ineligible.

Dependent claim 20 further recites that the approval service "is configured to initiate" a further action or workflow in response to the determination of the result of the approval request. As discussed with respect to claims 1, 6, and 17, the concept of initiating an action or workflow in response to some triggering event or condition (i.e., plan, scheme, or rules) is not

meaningfully different from concepts courts have identified as abstract ideas consistent with

"certain methods of organizing human activity." Claim 20 adds a further step within the scope of

the abstract idea because human activity alone can initiate a particular action or workflow in

response to the result of a prior action or workflow. The generic computing platform adds little if

any significance to the claim, and fails to transform the abstract idea. Therefore, claim 20 is

ineligible.

In summary, when the dependent claims are considered both individually and as an

ordered combination of elements with their parent claims, the dependent claims do not provide

meaningful limitations to transform the abstract idea into a patent eligible application of the

abstract idea such that the claims amount to significantly more than the abstract idea itself. The

claims do not recite an improvement to another technology or technical field, an improvement to

the functioning of the computer itself, or recite limitations beyond generally linking an abstract

idea to a particular technological environment. Therefore, the claims are rejected under 35

U.S.C. § 101 as being directed to non-statutory subject matter.

Response to Remarks

3.   **With respect to the rejection of claims 1–20 under § 102 and 103, Applicant asserts**

on pages 13–17 of Applicant's remarks filed August 9, 2018:

Independent Claim 1 Is Patentable over Any Combination of the Cited References

The cited combination fails to teach or suggest [quoting a substantial portion of claim 1] as
recited in claim 1.

As discussed during the interview, the cited combination fails to teach or suggest, within the
context of the rest of Applicant's claimed subject matter: *wherein one or more of the plurality*
of computing nodes implement an approval service that manages approval requests
pertaining to provisioning, administering, or managing computing resources comprising the
computing nodes on behalf of the backend services; [and] a backend interface for exchanging
approval requests and approval results over a network between the approval service and the
one or more backend services.

Instead, the relied-upon portions of Davne (paras. 84 and 122) describe that Bob (a user)
requests a VM via the vNOC portal 418 which is part of the same vNOC service mapped to
Applicant's approval service. Each one of FIGs 17-20 begins with Bob requesting creation of
a new instance via the vNOC portal 418. See paras. 81, 82, 120.

In another example discussed during the interview, cited para. 122 of Davne describes that the
resulting notification is sent to Bob, not a different service. Furthermore, the instance created
block (1820) does not correspond to a *different* service from which the approval request was
received.

Also discussed during the interview, no admin approval of approval requests is described in
any of the cited paragraphs. Instead, the cited operations management 616 module acts as a
single source of provisioning for multiple cloud providers.

Therefore, as discussed during the interview, Davne fails to teach or suggest *an approval*
service that manages approval requests pertaining to provisioning, administering, or
managing computing resources comprising the computing nodes on behalf of the backend
services; a backend interface for exchanging approval requests and approval results over a
network between the approval service and the one or more backend services, as recited in
Applicant's claim.

Reconsideration and withdrawal of the rejection of claim 1 1s respectfully requested for at
least these reasons.

Independent Claim 6 Is Patentable over Any Combination of the Cited References

The cited combination fails to teach or suggest [quoting a substantial portion of claim 6], as
recited in claim 6.

At least for reasons similar to those presented above in regard to claim 1, the rejection of claim 6 is unsupported by the cited references and removal thereof is respectfully requested.

Independent Claim 17 Is Patentable over Any Combination of the Cited References

The cited combination fails to teach or suggest [quoting a substantial portion of claim 17], as recited in claim [17].

At least for reasons similar to those presented above in regard to claim 1, the rejection of claim 17 is unsupported by the cited references and removal thereof is respectfully requested.

In regard to the rejections under 35 U.S.C. § 103, Applicant asserts that numerous dependent claims recite further distinctions over the cited art. Applicant traverses the rejection of these claims for at least the reasons given above in regard to the claims from which they depend. However, since the rejections have been shown to be unsupported for the independent claims, a further discussion of the dependent claims is not necessary at this time. Applicant reserves the right to present additional arguments.

Response: Notwithstanding the Applicant's remarks above, the Examiner has reconsidered the prior art rejections in view of the current amendments and has withdrawn the rejections. Specifically, the Examiner finds the prior art teaches the individual components, functions, and elements of the independent claims 1, 6, and 17. This includes cloud service/resource provisioning processes, resource request approval processes, service customer portals, service customer backend portals and interfaces, and communications regarding the approval requests and decisions. However, there is nothing in the prior art identified at this time that would have suggested to a person having ordinary skill in the art that it would have been obvious before the effective filing date of the invention to combine these features into a single invention as currently claimed. More particularly, the Examiner cannot identify a reference or combination of references at this time that would have taught or suggested to a skilled artisan having ordinary creativity and the level of ordinary skill in the art (based on the prior art made of record) to utilize a backend interface for exchanging approval requests and approval results when that process is also available in a "front-end" customer portal or provisioning service. While the prior art of record is replete with examples of communication related to approval requests, such

as the emails associated with the VNOC in Davne, or notifications received directly through a

customer portal, and it was known that a backend service or resource can communicate and

interact with front-end customer portals, the Examiner cannot identify a motivation or rationale

to explain why a person having ordinary skill in the art would have arranged the transmitting and

receiving of approval request data through both a backend interface and an administrative

interface as claimed.

Accordingly, on the basis of prior art of record at this time, the currently amended claims

1, 6, and 17 are found to be novel and nonobvious. Accordingly, dependent claims 2–5, 7–16,

and 18–20 that incorporate the independent claims are also found to be novel and nonobvious.

Therefore, the prior art rejections have been withdrawn.

4. **With respect to the rejection of claims 1–20 under § 101, Applicant asserts on pages**

17–20 of Applicant's remarks:

> Applicant's claimed subject matter is an improvement to service provider computing systems.
> Here, as in other cases such as *Bascom* wherein the Court relied upon the particular
> arrangement of the combination of elements as an improvement over prior ways, Applicant's
> claimed subject matter does not [simply] describe a computer implemented technique for
> "organizing human activity" but instead describes a particular system and technique of
> provisioning, administering, or managing computing resources on behalf of backend services
> of a service provider. *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*, 827
> F.3d 1341 (Fed Cir. 2016). The particular system and technique includes a combination of
> administrator-configurable approval templates and approval groups in combination with a
> backend interface between the approval service and the backend services of the service
> provider such that the approval service can receive requests directly from the backend
> services and facilitate responses to the approval requests via a more efficient, and more
> accurate approval technique that significantly reduces errors and reduces the number of
> computing resource provisionment, administration and management tasks that go
> unperformed.
>
> Para. 2 of Applicant's Detailed Description explains some of the problems associated with
> prior approval systems (approval systems based on email exchanges without the
> improvements described in Applicant's claim).

In addition, requests for approval to perform tasks or access resources are often sent from employees or managers to other employees, managers and/or other authority figures using emails or text messaging. However, once the emails or text messages are sent, the sender does not have any control over them, nor any mechanism for determining whether or not the instructions were followed *(or* for determining the state of pending approval requests). In some cases, if there are multiple acceptable actions that an organization member can take in response to such a message, the sender might like to know which of these actions, if any were taken. In some cases, if an email or text message that includes instructions to perform a task (or respond to an approval request) is sent to multiple people (e.g., all of the members of a department or project team), the sender will typically not have any control over, or knowledge of, which, if any, of the recipients actually read the email or text message and/or perform the task *(or* respond to the approval request). Therefore, in an organization in which many such emails or text messages are exchanged between the members of the organization, keeping track of what has or has not been done (much less by whom) can be difficult and error-prone. In addition, this approach can easily lead to an important task going unperformed (or an important approval request being ignored) while each member of the organization that received the message assumes that another member will perform the task (or respond to the approval request).

Para. 32 of Applicant's Detailed Description describes further technical improvements made by Applicant's claimed subject matter. For example, if a request to access a software product is approved, this may trigger a workflow to deliver the software product to the requestor; if a request to subscribe to a service is approved, this may trigger a workflow for obtaining a subscription to that service *(or* a license for its use); or if a request to share information is approved, this may trigger a workflow that provides the information to a recipient or makes the information available for discovery by one or more potential recipients.

Thus, Applicant's claim describes an improvement to prior (e.g., e-mail-based) approval systems by combining administrator-configurable approval templates and approval groups with a backend interface between the approval service and the backend services of the service provider such that the approval service can receive requests directly from the backend services and facilitate responses to the approval requests via a more efficient, and more accurate approval technique that significantly reduces errors and reduces the number of computing resource provisionment, administration and management tasks that go unperformed.

Response: Applicant's remarks have been fully considered but they are not persuasive.

The Examiner disagrees that triggering a workflow to fulfill a request upon receipt of the request

is meaningfully different from concepts identified as abstract ideas by the courts. The Applicant

seems to be placing more weight on the field-of-use of cloud computing services than the

Examiner. For instance, the example in Applicant's remarks that "if a request to share

information is approved, this may trigger a workflow that provides the information to a recipient

or makes the information available for discovery by one or more potential recipients," reads on

the use of interrogatories in the discovery process in litigation, which predates modern

computers.

The Examiner also disagrees that the portions of the disclosure cited by Applicant

articulate the connection between the claimed solution and the problem in the same manner as in

BASCOM. The court in that case found the claims specifically addressed the problem by

retaining the advantages of known solutions while avoiding their drawbacks, and the court

understood a clear connection between that teaching in the specification and the claimed

invention. Here, the Examiner is unable to identify, and the Applicant has not explained, how the

claimed solution *combines* known solutions while retaining their advantages and avoiding their

drawbacks. As noted in the detailed rejection, the "drawbacks" of known systems were not

technological, but human in their nature. Where known technologies (e.g., paper-based approval

workflows, email-based approval workflows) sometimes allows humans to miss or not respond

to requests, that is human behavioral problem, or one of managing human interaction, and not

one that arises *because* of the use of email or any other automated electronic notification system.

Applicant further asserts:

> Additionally, instead, of applying known and routine computer and communications
> technology to organize human activity the electronic features of the claimed subject matter
> are **necessary** to provide the combination of configurability, control, and direct interface with
> the backend services of the service provider described in Applicant's claim. *See DDR
> Holdings, LLC v. Hotels.com, L.P.* 773 F.3d 1245, 113 U.S.P.Q.2d 1097 (Fed. Cir. 2014). In
> *DDR Holdings,* the court upheld the patent eligibility of claims "necessarily rooted in
> computer technology" that "overcome a problem specifically arising in the realm of computer
> networks." *Id.* at 1257. Here, the problem specifically arising in the realm of computer
> networks is e-mail based approval systems that mis-manage approval requests pertaining to
> provisioning, administering, or managing computing resources on behalf of backend services
> of the service provider, as explained in paras. 2 and 32 of Applicant's Detailed Description,
> for example.

Response: Applicant's remarks have been fully considered but they are not persuasive.

The Examiner disagrees. The solution in *DDR Holdings* was "necessarily rooted in computer

technology" because the invention recited a solution to a problem with hyperlinked navigation

between networked computers. Without the realm of hyperlinked navigation provided by

computer networks, the problem addressed by the invention in *DDR Holdings* would not have

existed. On the other hand, the problem addressed by the claimed invention, as discussed in the

detailed rejection, arises from human communication and behavior, as evidenced by portions of

Applicant's disclosure cited in the rejection. The claims in *DDR Holdings* were directed to a

problem that arose because of the underlying technology, whereas the claimed invention merely

invokes the technologies as a platform to handle communication, where the communication

problems are independent of the underlying technology. Accordingly, there are meaningful

differences between the genesis of the present invention and the genesis of the invention

considered in *DDR Holdings*, and therefore the reasoning in that case does not apply to the facts

of the present application.

Applicant further asserts:

On pp. 10, 14 and 91 of the latest office action, the office relies upon a rationale that "the
computer and interface are not particular, but are generic and defined by their functions,
which as discussed in the detailed rejection are similar to well-understood, routine, and
conventional functions." But, as laid out in the *April 19, 2018 Memorandum Regarding
Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject
Matter Eligibility Decision (Berkheimer v. HP, Inc.)*, an additional element is not well-
understood, routine or conventional unless the examiner supports the rejection in writing with
one of four explanations. 1. A citation to an express statement by the Applicant, 2. A citation
to a court decision discussed in MPEP section 2016.05(d)(II), 3. A citation to a publication
that demonstrates the well-understood, routine, conventional nature of the additional
elements, or 4. A statement that the examiner is taking official notice.

At least because the office has failed to distinguish between the portions of the claim that are
asserted to be abstract ideas and the portions of the claim that are asserted to be additional
elements, and at least because none of the above-noted criteria for assessing the additional
elements has been met by the merely conclusory statements on p. 10, 14 and 91 of the office

action, a prima facie showing of the additional elements being "well-understood, routine, and conventional activities" rationale has not been made.

Reconsideration and withdrawal of the rejection of independent claims 1, 6 and 17 is respectfully requested for at least these reasons.

<u>Response:</u> Applicant's remarks have been fully considered but they are not persuasive.

Applicant's assertion that "the office has failed to distinguish between the portions of the claim

that are asserted to be abstract ideas and the portions of the claim that are asserted to be

additional elements" is not supported. This remark fails to discuss the highlighted text of claim 1

showing the portions directed to an abstract idea in **bold** and the remaining portions being

directed to additional elements considered under Step 2B.

Furthermore, the Examiner finds the Applicant's remarks fail to show or explain what

element of a *prima facie* finding of ineligibility is missing from the rejection, or to otherwise

support with analysis the assertion that the rejection is "conclusory." The only argument set forth

is the assertion that a failure to "show[] the additional elements being 'well-understood, routine,

and conventional'" means that a *prima facie* showing of ineligibility has not been met; this is

incorrect. Whether the additional elements or a combination of elements is well-understood,

routine, and conventional is only one of eight non-exclusive considerations under Step 2B, as

discussed in MPEP § 2106.05. To the extent the prior rejection — which predates the

Berkheimer memorandum — asserted that elements or a combination of elements was well-

understood, routine, and conventional, the rejection correctly noted that these were functions that

had been identified as well-understood, routine, and conventional by the courts. The rejection

merely lacked the citations to the court decisions. Accordingly, the present rejection specifically

identifies the court decisions that support the prior findings, but the analysis of the claims has not

changed. Therefore, the remarks do not overcome the current rejection.

Applicant further asserts:

Dependent Claims 2-5, 7-16 and 18-20 Recite Patent-Eligible Subject Matter

Dependent claims 2-5, 7-16 and 18-20 include additional elements that are also patent-eligible. Applicant traverses the rejection of these claims for at least the reasons given above in regard to the claims from which they depend. However, at least because Applicant's representative has established that the independent claims are patent-eligible, further discussion of the dependent claim is not necessary at this time. Applicant reserves the right to present additional arguments.

<u>Response:</u> Applicant's remarks have been fully considered but they are not persuasive.

The remarks have not specifically discussed or traversed the analysis of any dependent claims.

Therefore the rejections are maintained.

Relevant Prior Art Not Relied Upon

The prior art made of record and not relied upon is considered pertinent to Applicant's

disclosure. The additional cited art, including but not limited to the excerpts below, further

establishes the state of the art at the time of Applicant's invention and shows the following was

known:

- A system manages the operations of an integrated communications provider. One aspect of the system is a work flow engine. The work flow engine decomposes the service model into sub-model components based upon whether crossing of plural networks is appropriate to provide requested telecommunication services and which service providers are available to provide service consistent with the location of the customer. The work flow engine also creates a telecommunications design from the sub-model components based on order rules of the service providers. The system automatically retrieves customer service records and preparing sales proposals based on those records. The system includes a gateway to incumbent local exchange carriers and trading partner service providers. The system incorporates features that automate comparisons between existing services and proposed services, optimizing on-net and off-net services, creation of cutover reports, issuance of service requests to local exchange carriers and trading partners, and alarming of failures of confirmations. (**Curtis**)

- Systems, methods, and computer-readable and executable instructions are provided for automatic cloud template approval. Automatic cloud template approval can include mapping a request to a chargeback package of a user, the request being for cloud service including a plurality of cloud service components. The automatic cloud template approval can include determining if the request is within the chargeback package of the user based on each of the plurality of cloud service components and, in response to the request being within the chargeback package of the user, automatically approving a cloud template to allocate the cloud service requested by the user. After approval resources will be allocated based on the availability, else resource analysis will be done and allocation will be done appropriately (**Polla PGPub**)

- An adaptive request handler (ARH) receives a virtual machine (VM) request from a user and determines whether to automatically approve the VM request using a tolerance that defines an allowable amount of deviation from preset resource specifications. In some embodiments, the ARH adaptively varies the tolerance based on one or more monitored factors, such as an aggregate system resource utilization by and/or a billing history of the user or a group that includes the user. In some

embodiments, the VM request is based on a template selected by the user from among a plurality of templates eligible for automatic approval, wherein a plurality of tolerances each defines an allowable amount of deviation from preset resource specifications of a respective one of the eligible templates. The ARH may, in some embodiments, vary each of the plurality of tolerances independently based on one or more monitored factors. (**Hiebert**)

- FIG. 3 provides a diagram illustrating an example of provisioning in accordance with an embodiment of the present invention. As illustrated in FIG. 3, upon receipt of a provisioning request from virtual private cloud (VPC) user interface 256, (asset) repository 262 is queried to extract all relevant metamodel information for the deployable assets (e.g., cloud-computing resource), such as a cloud-computing service have a specific topology. A simple topology may comprise a single cloud-computing resource (e.g., operating system running on a virtual machine) or a single tier of cloud-computing resource instances (e.g., LAMP server), combined to provide a cloud-computing service such as a web front-end. A more complex topology may comprise more than one tier of related cloud-computing resource instances such as a back-end database service tier, middleware tier, and web front-end tier, each tier performing a related service as part of delivery of an application to a set of users. The cloud model 109 is queried 280 to match the type(s) of cloud-computing resource instance with an appropriate provisioning request. (**Martinez**)

- Referring now to FIG. 1, an external view of one embodiment of a cloud computing system 100 is illustrated. The object storage service 100 includes a user device 102 connected to a network 104 such as, for example, a Transport Control Protocol/Internet Protocol (TCP/IP) network (e.g., the Internet.) The user device 102 is coupled to the cloud computing system 110 via one or more service endpoints 112. Depending on the type of cloud service provided, these endpoints give varying amounts of control relative to the provisioning of resources within the cloud computing system 110. For example, SaaS endpoint 112a will typically only give information and access relative to the application running on the cloud storage system, and the scaling and processing aspects of the cloud computing system will be obscured from the user. PaaS endpoint 112b will typically give an abstract Application Programming Interface (API) that allows developers to declaratively request or command the backend storage, computation, and scaling resources provided by the cloud, without giving exact control to the user. IaaS endpoint 112c will typically provide the ability to directly request the provisioning of resources, such as computation units (typically virtual machines), software-defined or software-controlled network elements like routers, switches, domain name servers, etc., file or object storage facilities, authorization services, database services, queue services and endpoints, etc. In addition, users interacting with an IaaS cloud are typically able to provide virtual machine images that have been customized for user-specific functions.

This allows the cloud computing system 110 to be used for new, user-defined services without requiring specific support. (**Leafe**)
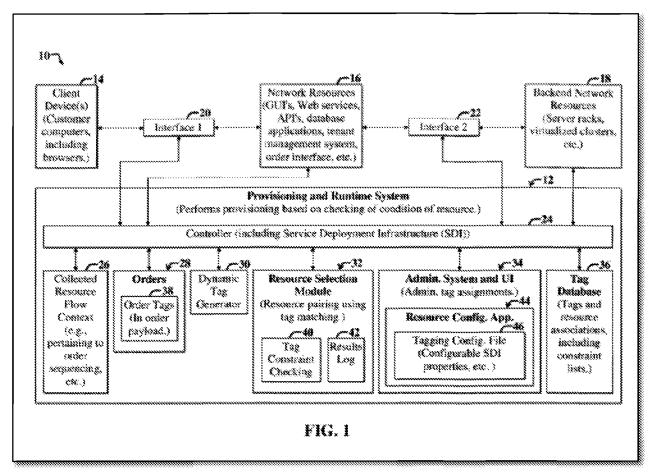
- The term " cloud computing service" means a service that enables convenient, on-demand/or network access to a shared pool of configurable computing resources (e.g., including networks, servers, storage, software, applications or services, storage, software, applications or services, etc.) that can be rapidly provisioned and/or released with minimal management efforts or interaction by the provider of the service. Cloud computing is the use of computing resources (hardware and/or software) that are delivered as a service over a network. For example, cloud computing entrusts remote services with a processing of data in a public cloud or a private cloud within an enterprise, a social network, big data analytics or electronic surveillance tracking or some mashup of two or more, a user's data including (e.g., friends, events, groups, application users, profile information and/or photos, etc.) on servers at remote locations, software and/or computation. Cloud computing also offers some advantages by allowing users to use infrastructure (e.g., servers, routers, processors or sub-processors, payment routers (routing a payment request), data centers, networks, and/or storages, etc.), platforms (e.g., middleware services and/or operating systems, etc.), and/or software (e.g., application programs, etc.) provided by cloud providers (e.g., Google.TM. Apps, Amazon.TM. Web Services, Dropbox.TM. and/or Salesforce.TM.) at low cost. Cloud-Intelligent Network (CIN), as used in the present invention refers to security that is built into the network instead of overlay technology. Cloud Services, as used in the present invention includes storage, managing and/or process a wide variety of data applications and/or other cloud services (e.g., collaborative cloud, custom cloud, data cloud, service cloud, sales cloud, tag clouds and/or other cloud services, etc.) using encryption technologies and/or filters to access data, encrypt and/or decrypt data, sync data, secure data storage and/or process data using cloud technology across many different networks and/or fiber optic communications from an endpoint accessed through multiple devices, browsers, operating systems, networks, servers, storage, software, applications or services integrated in a public cloud or a private cloud within an enterprise, a social network, big data analytics or electronic surveillance tracking or some mashup of two or more to prevent the unauthorized collecting, tracking and/or analysis of a user's personal data, communications data, identification data, location data and/or other information and/or data by a third party using cloud computing analytics for internet or mobile access or system using encryption technologies and/or filters to provide that personal data, communications data, identification data, location data and/or other information and/or data remains secure in the cloud while accessing data via a mobile or wireless device and/or cloud computing in (e.g., public cloud, private cloud, community cloud, regional cloud, social cloud, social cloud storage and/or hybrid cloud services, etc.) Communications Data, as used in the present

invention includes any transfer of electronic communications (e.g., sent through the Internet or fiber optic communications, email and/or communications via a network or service provider, etc.). ... Web-Based Cloud Services, as used in the present invention include an API for a service such as one involving payroll or credit card processing. There are many types of public cloud computing such as: Software as a Service (SaaS), Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Storage as a Service (STaaS), Security as a Service (SECaaS), Data as a Service (DaaS), Test Environment as a Service (TEaaS), Desktop as a Service (DaaS), API as a Service (APIaaS), Backend as a Service (BaaS). Infrastructure as a service consists of raw computing power, storage and/or network bandwidth. Platform as a service includes databases, development tools and/or other components required supporting the delivery of custom applications. Software as a service includes applications both general, such as word processing, email and/or spreadsheets; and/or specialized, such as customer relationship management (CRM) and/or enterprise resource management (ERM). The cloud providers manage the infrastructure and/or platforms on which the applications run in the protection of data, protection of unauthorized access and/or infrastructure they provide in storing and/or protection of user's data including (e.g., friends, events, groups, application users, profile information and/or photos, etc.) on servers at remote locations and/or delivering services hosted in the cloud for user's of social networks or mobile networks or wireless networks or cloud security for internet or mobile access, and/or the like. ... **(Heath)**

- Depending on the type of cloud service provided, these endpoints give varying amounts of control relative to the provisioning of resources within the cloud computing system 110. For example, SaaS endpoint 112a will typically only give information and access relative to the application running on the cloud storage system, and the scaling and processing aspects of the cloud computing system will be obscured from the user. PaaS endpoint 112b will typically give an abstract Application Programming Interface (API) that allows developers to declaratively request or command the backend storage, computation, and scaling resources provided by the cloud, without giving exact control to the user. IaaS endpoint 112c will typically provide the ability to directly request the provisioning of resources, such as computation units (typically virtual machines), software-defined or software-controlled network elements like routers, switches, domain name servers, etc., file or object storage facilities, authorization services, database services, queue services and endpoints, etc. In addition, users interacting with an IaaS cloud are typically able to provide virtual machine images that have been customized for user-specific functions. This allows the cloud computing system 110 to be used for new, user-defined services without requiring specific support. **(Mick)**

- Cloud computing consumers may access and perform customary cloud computing management services through a single web-based portal easily accessible to existing

and potential consumers. User Management framework 103 provides services such as user access control; account management; and service and support for the storefront and portal. Likewise, management of remotely coupled traditional data center components may also be performed through the portal. This portal may be implemented by the User Management framework 103 as, for example, a single web-based portal which is configured to provide direct access to the consumer to the various other sub-frameworks within the integrated cloud services framework. The User Management framework 103 may also include the functionality for providing the back-end service and support for users of the web-based portal. (**Kampas**)

- Virtual software bus 104 facilitates the transport of data between the applications and services operating within network container 102 and centralized orchestration framework 122, which can be hosted at network web services gateway 118 or in other suitable locations (such as a single server or a cloud service). Orchestration framework 122 behaves both as a proxy and broker for the messages from other applications and services running within network container 102. A single application programming interface (API) 120 is used by network applications 106, customized third party applications 108, native operating system (OS) applications 110, websites 112 and the associated services provided by these applications and websites to interface with definitions for the applications and services, and to provide information enabling orchestration framework 122 to create the context for a sequence of events that determines the brokering and chaining of API requests to the various backend systems associated with the applications and websites, such as application store 114, third party services platform 116 and network web services gateway 118. (**Smith**)

- FIG. 1 is a diagram illustrating a first example system and accompanying computing environment for facilitating resource provisioning using resource tags. ... The client devices 14 communicate with a first set of network resources 16 via a first interface 20. The first set of network resources 16 communicates with a second set of network resources, e.g., backend resources 18, via a second interface 22. ... For the purposes of the present discussion, a computing system or computing environment may be may be any collection of computing resources used to perform one or more tasks involving computer processing. An example enterprise computing environment includes various computing resources distributed across a network and may further include private and shared content on intranet web servers, databases, files on local hard discs or file servers, email systems, document management systems, portals, and so on. The terms "computing system" and "computing environment" may be used interchangeably herein. (**Liu** – see Figure 1 below)

FIG. 1

- Still referring to FIG. 3A, the CSB platform 202 includes a service fulfillment bridge (SFB) 248 (also referred to herein as the fulfillment bridge). The fulfillment bridge 248 is a 2-way bridge that transfers information from cloud service orders to fulfillment agent and that enables transfer of completion information and posting of relevant information about the fulfilled cloud service back to the order and the cloud service consumer (or broker) that placed the order. Examples of the relevant information include, not limited to, asset identifying information, end-user access URLs, login names, or other such information. In this respect, as discussed below in greater detail, the fulfillment bridge 248 enables transfer of provider account information to fulfillment agents for provisioning the correct provider and to the proper account with that provider for enabling appropriate charges and allocation of charges to the cloud service consumer requesting the cloud service. Advantageously, this enables a single fulfillment agent to fulfill one or more services from varying providers as well as for many customers. (**Sapuram**)

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Patrick McAtee whose telephone number is (571)272-7575. The

examiner can normally be reached on Weekdays 8:00am - 4:00pm ET.

Examiner interviews are available via telephone, in-person, and video conferencing using

a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is

encouraged to use the USPTO Automated Interview Request (AIR) at

http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Minnah Seoh can be reached on 571-270-7778. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PATRICK MCATEE/
Primary Examiner, Art Unit 3689

REMARKS

No claims have been added or canceled. Claims 1-20 are pending in the application. Reconsideration is respectfully requested in light of the amendment and the following remarks.

Claim 11 Recites Definite Subject Matter:

The Office Action rejected claim 11 under 35 U.S.C. § 112(b), second paragraph, as allegedly being indefinite. Applicant has clarified the claim as requested, to expedite allowance. Reconsideration and withdrawal of the rejection is respectfully requested for at least these reasons.

Claims 1-20 Recite Patent-Eligible Subject Matter:

The Office Action rejected claims 1-20 under 35 U.S.C. § 101 because the claimed invention is allegedly directed to non-statutory subject matter. Reconsideration and withdrawal of the rejection is respectfully requested for at least these reasons.

At the outset, the USPTO recently released notice of the *2019 Revised Patent Subject Matter Eligibility Guidance* that revises the procedures for determining whether a patent claim or patent application claim is directed to a judicial exception (laws of nature, natural phenomena, and abstract ideas) under Step 2A of the USPTO's *Subject Matter Eligibility Guidance*. At least to the extent that the *2019 Guidance* alters the analysis required for making a prima facie showing of ineligibility, and to the extent the office has not met those requirements, a prima facie showing of ineligibility has not been made.

While a rejection in-line with the analysis of the *2019 Guidance* has not been made by the office, Applicant proactively provides the following related analysis to expedite allowance.

The *2019 Guidance* revises Step 2A for evaluating whether the claim recites a judicial exception. Under the revised Step 2A, to determine whether a claim recites an abstract idea, examiners are now to:

> a)   Identify the specific limitation(s) in the claim under examination (individually or in combination) that the examiner believes recites an abstract idea; and
> b)   determine whether the identified limitation(s) falls within the subject matter groupings of abstract ideas enumerated in Section I of the *2019 Revised Patent Subject Matter Eligibility Guidance*.

In this case, the office has determined (on p. 4 of the latest office action) that the claim falls within the subject matter grouping of "certain methods of organizing human activity."

But, on p. 10 the *2019 Guidance* provides examples of abstract ideas, and none of those examples are anything like Applicant's claimed subject matter:

> *fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions).*

The above-noted examples are directed to organizing <u>human</u> activity. None of the above-reproduced examples pertain to *implementing an approval service that manages approval requests pertaining to provisioning, administering, or managing <u>computing resources</u> comprising the computing nodes <u>on behalf of the backend services</u>,* as recited in Applicant's claim.

Thus, at least because Applicant's claimed *wherein one or more of the plurality of computing nodes implement an approval service that manages approval requests pertaining to provisioning, administering, or managing computing resources comprising the computing nodes on behalf of the backend services* is not anything like the above-reproduced examples in the *2019 Guidance for* "certain methods of organizing human

activity," Applicant's claimed subject matter is not directed to certain methods of organizing human activity.

Additionally, *arguendo*, even if the subject matter is found to fall within the identified groupings, the guidance explains that a patent claim or patent application claim that recites a judicial exception is not "directed to" the judicial exception if the judicial exception is integrated into a practical application of the judicial exception. At least because the office has not provided a rationale for finding Applicant's subject matter not directed to a practical application, a prima facie showing of ineligibility has not been made.

Further, the figures and text of Applicant's Detailed Description explain the practical application. Applicant's claimed subject matter is an improvement to service provider computing systems. Applicant's claimed subject matter does not [simply] describe a computer implemented technique for "organizing human activity" but instead describes a particular system and a particular technique of provisioning, administering, or managing computing resources on behalf of backend services of a service provider.

The particular system and technique includes a combination of administrator-configurable approval templates and approval groups in combination with a backend interface between the approval service and the backend services of the service provider such that the approval service can receive requests directly from the backend services and facilitate responses to the approval requests via a more efficient, and more accurate approval technique that significantly reduces errors and reduces the number of computing resource provisionment, administration and management tasks that go unperformed. All of which describe a practical application.

Paragraph 2 of Applicant's Detailed Description explains some of the problems associated with prior approval systems (approval systems based on email exchanges without the improvements described in Applicant's claim).

> In addition, requests for approval to perform tasks or access resources are often sent from employees or managers to other employees, managers

and/or other authority figures using emails or text messaging. However, once the emails or text messages are sent, the sender does not have any control over them, nor any mechanism for determining whether or not the instructions were followed (or for determining the state of pending approval requests). In some cases, if there are multiple acceptable actions that an organization member can take in response to such a message, the sender might like to know which of these actions, if any were taken. In some cases, if an email or text message that includes instructions to perform a task (or respond to an approval request) is sent to multiple people (e.g., all of the members of a department or project team), the sender will typically not have any control over, or knowledge of, which, if any, of the recipients actually read the email or text message and/or perform the task (or respond to the approval request). Therefore, in an organization in which many such emails or text messages are exchanged between the members of the organization,
keeping track of what has or has not been done (much less by whom) can be difficult and error-prone. In addition, this approach can easily lead to an important task going unperformed (or an important approval request being ignored) while each member of the organization that received the message assumes that another member will perform the task (or respond to the approval request).

Para. 32 of Applicant's Detailed Description describes further technical improvements made by Applicant's claimed subject matter.

For example, if a request to access a software product is approved, this may trigger a workflow to deliver the software product to the requestor; if a request to subscribe to a service is approved, this may trigger a workflow for obtaining a subscription to that service (or a license for its use); or if a request to share information is approved, this may trigger a workflow that provides the information to a recipient or makes the information available for discovery by one or more potential recipients.

Thus, Applicant's claim describes a practical application that is an improvement to prior (e.g., e-mail-based) approval systems by combining administrator-configurable approval templates and approval groups with a backend interface between the approval service and the backend services of the service provider such that the approval service can receive requests directly from the backend services and facilitate responses to the approval requests via a more efficient, and more accurate approval technique that significantly reduces errors and reduces the number of computing resource provisionment, administration and management tasks that go unperformed.

Reconsideration and withdrawal of the rejection of independent claims 1, 6 and 17 is respectfully requested for at least these reasons.

Dependent Claims 2-5, 7-16 and 18-20 Recite Patent-Eligible Subject Matter

Dependent claims 2-5, 7-16 and 18-20 include additional elements that are also patent-eligible. Applicant traverses the rejection of these claims for at least the reasons given above in regard to the claims from which they depend. However, at least because Applicant's representative has established that the independent claims are patent-eligible, and at least because the dependent claims have not been analyzed in accordance with the *2019 Guidance*, further discussion of the dependent claim is not necessary at this time. Applicant reserves the right to present additional arguments.

CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is respectfully requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5924-92800/RCK.

Respectfully submitted,

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Date: February 11, 2019

In the Claims:

1. (Previously presented) A system, comprising:

a plurality of computing nodes of a service provider that collectively provide services to a plurality of clients of the service provider via a service provider network that is distinct from client networks of the plurality of clients, each of the computing nodes comprising at least one processor and a memory, and the services comprising one or more backend services provided for clients;

wherein one or more of the plurality of computing nodes implement an approval service that manages approval requests pertaining to provisioning, administering, or managing computing resources comprising the computing nodes on behalf of the backend services;

a backend interface for exchanging approval requests and approval results over a network between the approval service and the one or more backend services; and

an administrator interface through which a client's administrator interacts with the approval service to manage approval requests transmitted via the backend interface to the approval service over the network from one or more backend services provided for the client by the service provider, wherein the approval service is a different service than the one or more backend services that are sources of the approval requests;

wherein the approval service is configured to:

receive, through the administrator interface, a request to create an approval template, wherein the approval template defines one or more criteria for approval or denial of approval requests that are associated with the approval template;

create the approval template, wherein creating the approval template comprises storing a representation of the approval template on service provider resources for subsequent association with approval requests;

receive, through the administrator interface, a request to create an approval group, wherein members of the approval group are members of the client who are authorized to respond to approval requests that are associated with the approval group;

create the approval group, wherein creating the approval group comprises storing a representation of the approval group on service provider resources for subsequent association with approval requests;

receive, through the administrator interface, a request to associate the approval template and the approval group with one or more approval requests;

store information indicating an association between the approval template, the approval group, and the one or more approval requests;

receive, over the network from one of the one or more backend services, a given one of the one or more approval requests;

notify the members of the approval group that the given approval request has been received;

receive, from one or more of the members of the approval group, a respective response to the given approval request;

determine, based at least in part on the received responses and the one or more criteria, a result of the given approval request; and

transmit, via the backend interface over the network to the one of the one or more backend services, an indication of the result of the given approval request; and

wherein the one or more backend services are configured to:

trigger, based on receipt of the result of the given approval request, performance of an action associated with provisioning, administering, or managing one or more of the computing resources.

2.   (Original) The system of claim 1,

wherein the one or more approval requests are related to a particular product, portfolio, project, action, message topic, workflow, or request type; and

wherein at least one of the approval template or the approval group is associated with one or more other approval requests that are related to a different product, portfolio, project, action, message topic, workflow, or request type.

3.   (Previously presented) The system of claim 1, wherein the members of the approval group comprise one or more of:

an end user of the client,

a group of end users of the client,

a member of the client's network having a particular identity and access management role,

an identity and access management group, or

another approval group.

4.   (Original) The system of claim 1, wherein the approval template defines a sequence of two or more approval levels, and wherein each approval level defined by the approval template is associated with a respective approval group.

5.   (Previously presented) The system of claim 1,

wherein the one or more criteria comprise a voting strategy, and

wherein to define the voting strategy, the approval template specifies one or more of:

a number of affirmative responses required to approve an approval request,

a percentage of the received responses that are required to be in the affirmative to approve an approval request,

a number of negative responses required to deny an approval request,

a percentage of the received responses that are required to be in the negative to deny an approval request,

a number of members of an approval group whose responses are required to be received in order to determine a result of an approval request, or

a percentage of members of an approval group whose responses are required to be received in order to determine a result of an approval request.

6. (Previously presented) A method, comprising:

performing, by one or more service provider computers of a service provider network that implement an approval service that manages approval requests pertaining to provisioning, administering, or managing computing resources on behalf of one or more backend service of the service provider for a plurality of clients of the service provider, the service provider network distinct from client networks of the plurality of clients:

providing a backend interface for exchanging approval requests and results over a network between the approval service and a different service;

receiving, by the approval service, via the backend interface over the network from the different service on behalf of a client of the plurality of clients of the service provider, an approval request, wherein the approval request specifies a service provider product or service for which an authorization to access or utilize the service provider product or service is sought or an action for which authorization to perform the action is sought;

receiving a respective response to the approval request from each of one or more members of an approval group, wherein the approval group is associated, by the approval service of the service provider, with the approval request received on behalf of the client;

determining, dependent on the received responses and a pre-determined criteria for approval or denial of the approval request, a result of the approval request; and

transmitting, over the network to the different service, an indication of the result of the approval request, wherein the result of the approval request triggers performance of an action associated with provisioning, administering, or managing computing resources.

7.   (Previously presented) The method of claim 6,

wherein the pre-determined criteria comprise a pre-determined voting strategy;

wherein the method further comprises, prior to said receiving the approval request:

creating an approval template on behalf of the client of the service provider; and

associating the approval template with the approval request; and

wherein the approval template defines the pre-determined voting strategy.

8.   (Original) The method of claim 7, wherein at least one of the approval group or the approval template is associated with one or more other approval requests by the approval service.

9.   (Original) The method of claim 7, wherein the approval template defines a sequence of two or more approval levels, and wherein each approval level defined by the approval template is associated with a respective approval group.

10.   (Original) The method of claim 7,

wherein the approval group is associated with a first approval level defined by the approval template;

wherein another approval group is associated with a second approval level defined by the approval template; and

wherein the method further comprises, in response to receiving the approval request:

notifying the members of the approval group that the approval request has been received; and

notifying members of the other approval group that the approval request has been received.

11.   (Currently amended) The method of claim 7,

~~wherein the pre-determined criteria comprise a pre-determined voting strategy;~~

wherein the approval group is associated with a first approval level defined by the approval template;

wherein another approval group is associated with a second approval level defined by the approval template; and

wherein the method further comprises:

notifying the members of the approval group that the approval request has been received; and

notifying members of the other approval group that the approval request has been received in response to a pre-determined amount of time passing without receiving enough responses to the approval request from members of the approval group to enable the result of the approval request to be determined; and

wherein said determining the result of the approval request comprises:

receiving a respective response to the approval request from each of one or more members of the other approval group; and

determining, dependent on the responses received from the one or more members of the other approval group and a pre-determined voting strategy defined for the second approval level, the result of the approval request.

12.   (Original) The method of claim 7,

wherein said determining the result of the approval request comprises assigning a default result for the approval request in response to a pre-determined amount of time passing without receiving enough responses to the approval request from members of the approval group to enable the result of the approval request to be determined.

13.   (Previously presented) The method of claim 6,

wherein the client of the service provider consumes services provided by the

service provider, including the approval service and the different service;

and

wherein the method further comprises, prior to receiving the approval request:

receiving, from an administrator of the client, a request to create the

approval group on behalf of the client, wherein the request to

create the approval group comprises information indicating that the

one or more members of the client are authorized to respond to

approval requests that are associated with the approval group.

14.   (Previously presented) The method of claim 7,

wherein the client of the service provider consumes services provided by the

service provider, including the approval service and the different service;

wherein the method further comprises, prior to receiving the approval request:

receiving, from an administrator of the client, a request to create the

approval template on behalf of the client;

creating the approval template;

receiving, from an administrator of the client, a request to associate the

approval template with a specified product, portfolio, project,

action, message topic, workflow, or request type; and

associating the approval template with the specified product, portfolio,

project, action, message topic, workflow, or request type; and

wherein the approval request comprises a request for authorization to access or

utilize a product or service that is related to the specified product,

portfolio, project, action, message topic, workflow, or request type or to

perform an action related to the specified product, portfolio, project,

action, message topic, workflow, or request type.

15.   (Previously presented) The method of claim 6,

wherein the method further comprises notifying the members of the approval group that the approval request has been received in response to receiving the approval request; and

wherein said receiving the respective response to the approval request from each of one or more members of the approval group comprises receiving the respective responses to the approval requests from each of one or more members of an approval group in response to said notifying.

16. (Previously presented) The method of claim 15,

wherein said receiving the approval request comprises receiving the approval request in an actionable notification message that is managed by a notification service implemented on behalf of the service provider;

the method further comprising:

associating the approval group with a message inbox created by the notification service on behalf of the client of the service provider; and

wherein said notifying comprises posting the actionable notification message to the message inbox for subsequent retrieval by members of the approval group.

17. (Previously presented) A non-transitory computer-readable storage medium storing program instructions that when executed on one or more computers cause the one or more computers to implement an approval service, wherein the approval service is configured to:

present a backend interface through which one or more other services submit respective approval requests that pertain to provisionment, administration, or management of computing resources, the approval requests to be managed by the approval service on behalf of each of two or more clients of a service provider that provides at least the one or more other services for the two or more clients, wherein the two or more clients are consumers of the one or more other services;

receive, over a network from one of the one or more other services, via the backend interface, a given approval request, wherein the given approval request is related to a particular product, portfolio, project, action, message topic, workflow, or request type;

provide a mechanism through which each of one or more members of an approval group that is associated with the given approval request submits a respective response to the given approval request;

determine a result of the given approval request dependent, at least in part, on the respective responses to the given approval request;

receive, over the network via the backend interface, another approval request, wherein the other approval request is related to a different product, portfolio, project, action, message topic, workflow, or request type, and wherein the approval group is associated with the other approval request;

provide a mechanism through which each of one or more members of the approval group submits, over the network, a respective response to the other approval request;

determine a result of the other approval request dependent, at least in part, on the respective responses to the other approval request; and

transmit, over the network via the backend interface to the one of the one or more other services, an indication of the result of the other approval request, wherein the result of the approval request triggers performance of an action associated with provisioning, administering, or managing computing resources.

18.   (Original) The non-transitory computer-readable storage medium of claim 17,

wherein the given approval request is associated with a given approval template that defines a voting strategy for approval or denial of approval requests that are associated with the given approval template; and

wherein the other approval request is associated with another approval template that defines a different voting strategy for approval or denial of approval requests that are associated with the other approval template.

19.   (Original) The non-transitory computer-readable storage medium of claim 17,

wherein at least one of the given approval request or the other approval request is associated with an approval template that defines a sequence of two or more approval levels;

wherein the approval group is associated with a first approval level defined by the approval template; and

wherein the approval template defines:

a voting strategy for approval or denial of approval requests that are associated with the approval template at a first approval level and a different voting strategy for approval or denial of approval requests that are associated with the approval template at a second approval level defined by the approval template; or

a second approval group that is associated with the second approval level defined by the approval template.

20.   (Original) The non-transitory computer-readable storage medium of claim 17,

wherein, in response to the determination of the result of the given approval request or the determination of the result of the other approval request, the approval service is configured to initiate the performance of a particular action or workflow by the one of the one or more other services.