

## USPTO PATENT SUBJECT MATTER ELIGIBILITY ROUNDTABLE 2 COMMENTS

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### Introduction:

We have a word for when previously useful structures, in response to certain changes in their environment, grow rapidly out of control, consuming more and more space & resources and eventually undermining the systems that sustain them.

### There is a cancer in the patent system, and it's centered on information inventions:

My name is Martin Snyder. I am a principal/founder of a successful, 19 year-old Midwestern niche software company that employs around 50 people. The single greatest obstacle to our growth, and the source (by far) of our largest unanticipated expenses, has been the United States patent system. Our story can't be unique, and no stakeholder should tolerate the sickness in the system that gave rise to it.

I am not a lawyer, but I have personal experience with full-blown patent litigation, settlement negotiations with multiple patentees, and the pursuit/underwriting of IP insurance. As sometimes happens with persons who develop dangerous medical conditions, they become vigilant learners about their particular disease, from time-to-time even rivaling doctors and other trained experts in their knowledge and dedication to improving treatment and finding cures. Such has been my journey toward insight on how to best manage the problems that information inventions present to our patent system.

In presenting these comments, I will summarize my ideas first, and then answer the individual questions presented in the Federal Register / Vol. 81, No. 200 / Monday, October 17, 2016.

### Why information inventions require judicial construction:

Because I am writing to an expert audience in these comments, I need not establish the background of the four statutory categories of "inventions patentable" identified in Section 101, nor will I cite all of the key precedential cases that built-up the current state of jurisprudence in subject matter eligibility, except where needed to illustrate a concept.

It's axiomatic that patents are for *things*, not *ideas*. While it's true that each thing in the world is also represented by ideas about that thing, there is not much controversy in separating machines, manufactures, and compositions of matter from the attendant ideas and abstractions associated with those kinds of inventions. In contrast, with processes (interchangeably referred to as methods), there

can be great difficulty in separating ideas and abstractions from related physical manifestations, if any. While it may be a matter of philosophical debate if a patent eligible method *should* require a physical, tangible result (the so-called Machine or Transformation test or “MoT”), it’s no longer a legal debate.

The Supreme Court in *Bilski v. Kappos* (2010) found no statutory basis on which to limit patent eligible methods to the MoT, finding that it’s not permissible to add or limit the words of Congress in such a fashion, nor is it knowable that all new, useful inventions in new technologies would require such a result. I suggest, however, that every method patent must have *some identified result*, because a goal or intended result is inherent in the word “process”. One cannot rationally speak of a “process” without having some goal or intention in undertaking a given set of steps.

In current patent litigation procedure there is no formal phase where the meaning of a patent’s claims, including the nature of the results of a process, are construed as a matter of law. The need for such a phase has been evident since the advent of the information age. In *Markman v. Westview Instruments* (1996) the Supreme Court established that the *meanings of the words* in patent claims were matters of law, and since that ruling the so-called *Markman* phase has become a bedrock step of nearly every patent litigation; the resulting *Markman* opinion is often the dispositive step in patent cases. The *Markman* procedure involves mixed issues of fact and law, providing an adversarial stage where both sides may file papers, present technology tutorials, and otherwise create a reasonable record from which the meanings of the words in the claims can be established.

This lack of any judicial requirement to conduct a formal construction of the *subject matter of patent claims* (not merely the words) as a matter of law is notably surprising because it is apparently unbalanced by Section 112 (b) of the patent act, which requires that patent claims “particularly point out and distinctly claim the subject matter which the inventor or a joint inventor regards as the invention.” A legal situation where the putative inventor must meet this requirement, while accused infringers may not obtain judicial construction of that putative subject matter seems to create a large, asymmetric, and subjective gap in subsequent proceedings regarding those claims.

What has happened is that an ad-hoc substitution for this missing construction step has developed in the so-called *Alice/Mayo* framework (so named for two seminal Supreme Court cases on subject matter eligibility). In brief, the *Alice/Mayo* test is a two+ part inquiry where first, patent claims are reviewed to determine if they meet any of the judicial exceptions to eligibility (discussed in detail below) and second, if they do, to determine if “something more” is present which may render the claims eligible as inventions.

A great point of controversy with *Alice/Mayo* is the apparent overlap between *Alice/Mayo* Section 101 subject matter determinations that apparently implicate novelty and obviousness, and the workings of Section 102/103/112 patentability determinations that formally define how novelty, obviousness, and completeness of description are to be determined, both at the USPTO and in litigation.

In American patent law, all of the Section 102/103/ 112 determinations are arrived upon by first creating a hypothetical person having ordinary skill in the pertinent art of the invention (a “PHOSITA”), and relating that hypothetical person’s hypothetical responses to that prior art. Information inventions especially can confound the making of this hypothetical person because many arts and endeavors may

be implicated in one set of claims. The utility of information processing and computer implemented inventions often arises because the information being processed models or represents real-world objects and events. That modeling is infinitely more fluid and variable than models and representations built-up in the physical world. For a simple example, a novel set of computer implemented algorithms to model weather forecasting for crop management may reasonably involve climate scientists, computer programmers, physicists, mathematicians, computer interface/display designers, farmers, botanists, and others. There are literally hundreds of thousands of in-force patents that essentially describe an established real-world activity + modeling it in a computer environment.

Unfortunately, the evolution of the *Alice/Mayo* jurisprudence did not result in a distinctive construction phase to identify the meaningful subject matter of the claims as a whole, leaving parties to depend on 12(b)6 motions to dismiss, which drastically limit the ability to create a record or reasonably explore issues without risking premature summary judgement for either party and inevitably result in forum-specific findings.

To put it in basic terms: one cannot fairly and repeatedly apply Sections 102/103/112 without a judicially construed invention, because that construction is necessary to model a proper PHOSITA. Section 101, in contrast, does not require a hypothetical PHOSITA, because subject matter eligibility is perceived to be an intrinsic element of a putative invention. The concerns of many observers about the conflation between eligibility and patentability could be greatly relieved by a separate procedural phase to construe the proper prior art relationships and the subject area of direct contribution of the inventor, in order that the most-central hypothetical PHOSITA may be formed for the subsequent necessary statutory analysis.

To summarize thus far: 1) Process patents should, by the meaning of the word “process”, have the nature of their intended result construed. 2) Current litigation procedure is deficient because there is no formal phase to construe an invention, and thus bound the subsequent 102/103/112 inquiry to the art or endeavor where the actual invention is located within patent claims, and 3) the current *Alice/Mayo* regime in reality recognizes that need, and today is working as a quasi-construction step, but in dramatically unsatisfying ways because of the legal limitations of 12(b)6 motions and the idiosyncratic ideology of each district court judge on subject matter eligibility.

### **The meaning and application of the Judicial Exceptions:**

The Supreme Court’s precedents provide three specific exceptions to the four statutory categories of inventions patentable enumerated in Section 101: Laws of nature, natural phenomena, and abstract ideas. The very existence of these long standing exceptions is another matter of great controversy.

Many observers believe there is no basis in the patent law to justify them; that they contravene the intent of congress and should be done away with. Others believe that the exceptions may have a legitimate role, but are not currently applied in a reasonable, consistent way. The “abstract ideas” exception is especially reviled by many because the term has never been judicially defined, and as the first part of the two-part *Alice/Mayo* test, the openness of the term essentially implements a “know it when they see it” judicial standard.

I believe that the key to understanding the exceptions and their application is that they share an overriding purpose: to ensure that the contribution of the putative inventor *balances* the reward of the temporary monopoly that a patent grant provides. I believe the exceptions should be understood as expressions of the equitable maxim of *aequitas est quasi aequitas*, (equality is equity). That need for that balance means that the judicial exceptions are effectively acts of equitable discretion by the court.

Some may believe that the separation of powers should not allow the Supreme Court to import equitable maxims into the patent law, but the Supreme Court has indeed based modern-era patent case decisions on equity, including in *eBay Inc. v. MercExchange* (2006) where “traditional equitable principles” were explicitly identified as a basis of the decision.

Thomas Egerton, writing as Lord Chancellor in *Earl of Oxford's Case* (1661) observed: “*The cause why there is a Chancery is, for that men's actions are so diverse and infinite, that it is impossible to make any general law, which may aptly meet with every particular act, and not fail in some circumstances*” Locating the judicial exceptions in equity further suggests that the inventor’s contribution should be judicially construed *prior* to the direct application of law; that the proper time to construe subject matter eligibility is at the beginning of a litigation.

### **Defining Abstract Ideas:**

In the same way that “processes” stand-out from the other three statutory categories as a point of controversy, “abstract ideas” stand-out from laws of nature & natural phenomena as the point of greatest concern by stakeholders of all stripes in determining subject matter eligibility. An abstraction or idea may only be an aspiration or observation, rather than a new, useful, and actually realized *thing* in the world. A constant refrain from *Alice/Mayo* critics is a demand that “abstract ideas” be defined or bounded. I suggest that there are at least two dimensions to the “abstract ideas” inquiry; those aspects of a purported invention that are intrinsically abstract for patent eligibility purposes, and those aspects that relate to a purported invention in relation to the location of novelty within a patent claim.

The dictionary definition of abstract includes: *existing in thought or as an idea but not having a physical or concrete existence*. In the vernacular, abstract is often a synonym for intangible. *Bilski* established that process patents require no physical manifestation, so mere intangibility cannot preclude eligibility.

The root of the word is the Latin 'abstrere', meaning 'to draw away from'. I suggest that an abstraction can only exist in relation to a human mind. If there is no human consciousness to host an abstraction, it cannot exist. At its most essential, an “abstract idea” must include the drawing of meaning from information; a drawing of information for further processing in the mind of an individual person.

The act of drawing information into a human mind is unequivocally an act of consumption. Consumption is the precise moment when the degree or character of an abstraction becomes 100%, regardless of the a priori degree or character of the abstraction. I therefore suggest that when a method patent’s result is construed to be an item (or items) of information consumed by human actors, that method may not be eligible subject matter. This statement of doctrine can be implemented

judicially, or by statute, most likely by modifying Section 100(b) to read: The term “process” means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material. The term “process” excludes any process which results in information consumed by human beings, excepting processes that improve information processing without regard to the particular content or meaning of the newly processed information”.

This consumption of information test would be intrinsic and very simple to apply- appropriate even for a 12(b)6 motion. It would invalidate the vast majority of “do it on a computer” claims, business method claims, and diagnostic correlation claims that are the cause of so much of the difficulty with information and computer-implemented inventions.

The test would allow for new, useful, and non-obvious information results to be consumed by non-human actors while maintaining subject matter eligibility, which would prevent a feared closing-off of the patent system to a whole range of new and potentially important robotic and machine-intelligence technologies.

In those instances, and others where the location and context of the novelty of a putative invention within claims would be disputed and require construction, the current *Alice/Mayo* test could be more formalized and carried-out just as claim construction is now conducted.

To summarize my concepts about subject matter eligibility:

- 1) Process patents should, by the meaning of the word “process”, have the nature of their intended result construed.
- 2) Patent case procedure should expand the *Markman* step to include an adversarial and thorough subject matter inquiry both to establish eligibility and bound the formation of the appropriate PHOSITA for each accused infringer.
- 3) The Judicial Exceptions should be recognized as expressions of equity and precede adjudication of questions of law or facts.
- 4) If a process patent’s result or utility is processed information consumed by human beings, the method should not be eligible for patenting.
- 5) If a process patent’s result or utility is partially or wholly found in information consumed by non-human actors, the method may be eligible, subject to construction under *Alice/Mayo*.

I believe these elements would greatly improve the function of the US patent system in the information age, promote greater justice, avoid conflict with other Constitutional rights (such as freedom of expression) and lower the costs of litigation by narrowing the subsequent 102/103/112 inquiries for both the patentee and accused infringers.

#### **Answers to the Federal Register Questions:**

These answers incorporate and expand in places on the ideas presented above.

*1. How has the Supreme Court's interpretation of 35 U.S.C. 101 in the past several years affected the enforcement of patents and the development of subject-matter eligibility law?*

*In your response please: a. Identify the scope of the problem, including specific examples; b. identify any legal and/or technical inaccuracies; c. suggest possible changes and/or solutions to any problems with section 101; and d. provide explanations and/or any legal, policy, or economic analyses supporting your comments.*

The answer to this question is almost entirely ideological. Some will say the effects have been catastrophic, some will say they have been helpful; others will say helpful, but have not gone far enough to solve the problems that stimulated the various subject matter cases.

My position is that the changes have been beneficial to the many defendants who were able to avoid protracted litigation, but not helpful to the pursuit of justice because 1) the results in district courts and at the USPTO are unpredictable and idiosyncratic and 2) the Supreme Court and the CAFC remain highly divided about key aspects of information inventions and the meaning of "abstract ideas" in the patent context.

Generally, the key subject matter eligibility controversies appear to be confined to the category of processes, as there appears to be wider agreement about which kinds of subject matter comprise machines, compositions of matter, and manufactures. Because Section 100 (b) controls the meaning of processes, I believe that Section 101 is sufficient, and any needed statutory change would be made in 100(b), also discussed supra.

*2. Should the patent statute be amended to further define the statutory categories of invention, i.e., process, machine, manufacture, and composition of matter? If so, please identify possible legislative changes, including which sections of title 35 should be amended, e.g., sections 100 or 101.*

Yes, section 100(b) off title 35 should be modified to read:

(b) The term "process" means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material. The term "process" excludes any process which results in information consumed by human beings, excepting processes that improve information processing without regard to the particular content or meaning of the newly processed information".

*3. Do you think there should be exceptions to patentable subject matter? a. If no, how should section 101 or other patentability provisions operate to address subject matter currently considered to fall within judicial exceptions? b. If yes, please explain whether the judicial exceptions are sufficient in scope and if not, please identify other exceptions that should be included in the determination of patent eligible subject matter.*

The judicial exceptions appear to exist in a nether region of patent law. There is no apparent statutory basis for the exceptions, yet some form of these exceptions has existed for the entire history of patent

litigation and prosecution in the United States. The Supreme Court wrote in *Bilski v. Kappos* 561 U.S. 593, 601–02 (2010) that “while these exceptions are not required by the statutory text, they are consistent with the notion that a patentable process must be “new and useful.” And, in any case, these exceptions have defined the reach of the statute as a matter of statutory *stare decisis* going back 150 years”.

I believe that the subject matter eligibility of a patent has both an equitable component and a law component, and that much of the difficulty with subject matter eligibility stems from a failure to perceive the differences and locate them properly in legal procedure. The equitable analysis must precede the law analysis, because you can’t apply the statutory requirements for inventions to subject matter that is equitably not an invention or where the proper PHOSITA is in question.

The natural phenomena exception exists because things that nature has produced are either not new, or have been in “public use” prior to the patent application. These facts directly relate to the proportional contribution of the purported inventor. The vernacular construction of “law of nature” does not (and need not) necessarily match the definition of “law of nature” in the scientific community. The equitable construction of a “law of nature” for patent purposes should include natural relationships that may not be laws in the scientific sense, but are in fact, items of useful information. An excellent example is the recent *Sequenom v. Ariosa* litigation, where the item of information that undergirds the purported invention was the discovery of the fact that maternal plasma contains fetal DNA, which could then be used for pre-natal diagnostic purposes using entirely conventional methods. The contribution of the purported inventor was to discover the relationship, but the contributions of many other inventors was required to give that item of information utility or any relation to *things* in the world.

Equitably, the Sequenom discoverers did not contribute enough to balance the value of the patent monopoly to the public. The Supreme Court wrote in *Funk Bros. Seed Co. v. Kalo Inoculant Co.* 333 U.S. 127 (1948) that the “qualities of these bacteria, like the heat of the sun, electricity, or the qualities of metals, are part of the storehouse of knowledge of all men. They are manifestations of laws of nature, free to all men and reserved exclusively to none.”

The same kind of equitable analysis applies to the abstract ideas exception; we cannot equitably allow patent monopolies on things that occur within the minds of human beings, because the utility of those occurrences is both unknowable and *sui generis* to every person. In contrast, the quality of utility of any particular information to non-human actors may equitably be presumed to be identical to each.

The single greatest source of confusion and error regarding “abstract ideas”, in my opinion, is not realizing that the equitable analysis of abstraction is different from (and must precede) the legal analysis of abstraction, which should be based on longstanding and finely balanced title 35 patentability requirements of novelty, non-obviousness, and complete description, and which can only be applied to actual inventions.

*4. Should the patent statute be amended to define the judicial exceptions? If so, please suggest possible legislative changes, including which sections of title 35 should be amended, e.g., sections 100 or 101.*

I do not think so, because the judicial exceptions are not actually located in law. I do think Section 100

(b) should establish in law that information consumed by human beings is not a patentable result of a method.

*5. If you identified other exceptions in your response to 3(b), please suggest possible legislative changes, including which sections of title 35 should be amended, e.g., sections 100 or 101.*

I identified no further exceptions.

*6. Other jurisdictions, e.g., Europe and Japan, provide examples of subject matter that does not qualify as an invention or discovery for purposes of patent eligibility. For example, in Europe, scientific theories, methods for performing mental acts, computer programs per se, and presentations of information are not regarded as inventions. a. Do you think that title 35 should be amended to revise the definition for the term “invention” and/or provide a definition for the term “discovery” along with specific examples of subject matter that should not be treated as an invention and/or discovery? b. If so, please suggest possible legislative changes, including which sections of title 35 should be amended, e.g., sections 100 or 101.*

That which is a “computer program per se” or a “presentation of information”, like the concept of a “technical solution to a technical problem” is highly open to interpretation and the idiosyncratic views of the jurists involved. In my opinion, other jurisdictions should also treat the consumption of information by human beings as the clear dividing line of patentable subject matter in statute, and proceed from there with analysis of the prior art for obviousness, utility, complete description, and novelty. It may be preferable to incorporate the EPC and PCT Rule 5.1(a)(iii) to specify that the invention as claimed must be disclosed in such terms that the technical problem, even if not expressly stated as such, and its solution can be understood. This implies that all inventions can be expressed in terms of a solution to a technical problem. Expressing inventive contribution in terms of a solution constitutes a way of assessing inventive step, but obviousness doctrine is beyond the scope of these comments.

*7. Does the concept of preemption, either separately or in the context of the Mayo two-step framework, capture useful insight in guarding against the issuance of overly broad patents? If so, please suggest possible legislative changes to capture those insights.*

The concept of preemption is clearly an equitable judgement related to the contribution of the inventor and should precede the statutory construction of the scope of a particular claim. This is important because the statutory construction requires a notional person having ordinary skill in the art to determine novelty and non-obviousness, yet information inventions must often be narrowed to an equitable understanding of which art or which area of human endeavor is actually implicated by the claims. We cannot model a PHOSITA unless we already have placed the invention equitably into an art or endeavor to analyze. The purported inventor and the USPTO may select a suitable art, but the adversarial construction of the proper scope of the arts / endeavors must be equitably decided, if challenged, before statutory analysis may proceed. The *Markman* procedure in a sense partially served this step under the guise of claim construction prior to the *Alice/Mayo* decisions.

*Patentable Subject Matter in the Life Sciences*

8. What does the term “discovery” in sections 100 and 101 mean, and to what extent should a “discovery” be eligible for a patent? Please provide specific examples.

A “discovery” is the uncovering of previously unknown information. The useful application of a discovery may be the subject of a patent, if that useful application is not the mere disclosure of the newly gained information.

9. What does the term “invention” in sections 100 and 101 mean, and to what extent should a non-naturally occurring product of human ingenuity qualify as an “invention” to be eligible for a patent? Please provide specific examples.

An “invention” is a new, non-obvious, fully described and useful machine, composition of matter, manufacture, or process, so long as the useful result of the process (the potential infringement) is not arrived at by consumption of information by human beings. Invention need not require a momentary insight or be the result of long efforts or even be unexpected in any way. It must reflect an equitable contribution of the inventors that balances the value of the temporary monopoly of a patent.

10. To what extent should products that have been isolated from their natural surroundings as a result of human ingenuity be eligible for a patent? Please provide specific examples as well as scientific explanations and/or legal analyses to support your response.

If the process of isolation is new, useful, and non-obvious, a patent should issue on the process. The result of the isolation should not be a patentable composition of matter claim unless the new composition varies from the natural composition in a material way. The mere fact of isolation using conventional methods would be *an item of information*, and items of information are not the proper subjects of patents unless they are new, useful, non-obvious, fully described and only consumed by non-human actors.

11. To what extent should a “diagnostic method” be eligible for a patent? Please provide specific examples.

The answer to question 10 is identical to the correct answer to this question 11.

12. Are there lines that can or should be drawn scientifically or legislatively between different types of compositions of matter for purposes of obtaining patent protection (e.g., between human genes and genes of other species)?

No. The resulting composition may not be an unaltered product of nature, but there should not be arbitrary restrictions not supported by statute in the available forms of new, non-obvious, fully described compositions of matter.

13. What particular inventions or specific types of technologies that should be patent eligible are not patent eligible, or are likely to be challenged as patent ineligible, under Mayo/Myriad? Please provide

*specific examples and explain why you believe claim drafting strategies will not be sufficient to avoid patent eligibility problems.*

I know of none.

14. Should patents be available for methods that do not involve a machine or a transformation? If so, please provide specific examples.

Yes. A good example is found in *Stanacard v. Rubard*, (Southern Dist. of New York 2015).

The process involved a clever algorithm for routing a long distance call. The District Court noted that "*Neither caller ID nor the process by which the call actually gets forwarded to its intended recipient (over what telephone network, using what switching facilities) is claimed.*" The District Court found, under the *Alice/Mayo* doctrine, that the process combined two activities that have long been performed by both humans and machines -- caller ID and call forwarding -- such that the recipient of a local call (area code plus seven digit number) uses caller ID to recognize the incoming caller, then forwards the incoming call to the intended recipient by associating the assigned incoming telephone number with a particular recipient's telephone number.

Expert testimony established that "*[t]he idea behind the '156 patent -- combining the customer's telephone number and the dialed local access number into a unique 20-digit combination is elegant, simple, beautiful but by no means obvious; none of us working in this field came up with the process set forth in the '156 patent, and not for the lack of trying.*" The expert also testified that, "*[t]he process disclosed by the '156 patent made an immediate and loud splash in the market place of prepaid telecommunications and garnered a market share away from others.*"

Because the activity was well known and there was no further inventive concept needed to implement the process, it was found abstract and ineligible under §101. That result seems inconsistent with the policy purposes of a patent system to encourage technical improvements. Under my proposed test, the consumer of the information was telephone switching equipment (a non-human actor) , so the process should have been patent eligible.

15. *If you support some form of "machine or transformation test," please identify the best expression of such a test. a. Should incorporation of the use of a general purpose computer be enough to satisfy the "machine" part of the test? If not, what more should be required? b. Should a transformation that occurs in the human body as a result of a claimed process be enough to satisfy the "transformation" part of the test? If not, what more should be required?*

I believe that absent new lawmaking from Congress, that *Bilski* answered this question in the negative.

16. *To what extent should an invention that involves a business method be eligible for a patent? Please provide specific examples. Patentability of Software/Computer Related Inventions*

To the extent that non-human actors are the information consumers. See question 14 for an example.

*17. To what extent should an invention that involves computer software be eligible for a patent? Please provide specific examples.*

This answer is the same as questions 16 and 14.

*18. What mechanisms, other than the judicial exceptions, can be used to prevent issuance of overly broad software or computer-related patents that cover wide swaths of economic activity? Do you think that other provisions of title 35 (enablement, written description, definiteness, novelty, non-obviousness) could be used more effectively to achieve this goal? If not, please explain why.*

Enablement, written description, definiteness, novelty, and non-obviousness may only be considered with a construed PHOSITA and an invention where the inventor's contribution is balanced by the value of a government sanctioned temporary monopoly. That which occurs within the human mind must be beyond the reach of any law or restriction both under the Constitution and my understanding of universal human rights. That which passes between human beings in the form of speech or association may not be restricted without a compelling governmental interest, and the mere encouragement of innovation is insufficient to undergird such restriction.

My thanks to all who put together and participated in these roundtables, and who are working toward the betterment of this most important system in our government. I hope that the insights gathered are influential in due course, and that the unnecessary injustice generated as collateral costs of our patent system is steadily reduced to the lowest practical levels by a better handling of information inventions in this information age that holds so much potential to improve life in our world.