LANDO & ANASTASI

The Fate of Software Patents in an Abstract World

Craig R. Smith
Lando & Anastasi, LLP
April 2017

A 101 Story – The Eligibility Wars

- *Pre-Alice*
  - Section 101 was seldom used to invalidate patents
  - Software companies complained about patent assertion entities (aka, trolls) and their use of software patents
- *Alice*
  - The Supreme Court articulates a test for determining patent eligibility
- *Post-Alice*
  - Courts and the Patent Office struggle to apply *Alice* and many software patents are invalidated or never issued
  - Industry groups complain that the courts and PTO have gone too far

Post-Alice Mess

"It's the worst mess I've seen in the 30 years I've been practicing law."

– *David Kappos (former Director of U.S. PTO)*

Patent Statute – 35 U.S.C. § 101

- "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." 35 U.S.C. § 101
  - The "subject-matter provisions of the patent law have been cast in broad terms to fulfill the constitutional and statutory goal of promoting 'the Progress of Science and the useful Arts.'"
    - *Diamond v. Chakrabarty* (1980) (quoting U.S. Const. art. I, § 8, cl. 8)

Judicial Exceptions

- Courts have created exceptions to the broad language of Section 101
- You cannot obtain patent protection for
  - Laws of Nature
  - Physical Phenomena
  - Abstract Ideas
- These concepts represent the "basic tools of scientific and technological work" *Gottschalk v. Benson* (1972)
  - Allowing inventors to patent these tools would likely "impede innovation more than it would tend to promote it" *Mayo Collaborative Services v. Prometheus Labs.* (2012)

Pre-Alice: A Long Time Ago …

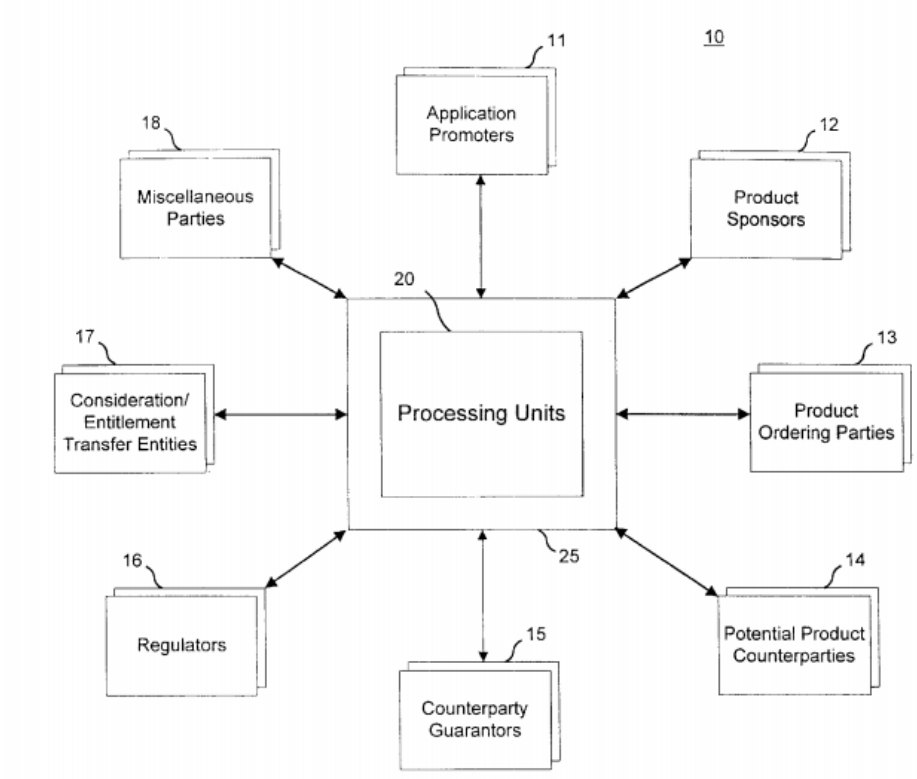
- ***Gottschalk v. Benson*** (Sup. Ct. 1972)
  - Ineligible formula to convert binary-coded decimal numbers into true binary numbers
  - *"The mathematical formula involved here has no substantial practical application except in connection with a digital computer, … the patent would wholly pre-empt the mathematical formula and … would be a patent on the algorithm itself."*
- ***Parker v. Flook*** (Sup. Ct. 1978)
  - Ineligible method for updating an alarm limit
  - *"Even though a phenomenon of nature or mathematical formula may be well known, an inventive application of the principle may be patented. Conversely, the discovery of such a phenomenon cannot support a patent unless there is some other inventive concept in its application."*
- ***Diamond v. Diehr*** (Sup. Ct. 1981)
  - Eligible method for operating rubber-molding process
  - *"In determining the eligibility of respondents' claimed process for patent protection under § 101, their claims must be considered as a whole. It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis."*

The Courts Strike Back

- ***Bilski v. Kappos*** (2010)
  - Claims covered the abstract idea of hedging against the financial risk of price fluctuations
  - "concept of hedging" is "a patent-ineligible abstract idea"
- ***Mayo Collaborative Services* v. *Prometheus Laboratories, Inc.*** (2012)
  - Method for administering and determining level of drug in bloodstream held unpatentable
  - Framework for determining patent eligibility
    - Are the claims directed to a patent-ineligible concept?
    - Do the elements of the claim ensure that patent "amounts to significantly more than a patent" on the ineligible concept?

Alice Corp. v. CLS Bank (2014)

- Claims to a computer implemented scheme for mitigating settlement risk cover an abstract idea and are not patent-eligible



Alice Test for Patent Eligibility

- **Step 1:** Are the claims directed to a patent ineligible concept (for example, an abstract idea)?

- **Step 2:** If so, do the elements of the claim individually or as an ordered combination transform the nature of the claim into a patent eligible application?

Alice Test for Patent Eligibility

- **Step 1:** Are the claims directed to a patent ineligible concept (for example, an abstract idea)?
  - "the claims at issue are drawn to the abstract idea of intermediated settlement."
  - "the concept of intermediated settlement is 'a fundamental economic practice long prevalent in our system of commerce.'"
- **Step 2:** If so, do the elements of the claim individually or as an ordered combination transform the nature of the claim into a patent eligible application?
  - The claims "merely require generic computer implementation" and "fail to transform that abstract idea into a patent-eligible invention.

Alice: A Premonition

- "we tread carefully in construing this exclusionary principle lest it swallow all of patent law"
- "At some level, 'all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.'"

A Disturbance in the Law

- Lack of predictability
- The Supreme Court's test for eligibility is difficult to apply
  - What is the abstract idea?
  - What is required to "transform the nature of the claim" or provide "significantly more" than the abstract idea?
- Matching Problem
  - In the absence of clear rules, courts and the Patent Office look to prior decisions to find the best match for the current set of facts
  - There are simply too few cases holding software patents valid

Federal Circuit Invalidates Many Patents Under Alice

	Total	Total Invalid Under §101	% Invalid
Fed. Ct. Decisions	436	292	67.0%
Federal Circuit	77	70	90.9%
District Courts	359	222	61.8%
Patents	873	518	59.3%
Claims	22227	14391	64.7%
Motions on Pleadings	244	152	62.3%
PTAB CBM Institutions	152	129	84.9%
PTAB CBM Final	88	86	97.7%
PTAB PGR	7	3	42.9%
ITC	12	5	41.7%

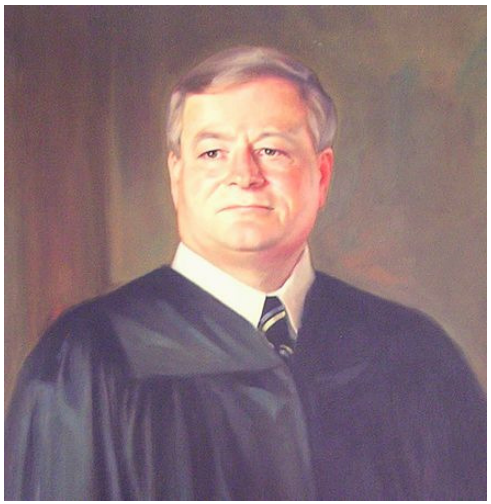
As of 2/28/17

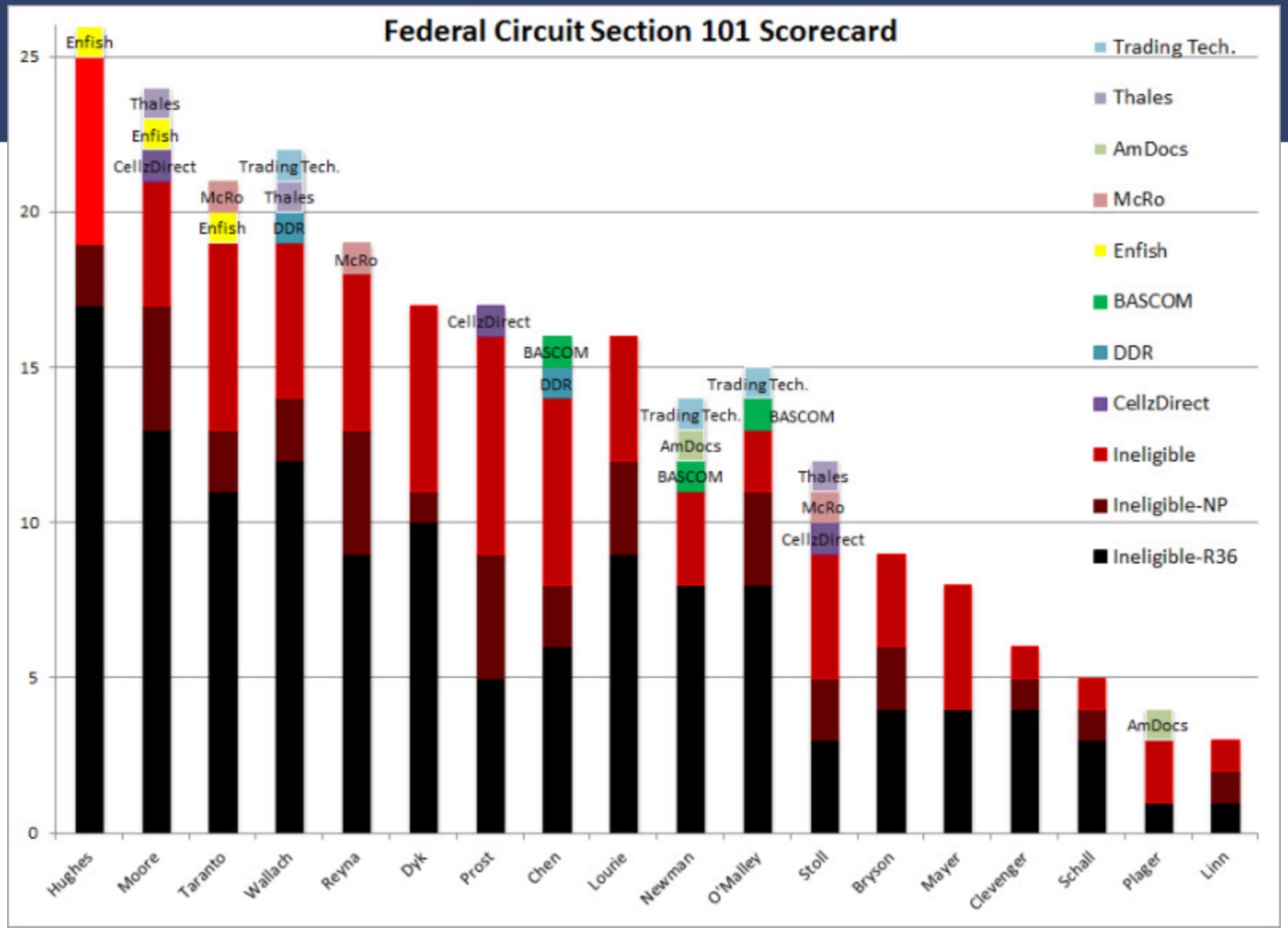
SOURCE: ALICESTORM UPATE FEBRUARY 2017, http://www.bilskiblog.com/blog/alicestorm (March 16, 2017)

Alice is the death knell for software patents

- "Claims directed to software implemented on a generic computer are categorically not eligible for patent."
- "Alice sounded the death knell for software patents."
- "Software is a form of language – in essence, a set of instructions.... It is inherently abstract because it is merely 'an idea without physical embodiment.' Given that an 'idea' is not patentable... and a generic computer is 'beside the point' in the eligibility analysis ... all software implemented on a standard computer should be deemed categorically outside the bounds of section 101."

  – Judge Mayer, concurring opinion in *Intellectual Ventures v. Symantec Corp.* (Fed. Cir. 2016)

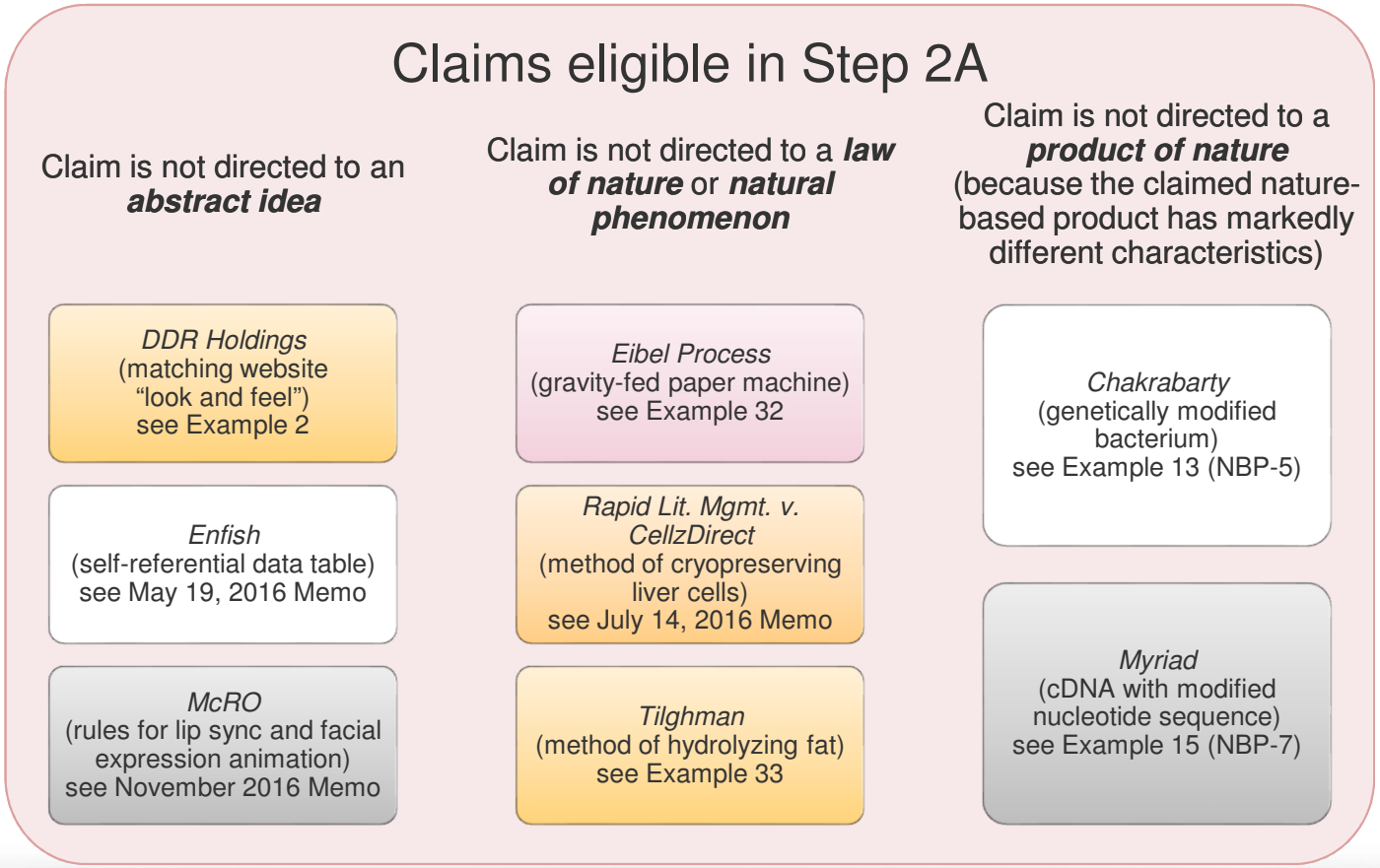




SOURCE: ALICESTORM UPATE FEBRUARY 2017, http://www.bilskiblog.com/blog/alicestorm (March 16, 2017)

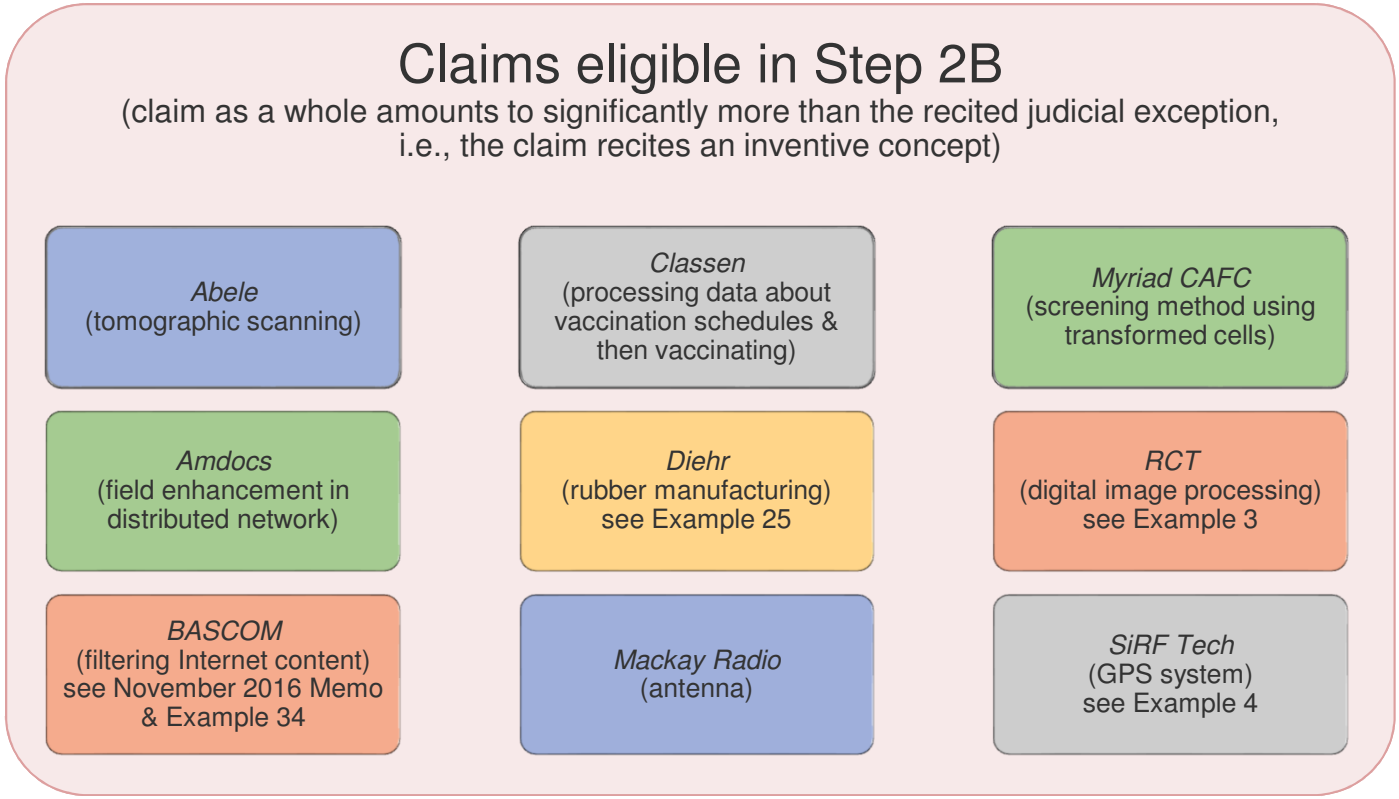
Matching Problem

- **PTO Interim Eligibility Guidance Quick Reference Sheet - December 2016:** ***Decisions Holding Claims Eligible***



Matching Problem

- **PTO Interim Eligibility Guidance Quick Reference Sheet - December 2016:** ***Decisions Holding Claims Eligible***



Matching Problem

- **PTO Interim Eligibility Guidance Quick Reference Sheet - December 2016:**
  Identifying Abstract Ideas

Talking about a Revolution

- Many organizations and companies have criticized the current state of the law
  - American Bar Association
  - Intellectual Property Owners Association
  - Pharmaceutical Research and Manufacturers of America
  - American Intellectual Property Law Association
  - IBM

Talking about a Revolution

- "the current jurisprudence on patent eligibility under section 101 is confusing, creates uncertainty as to the availability and enforceability of patent assets, arguably risks the incentive to innovate provided by patents in technologies in which U.S. industry has historically led the world, and potentially places the U.S. in a less advantageous position on patent protection than our leading competitor nations."
- "further judicial interpretation is unlikely, in the foreseeable future, to rectify the ambiguities and uncertainties created by that jurisprudence."
  - American Bar Association Comments Related to Patent Subject Matter Eligibility, January 18, 2017

The Fate of Software Patents

- Software patents will survive
- With time, matching will get easier as more decisions find software claims patent eligible
  - *DDR Holdings, LLC v. Hotels.com, L.P.* (Fed. Cir. 2014)
  - *Enfish LLC v. Microsoft* (Fed. Cir. 2016)
  - *Bascom Global Internet Services, Inc. v. A.T.T. Mobility LLC* (Fed. Cir. 2016)
  - *McRO Inc. v. Bandai Namco Games America Inc.* (Fed. Cir. 2016)
  - *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.* (Fed. Cir. 2016)
  - *Trading Technologies v. CQG* (Fed. Cir. 2017)
  - *Thales Visionix Inc. v. U.S.* (Fed. Cir. 2017)
- Abstract idea analysis may become more critical

Technological Improvements and Solutions

- *DDR Holdings, LLC v. Hotels.com, L.P.* (Fed. Cir. 2014)
  - "these claims stand apart because they do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks."
- *McRO v. Bandai Namco Games America* (Fed. Cir. 2016)
  - The claimed methods employ "specific, limited mathematical rules" that evaluate sequences and generate transition parameters, neither of which was done by the animators. The claims are therefore directed to a "combined order of specific rules" that generates information applied to create a desired result, namely, an animation sequence for a character.

Technological Improvements and Solutions

- ***Enfish LLC v. Microsoft Corp.*** (Fed. Cir. 2016)
  - A New Hope – software is not inherently abstract
    - "The Supreme Court has suggested that claims 'purport[ing] to improve the functioning of the computer itself,' or 'improv[ing] an existing technological process' might not succumb to the abstract idea exception. 'Nor do we think that claims directed to software, as opposed to hardware, are inherently abstract and therefore only properly analyzed at the second step of the Alice analysis. Software can make non-abstract improvements to computer technology just as hardware improvements can, and sometimes the improvements can be accomplished through either route.'"
  - Specific Improvement
    - Claims were "directed to a specific improvement to the way computers operate, embodied in [a] self-referential table"

Discrete Implementation of Abstract Idea

- ***Bascom Global Internet Services, Inc. v. A.T.T. Mobility LLC*** (Fed. Cir. 2016)
  - "The inventive concept inquiry requires more than recognizing that each claim element, by itself, was known in the art. As is the case here, an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces."
  - "The claims do not merely recite the abstract idea of filtering content along with the requirement to perform it on the Internet, or to perform it on a set of generic computer components. …. Nor do the claims preempt all ways of filtering content on the Internet; rather, they recite a specific, discrete implementation of the abstract idea of filtering content.

Unconventional Technological Solution

- ***Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*** (Fed. Cir. 2016)
  - "The problem with articulating a single, universal definition of 'abstract idea' is that it is difficult to fashion a workable definition to be applied to as-yet-unknown cases with as-yet-unknown inventions."
  - "this claim entails an unconventional technological solution (enhancing data in a distributed fashion) to a technological problem (massive record flows which previously required massive databases). … [T]he claim's enhancing limitation necessarily requires that these generic components operate in an unconventional manner to achieve an improvement in computer functionality."

Technological Improvements and Solutions

- ***Trading Technologies v. CQG*** (Fed. Cir. 2017)
  - "Abstraction is avoided or overcome when a proposed new application or computer-implemented function is not simply the generalized use of a computer as a tool to conduct a known or obvious process, but instead is an improvement to the capability of the system as a whole."
  - "For Section 101 purposes, the claimed subject matter is 'directed to a specific improvement to the way computers operate,' …, for the claimed graphical user interface method imparts a specific functionality to a trading system 'directed to a specific implementation of a solution to a problem in the software arts.'

Unconventional Solution Not Abstract

- ***Thales Visionix Inc. v. U.S.*** (Fed. Cir. 2017)
  - An inertial tracking system for tracking the motion of an object relative to a moving reference frame is not abstract
    - "The patent disclosure recognized that conventional solutions for tracking inertial motion of an object on a moving platform were flawed"
  - "The claims specify a particular configuration of inertial sensors and a particular method of using the raw data from the sensors in order to more accurately calculate the position and orientation of an object on a moving platform. The mathematical equations are a consequence of the arrangement of the sensors and the unconventional choice of reference frame in order to calculate position and orientation. Far from claiming the equations themselves, the claims seek to protect only the application of physics to the unconventional configuration of sensors as disclosed. "

Where do we go from here?

- Software patents will continue to be challenged and more will survive
- Software patents are more likely to survive if they:
  - Are directed to a technological problem/solution
  - Improve how the computer works
  - Cover a discrete implementation of an abstract idea
  - Match an existing fact pattern from a prior case
- Courts may apply a stricter “abstract” standard and find unconventional software solutions to be not abstract
- Legislation