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## The One Year Anniversary: The Aftermath of #AliceStorm

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It's been one year since the Supreme Court's decision in *Alice Corp. v. CLS Bank*. On its face the opinion was relatively conservative, cautioning courts to "tread carefully" before invalidating patents, and emphasizing that the primary concern was to avoid preemption of "fundamental building blocks" of human ingenuity. The Court specifically avoided any suggestion that software or business methods were presumptively invalid. But those concerns seem to have gone unheeded. The Court's attempt to sidestep the tricky problem of defining the boundary of an exception to patent eligibility—"we need not labor to delimit the precise contours of the "abstract ideas category in this case"—has turned into the very mechanism that is quickly "swallow[ing] all of patent law." The federal courts, the Patent Trial and Appeal Board, and the USPTO are using the very lack of a definition to liberally expand the contours of abstract ideas to cover everything from computer animation to database architecture to digital photograph management and even to safety systems for automobiles.

Let's look at the numbers to present an accurate picture of the implications of the Supreme Court's decision. My analysis is a data-driven attempt to assess the implications of *Alice* one year out. It is with an understanding of how the Supreme Court's decision is actually playing out in the theater of innovation that we can better project and position ourselves for what the future holds.

### [Alice at Court](#)

	Total	Total Invalid	Percent Invalid
Fed. Ct. Decisions	106	76	71.7%
Patents	226	147	65.0%
Claims	4,907	3,739	76.2%
Motions on Pleadings: Decisions	52	35	67.0%
Mot. on Pleadings: Patents	108	58	54.0%

As of June 19, 2015 there have been 106 Federal Circuit and district court decisions on § 101 grounds, with 76 decisions invalidating the patents at issue in whole or in part. In terms of patents and claims, 65% of challenged patents have been found invalid, along with 76.2% of the challenged claims.

The success rate of motions on the pleadings (including motions to dismiss and judgments on the pleadings) is extremely impressive: 67% of defense motions granted, invalidating 54% of asserted patents. There has never been a Supreme Court ruling that the presumption of validity does not apply to § 101—only the Court's use of the originally metaphorical notion that eligibility is a "threshold" condition. Given that, and the general rule that to survive a motion to dismiss the patentee (historically) need only show that there was a plausible basis that the complaint states a cause of action—there is a plausible basis that the patent claim is not directed to an abstract idea, law of nature, or natural phenomena. One would be forgiven for thinking, as did former Chief Judge Rader in *Ultramercial, LLC v. Hulu, LLC* that a "Rule 12(b)(6) dismissal for lack of eligible subject matter will be the exception, not the rule." Apparently the rules change in the middle of the game.

Turning specifically to the Federal Circuit, the numbers are stark:

	Total	Invalid	Percent Invalid
Fed. Circuit Decisions	13	12	92%
Patents	19	18	95%
Claims	468	441	94%

Of the 13 decisions, 11 are in software or e-commerce and only two are in biotech. The one case where the court held in favor of the patentee, *DDR Holdings, LLC v. Hotels.com, L.P.* appeared to offer a narrow avenue for patentees to avoid invalidation. However, only nine district court opinions have relied upon *DDR* to find patent eligibility, with over 30 court opinions distinguishing *DDR* as inapplicable. Even more interesting is the fact that in *DDR* the Federal Circuit essentially held that creating a website that copies the look and feel of another website is patent eligible. In the Silicon Valley, that's called phishing, and it's not a technology in which most reputable companies invest.

### Alice at the Office

The impact of *Alice* is similarly impacting practitioners before the USPTO. In December, 2014 the Office issued its *Interim Guidance on Patent Subject Matter Eligibility*, providing guidance to patent examiners as to how to apply the *Alice*, *Mayo*, and *Myriad* decisions along with various Federal Circuit decisions, to claims during prosecution. Importantly, the Guidance noted that "the Supreme Court did not create a *per se* excluded category of subject matter, such as software or business methods, nor did it impose any special requirements for eligibility of software or business methods," and it reminded examiners that "Courts tread carefully in scrutinizing such claims because at some level all inventions embody, use, reflect, rest upon, or apply a law of nature, natural phenomenon, or abstract idea." Alas, most patent examiners are acting as if the patent applications before them are the exceptions to these cautionary instructions.

With the assistance of Patent Advisor, I compiled a dataset of almost 300,000 office actions and notice of allowances sampled in two week periods during 2013, 2013, 2014 and early 2015, and all actions during March, April and May 2015, across all technology centers:

Technology Center	Jan-12	Oct-12	Aug-13	May-14	Jul-14	Feb-15	Mar-15	Apr-15	Jan-12	Grand Total
1600 – Bio, Genes & O. Chem.	3,082	3,617	3,724	3,495	3,984	1,858	303	5,873	1,071	27,007
1700 – Chemical Material Eng.	4,407	5,181	4,896	5,060	4,904	2,422	425	9,150	1,618	38,063
2100 – Computer Architecture	3,265	3,955	3,285	3,313	3,325	1,618	262	5,977	1,053	26,053
2400 - Networks, Video	3,234	4,133	4,178	4,324	4,277	2,102	286	7,017	1,351	30,902
2600 - Communications	4,359	5,248	5,281	4,483	5,495	2,499	443	7,663	1,462	36,933
2800 – Semiconductor, Electrical, Optical	6,601	7,846	7,576	6,995	7,589	3,995	711	12,613	2,204	56,130
3600 – Trans, Const., Biz Methods	4,427	5,070	5,546	5,020	5,265	2,952	453	8,738	1,473	38,944
3700 - Mechanical Eng. & Manuf.	5,190	5,776	6,496	5,635	5,986	2,910	467	11,327	2,179	45,966
Grand Total	34,565	40,826	40,982	38,325	40,825	20,356	3,350	68,358	12,411	299,998

About 100,000 actions were notices of allowances, leaving about 200,000 office actions. Each office action was coded as to whether it included rejections under §§ 101, 102 and 103. For each office action the art unit and examiner was identified as well, and the status of the application (abandoned, pending or patented) as of the date that the data was obtained. I then analyzed the data for office actions rejections based on § 101, allowance rates, and examiner rejection rates. Here's what I found.

### Percent of all Actions with § 101 Rejections

	Jan-12	Oct-12	Aug-13	May-14	Jul-14	Feb-15	Mar-15	Apr-15	May-15
1600 – Bio, Genes & O. Chem.	6.81%	8.02%	8.73%	12.93%	13.55%	13.99%	10.89%	12.41%	11.86%
1700 – Chemical Material Eng.	2.54%	2.55%	2.02%	2.02%	2.12%	2.11%	2.59%	2.01%	2.04%
2100 – Computer Architecture	20.12%	25.44%	17.20%	15.97%	16.51%	15.76%	10.69%	16.97%	12.44%
2400 -Networks, Video	18.83%	18.24%	12.02%	10.20%	10.22%	10.47%	9.09%	12.08%	10.95%
2600 - Communications	12.07%	10.69%	9.30%	8.28%	7.57%	7.84%	2.71%	7.79%	6.50%
2800 – Semicon., Elect. Opti.	3.27%	3.40%	2.24%	2.00%	2.25%	2.85%	2.39%	3.17%	3.40%
3600 – Trans, Const., Biz Methods	12.79%	12.15%	11.29%	10.90%	28.03%	42.38%	28.70%	32.59%	31.43%
3700 - Mechanical Eng. & Manuf.	4.89%	4.90%	3.97%	4.60%	5.51%	8.08%	6.21%	6.70%	5.78%

Here, we have the percentage of all actions in each period that received a § 101 rejection, considering both rejections issued and notices of allowances. The **black line** separates pre-Alice from post-Alice data. For example, in TC 1600, the biotech area, in January, 2012 6.81% of all actions issued (counting both office actions and notices of allowances) were office actions with § 101 rejections; by May 2015 that percentage almost doubled to 11.86% of actions.

Overall, data shows that in 2012 subject matter rejections were mainly in the computer related Tech Centers (2100, 2400) and began declining thereafter, while escalating in biotechnology (1600) and so-called "business methods" Tech Center, TC 3600, following *Mayo* and *Alice*. Other technology centers such as semiconductors and mechanical engineering had essentially low and constant rejection rates. But that's not because there are no software patents in these technology centers: you find plenty of software patents in these groups. Rather, my view is that it is because examiners in these groups treat software patents as they do any other technology.

The rejection rates in Tech Center 3600 in the 30-40% range are higher than any other group, but they also mask what's really going on, since TC 3600 covers more than business methods. Tech Center 3600 has nine work groups:

Percent of all Actions with § 101 Rejections in TC 3600 Work Groups

Work Group	Jan-12	Oct-12	Aug-13	May-14	Jul-14	Feb-15	Mar-15	Apr-15	May-15
3610 Transport	0.4%	2.0%	1.3%	0.4%	1.3%	2.0%	0.0%	0.7%	0.0%
3620 Ecommerce	40.5%	36.3%	34.8%	34.3%	87.7%	89.8%	85.7%	88.0%	84.4%
3630 Structures	1.6%	0.9%	1.1%	1.6%	1.6%	0.4%	2.1%	0.4%	0.0%
3640 Aero, Argi	4.8%	5.5%	5.3%	5.1%	6.3%	4.3%	4.6%	7.7%	4.5%
3650 Mat. Handling	2.2%	1.8%	1.3%	1.5%	2.3%	1.3%	0.0%	0.8%	0.5%
3660 Veh. Control	11.5%	13.9%	18.9%	14.4%	22.7%	15.5%	6.6%	9.3%	9.6%
3670 Wells, Earth	1.4%	1.6%	2.3%	1.2%	1.3%	1.6%	2.5%	1.4%	1.4%
3680 Ecommerce	41.3%	34.7%	30.1%	33.2%	79.3%	82.7%	86.5%	82.5%	76.9%
3690 Ecommerce	33.0%	35.9%	27.5%	23.3%	89.0%	93.3%	88.0%	93.1%	87.5%

In TC 3600 most of the work groups handle good old-fashioned machines and processes, such as transportation (3610), structures like chairs and ladders (3630), airplanes, agriculture, and weapons (3640), wells and earth moving equipment (3670), etc. Three work groups handle e-commerce applications: specifically, 3620, 3680 and 3690. Here we see that these groups have significantly higher § 101 rejections than the rest of TC 3600. But let's drill down further.

Each of work groups 3620, 3680 and 3690 have between five and 10 individual art units that handle specific types of e-commerce technologies, but they are not all under the same work group. For example business related cryptography is handled by both art units 3621 and 3685; healthcare and insurance is handled by art units 3626 and 3686; operations research is handled in 3623, 3624, 3682 and 3684. If we consolidate the data according to technology type and then look at rates of § 101 rejections we get the following:



## Percent of all Actions with § 101 Rejections in E-Commerce Art Units by Technology Type

Ecommerce Type	Jan-12	Oct-12	Aug-13	May-14	Jul-14	Feb-15	Mar-15	Apr-15	May-15
Business Crypto	42.1%	41.4%	33.0%	44.4%	56.8%	63.3%	69.2%	68.8%	52.1%
Business Processing & Modeling	45.2%	42.7%	33.6%	50.5%	93.6%	92.7%	100.0%	95.4%	97.7%
Cost/Price, Reservations	47.8%	43.4%	40.9%	38.7%	78.9%	90.1%	92.3%	90.8%	73.8%
E-Shopping	32.4%	31.2%	17.5%	42.9%	93.4%	85.2%	62.5%	85.2%	81.0%
Health Care, Insurance	31.3%	30.2%	28.7%	24.0%	89.1%	88.0%	94.7%	85.1%	81.7%
Incentive Programs	39.8%	41.7%	45.1%	30.5%	84.1%	85.4%	84.2%	92.3%	89.1%
Operations Research	49.3%	38.0%	38.2%	35.1%	92.8%	97.4%	92.3%	93.3%	88.6%
Finance & Banking	33.0%	35.9%	27.5%	23.3%	89.0%	93.3%	88.0%	93.1%	87.5%
POS, Inventory, Accounting	33.8%	17.7%	15.7%	17.0%	80.7%	73.8%	80.0%	67.3%	69.8%

What's going on? After *Bilski* in 2010, the § 101 rejections were running between 17 % and 50%. Not great but tolerable since these were mostly formal and were overcome with amendments adding hardware elements ("processor," "memory") to method claims or inserting "non-transitory" into Beauregard claims.

But after *Alice*, everything changed and § 101 rejections started issuing like paper money in a hyperinflation economy. If your perception as a patent prosecutor was that the every application was getting rejected under § 101, this explains your pain. Here's another view of this data, in terms of actual number of § 101 rejections per sample period:

## Number of Office Actions with § 101 Rejections in E-Commerce Art Units by Technology Type

Ecommerce Type	Jan-12	Oct-12	Aug-13	May-14	Jul-14	Feb-15	Mar-15	Apr-15	May-15
Business Crypto	45	48	35	44	79	69	9	185	25
Business Processing & Modeling	33	32	36	47	102	102	7	206	43
Cost/Price, Reservations	44	46	52	36	86	73	12	197	31
E-Shopping	23	19	11	24	71	75	5	144	17
Health Care, Insurance	40	42	58	37	155	117	18	280	49
Incentive Programs	33	55	50	40	132	123	16	252	57
Finance & Banking	97	107	84	69	306	238	22	528	77
POS, Inventory, Accounting	46	25	23	20	92	90	8	208	30

Notice here that the number of office actions in March, 2015 fell dramatically, and then in April the flood gates opened and hundreds of actions issued with § 101 rejections. This is consistent with the Office's statements in January 2015 that it was training examiners in view of the 2014 Interim Guidance, so office actions were being held until the training was completed. Apparently, the training skipped the part about no *per se* exclusions of business methods.

Now let's consider notice of allowance rates. First with respect to all Tech Centers.

## Percent of Actions that Are Notices of Allowance

Tech Center	Jan-12	Oct-12	Aug-13	May-14	Jul-14	Feb-15	Mar-15	Apr-15	May-15
1600 – Bio, Genes & O. Chem.	24.0%	26.9%	31.2%	28.9%	30.1%	34.2%	50.8%	39.0%	39.8%
1700 – Chemical Material Eng.	24.7%	24.2%	29.9%	27.0%	25.8%	29.7%	44.2%	31.7%	36.7%
2100 – Computer Architecture	26.2%	23.8%	29.8%	31.0%	31.3%	31.7%	45.4%	31.6%	38.8%
2400 - Networks, Video	27.1%	23.8%	30.0%	35.8%	34.3%	33.8%	46.9%	36.9%	42.8%
2600 - Communications	30.6%	28.0%	35.9%	31.5%	34.5%	40.8%	69.8%	42.4%	45.1%
2800 – Semicon., Elect. Opti.	42.1%	34.8%	39.2%	40.5%	42.9%	43.8%	67.8%	50.1%	51.8%
3600 – Trans, Const., Biz Methods	27.8%	26.4%	30.4%	31.2%	25.6%	26.5%	41.1%	33.7%	37.3%
3700 - Mechanical Eng. & Manuf.	27.9%	24.4%	28.5%	27.8%	26.7%	30.2%	34.3%	32.8%	33.2%

This data reflects, of all the actions that were issued in a given period, the percentage that were notices of allowances. (Note here that contrary to the preceding tables, red cells are *low* percentage, and green cells are *high* since notices of allowance are good things, not bad things). The numbers look good, with a general increasing trend over time.

Now consider what's happening in TC 3600's business methods art units.

Percent of Actions that Are Notices of Allowance in Business Methods

Ecommerce Type	Jan-12	Oct-12	Aug-13	May-14	Jul-14	Feb-15	Mar-15	Apr-15	May-15
Business Crypto	9.4%	12.1%	22.6%	13.1%	12.2%	15.6%	7.7%	11.5%	18.8%
Business Processing & Modeling	6.9%	5.3%	18.7%	12.9%	3.7%	4.6%	0.0%	2.8%	2.3%
Cost/Price, Reservations	7.6%	8.5%	12.6%	10.8%	0.9%	4.9%	7.7%	3.7%	9.5%
E-Shopping	42.3%	29.5%	39.7%	21.4%	5.3%	14.8%	37.5%	11.2%	19.1%
Health Care, Insurance	11.7%	13.7%	26.2%	26.6%	5.2%	6.8%	5.3%	6.4%	8.3%
Incentive Programs	13.3%	6.1%	6.3%	9.2%	6.4%	4.9%	10.5%	2.9%	7.8%
Operations Research	8.1%	19.4%	25.2%	21.9%	2.3%	1.6%	3.9%	4.9%	11.4%
Finance & Banking	19.7%	23.5%	26.9%	29.4%	4.1%	4.3%	8.0%	4.6%	9.1%
POS, Inventory, Accounting	12.5%	19.2%	19.7%	31.4%	7.9%	10.7%	0.0%	17.5%	25.6%

Now the picture is quite different. The rate of NOAs drops dramatically after *Alice*, especially in finance and banking and operations research. If it seemed that you were no longer getting a NOAs, this is why. The zero percent rate in March, 2015 is a result of the Office holding up actions and NOAs in view of the Interim Guidance training, as mentioned above.

Patents issued in the business methods art units typically are classified in Class 705 for "Data Processing." I identified all patents with a primary classification in Class 705 since January, 2011, on a month by month basis, to identify year over year trends. Again the **black line** separates pre-*Alice* from post-*Alice* data.

Year of Issuance	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2011	11	15	13	9	11	9	13	29	22	18	31	23	204
2012	25	29	25	31	44	47	65	76	89	121	89	116	757
2013	129	154	147	178	146	174	198	202	211	276	253	309	2377
2014	254	248	253	345	303	309	347	228	127	78	53	104	2649
2015	73	56	88	71	81								369

This table shows a precipitous decline in the number of business method patents issued following *Alice*, especially year over year. The lag between the June, 2014 *Alice* decision and the drop off in October 2014 is an artifact of the delay between allowance and issuance, as well as the USPTO's unprecedented decision to withdraw an unknown number of applications for which the issue fee had already been paid, and issue § 101 rejections. It's an interesting artifact, as well, that the number of



Class 705 patents issued peaked in the month after *Alice*: you have to remember that these patents were allowed at least three months, and as much as a year, before the *Alice* decision; it just took a long time to actually get printed as a patent.

Next, we'll consider abandonment rates, on a comparative basis, looking at the percentages of applications that were ultimately abandoned in relationship to whether or not they received a § 101 rejection. We'll compare the data from January 2012 to July 2014. Again, consider the entire patent corps:

Percent of Abandoned Applications with Prior § 101 Rejection

	Jan. 2012		July 2014	
	§ 101 Rejection		§ 101 Rejection	
Tech Center	YES	NO	YES	NO
1600 – Bio, Genes & O. Chem.	8.8%	91.2%	20.7%	79.3%
1700 – Chemical, Material. Eng.	3.3%	96.7%	2.0%	98.0%
2100 – Computer, Architecture	25.6%	74.4%	20.8%	79.3%
2400 - Networks, Video	22.8%	77.2%	13.0%	87.0%
2600 - Communications	13.2%	86.8%	9.4%	90.6%
2800 – Semicon., Elect., Opt.	4.2%	95.8%	4.2%	95.8%
3600 – Trans, Const., Biz Methods	16.7%	83.3%	51.8%	48.2%
3700 - Mechanical Eng. & Manuf.	6.2%	93.8%	5.8%	94.2%

Here we see that of the applications that were abandoned during the respective sample periods, the vast majority did not have a prior § 101 rejection. Only in TC 3600 did the majority shift after *Alice* with 51.83% applications that received § 101 rejections in July 2014 being subsequently abandoned by May 31, 2015. Again, let's drill down into the business method art units in TC 3600:

Percent of Abandoned Applications with Prior § 101 Rejection

	Jan. 2012		July 2014	
	§ 101 Rejection		§ 101 Rejection	
E-Commerce Type	YES	NO	YES	NO
Business Crypto	33.33%	66.67%	88.24%	11.76%
Business Processing & Modeling	46.67%	53.33%	100.00%	0.00%
Cost/Price, Reservations	44.00%	56.00%	76.19%	23.81%
E-Shopping	61.54%	38.46%	100.00%	0.00%
Health Care, Insurance	31.25%	68.75%	94.74%	5.26%
Incentive Programs	44.00%	56.00%	90.91%	9.09%
Operations Research	48.53%	51.47%	93.75%	6.25%
Finance & Banking	41.82%	58.18%	95.00%	5.00%
POS, Inventory, Accounting	39.29%	60.71%	100.00%	0.00%

First, prior to *Alice*, abandonments in the business method units appeared to result more frequently from other than § 101 rejections, typically prior art rejections. This is shown by the fact that the Jan. 2012 "No" column (no prior 101 rejection) is greater than the Jan. 2012 "Yes" column. Then after *Alice*, there is a huge shift with the vast majority of applications that were abandoned having § 101 rejections, as shown by the July, 2014 "Yes" column. The vast majority of abandonments, upwards of 90%, followed a 101 rejection. That's applicants essentially giving up over what only a few years ago was a relatively minor hurdle. That's what happens when you change the rules in the middle of the game. Second, there is also significant differential behavior in the business method areas as compared to the rest of the technology centers after *Alice*.

Here's my personal favorite.

Rates of Examiner § 101 Rejections in TC 3600

§ 101 Rejection Rate	No. of Examiners	No. of Applications Rejected	Cum. % Rejected.
100.00%	58	443	5.9%
90.00%	20	370	10.9%
80.00%	49	926	23.3%
70.00%	72	1565	44.2%
60.00%	88	1971	70.6%
50.00%	71	1360	88.8%
40.00%	33	474	95.2%
30.00%	22	265	98.7%
20.00%	8	60	99.5%
10.00%	7	35	100.0%
0.00%	16		
<b>Grand Total</b>	<b>444</b>	<b>7469</b>	

This table shows the numbers of examiners in the business method art units with respect to the percentage of applications in which they issued § 101 rejections after *Alice*. The first row shows that during the sampled periods since *Alice*, 58 business methods examiners issued § 101 rejections in 100% of their applications, for a total of 443 applications. Twenty examiners issued § 101 rejections for between 90% and 99% of their cases, covering 370 applications. In short, 199 examiners issued § 101 rejections more than 70% of the time, covering 3,304 applications or about 70.6% of all applications. This is not "treading carefully."

We find similar, though less dramatic, trends and variations in TC 1600 which handles biotechnology, pharma, and chemistry. Percent of all Actions with § 101 Rejections in TC 1600 Work Groups

	Jan-12	Oct-12	Aug-13	May-14	Jul-14	Feb-15	Mar-15	Apr-15	May-15
<b>1610 - Organic Compounds</b>	4.7%	5.6%	5.5%	3.8%	5.0%	5.0%	4.2%	3.8%	1.5%
<b>1620 - Organic Chemistry</b>	6.7%	6.1%	7.1%	7.1%	7.9%	5.9%	0.0%	4.2%	1.2%
<b>1630 - Molecular Biology</b>	16.8%	18.9%	26.4%	34.6%	38.7%	44.2%	44.4%	43.3%	52.3%
<b>1640 - Immunology</b>	9.0%	16.4%	16.1%	27.5%	28.9%	30.1%	27.8%	24.7%	20.2%
<b>1650 - Microbiology</b>	9.3%	11.2%	11.3%	23.9%	28.7%	29.4%	15.0%	26.3%	16.3%
<b>1660 - Plants</b>	37.5%	30.0%	26.2%	16.1%	17.1%	28.0%	14.3%	34.0%	30.6%
<b>1670 - Pharmacological, diagnostic, and therapeutic</b>	6.8%	6.0%	9.4%	18.2%	17.3%	21.3%	18.2%	16.0%	13.5%

The red line separate pre-*Mayo/Myriad* data from post-*Mayo/Myriad*, and the increase in the post-period is significant. Here too, the various work groups mask the more significant rejection rates in specific technology areas, with the rejection rate in microbiology first jumping up to 34.6% post-*Mayo* and steadily climbing to the current 53.2%.

Percent of all Actions with § 101 Rejections in TC 1600 by Technology

Technology Type	Jan-12	Oct-12	Aug-13	May-14	Jul-14	Feb-15	Mar-15	Apr-15	May-15	4m Avg.
<b>Bioinformatics</b>	45%	40%	32%	46%	70%	75%	78%	81%	72%	75%
<b>Nucleic Acid Amplification, Primers, Genotyping and Haplotyping</b>	9%	12%	18%	25%	34%	28%	38%	30%	35%	33%
<b>Antibody Engineering and Cancer Immunology</b>	9%	21%	21%	30%	33%	28%	40%	23%	7%	26%
<b>Gene Expression &amp; Combinatorial/Computational Chemistry</b>	8%	12%	28%	25%	30%	32%	0%	22%	38%	24%
<b>Bio-acting plant, Fungus, Algal (seaweed), and Microbial Extracts</b>	6%	9%	4%	32%	41%	21%	0%	29%	25%	23%
<b>Immunoassays and other specific binding assay methods</b>	0%	13%	22%	25%	24%	24%	20%	23%	21%	23%
<b>Neurobiology and Neuroimmunology</b>	13%	10%	12%	16%	29%	21%	14%	23%	18%	21%
<b>Bacterial &amp; Parasitic Immunology and Specific Binding Assays</b>	3%	11%	16%	24%	28%	19%	29%	15%	10%	20%
<b>Transgenic Plants</b>	50%	13%	29%	16%	9%	20%	10%	23%	22%	17%
<b>Fermentation and Microbiology</b>	5%	6%	6%	18%	15%	19%	12%	17%	9%	14%
<b>Viral Immunology</b>	9%	10%	4%	18%	14%	27%	0%	14%	16%	14%
<b>Cellular Immunology</b>	4%	9%	6%	12%	12%	14%	17%	12%	15%	14%
<b>Recombinant Enzymes</b>	12%	11%	11%	12%	20%	21%	6%	13%	8%	14%
<b>Small Proteins, Peptides, Proteins</b>	9%	8%	10%	25%	21%	18%	13%	10%	6%	13%
<b>Animals, Animal Cloning</b>	12%	12%	7%	14%	11%	12%	0%	9%	20%	10%
<b>Plants</b>	0%	67%	11%	13%	0%	0%	0%	0%	50%	10%
<b>Carbohydrates</b>	10%	0%	5%	6%	11%	9%	0%	13%	15%	10%
<b>Receptors, Cytokines &amp; Recombinant Hormones</b>	6%	9%	10%	20%	16%	14%	6%	8%	4%	9%
<b>Antisense-related Nucleic Acid Compositions and Methods</b>	18%	5%	10%	5%	9%	3%	0%	7%	8%	5%
<b>Fischer-Tropsch Processes, Grignard Reagents: fats</b>	0%	2%	5%	4%	5%	6%	0%	2%	3%	3%
<b>Steroids, Drugs, Bio-affecting and Body Treating</b>	7%	6%	3%	2%	3%	2%	0%	4%	6%	3%
<b>Heterocyclic Compounds and Uses</b>	5%	5%	2%	4%	8%	6%	0%	0%	0%	3%
<b>Drugs, Bio-affecting and Body Treatments</b>	4%	4%	5%	4%	4%	4%	3%	2%	0%	3%
<b>Specific Binding Assays and Apparatus</b>	0%	13%	5%	0%	0%	7%	0%	4%	0%	2%
<b>Herbicides, Pesticides, Cosmetics, Drugs</b>	2%	4%	0%	1%	5%	3%	0%	3%	0%	2%
<b>Organic Chemistry</b>	5%	4%	4%	4%	4%	3%	0%	2%	1%	2%

This table breaks down the work groups into technology types, and then these are sorting average rejection rate over the past four months. Following *Alice*, we see a significant increase in eligibility rejections in bioinformatics related applications--inventions that rely on analysis and identification of biological and genetic information, and which are frequently used in diagnostics and drug discovery. This is especially disconcerting because bioinformatics is critical to the development of new diagnostics, therapies and drugs.

Note as well the enormous spike in rejections for plant related applications from 0% between July 2015 and April 2015, to 50% in May 2015. This is likely a result again of the USPTO's Interim Guidance which essentially instructed examiners to reject any claim that included any form of a natural product.

At least pesticides and herbicides are safe from *Alice*, since we definitely need more of those. The irony is that the more pesticides and herbicides that come to market, the more we need bioinformatics inventions to identify and treat conditions potentially resulting from these products.

#### *Alice* at the Board

The Patent Trial and Appeal Board has been even more hostile to software and business methods patents under the Covered Business Method review program:

**Total                      Petitions                      Percent Invalid**



	Petitions	Granted	
PTAB CBM Institution on § 101	72	64	89%
PTAB Final Decisions on § 101	27	27	100%

	Petitions	Granted	
PTAB CBM Institution on § 101	72	64	89%
PTAB Final Decisions on § 101	27	27	100%

Covered Business Method review is available for patents that claim "a method, apparatus, or operation used in the practice, administration, or management of a financial product or service." The Board takes a very broad view of what constitutes a financial product or service: if the patent specification happens to mention that the invention may be used in a financial context such as banking, finance, shopping or the like, then that's sufficient. The Board has found CBM standing in 91% of petitions, and instituted trial in 89% of petitions asserting § 101 invalidity. Once a CBM trial has been instituted, the odds are heavily in the petitioner's favor: of the 27 final CBM decisions addressing § 101, the Board has found for the petitioner 100% of the time.

Finally, we look at the Board's activity in handling *ex parte* appeals from § 101 rejections for the period of March 1, 2015 to May 30, 2015:

- 32 Ex Parte Decisions on § 101, with 15 in TC 3600.
- 28 Affirmances overall, 13 in TC 3600
- Two Reversals on § 101, both in TC 3600
- Four New Grounds of Rejection for § 101

Following suit with how the Board is handling CBMs, they are also heavily supporting examiners in affirming § 101 rejections. More disconcerting is the trend of new grounds of rejection under § 101. While only four were issued in this period, there have been several dozen since *Alice*. In this situation, the applicant has appealed, for example, a § 103 rejection. The Board can reverse the examiner on that rejection, but then *sua sponte* reject all of the claims under § 101. What are the odds that the examiner will ever allow the case? Close to zero. What are the odds that an appeal back to the Board on the examiner's next § 101 rejection will be reversed? If the Board's 100% rate of affirming its CBM institution decisions on § 101 is any indication, then you know the answer.

### Conclusions

Looking at the overall context of the *Alice* decision, it's my view that Supreme Court did not intend this landslide effect. While they were certainly aware of the concerns over patent trolls and bad patents, they framed their decision not as a broadside against these perceived evils, but as simple extension of *Bilski* and the question of whether computer implementation of an abstract idea imparts eligibility. At oral argument, the members of the Court specifically asked if they needed to rule on the eligibility of software and they were told by CLS and the Solicitor General that they did not. To the extent that there is broad language in that opinion, it is the cautionary instructions to the courts to avoid disemboweling the patent law from the inside, and the emphasis on preemption of fundamental ideas—not just any ideas—as the core concern of the exclusionary rule. The evidence above shows that these guideposts have been rushed past quite quickly on the way to some goal other than the preservation of intellectual property rights.

If the present trends hold, and I see no reason to suggest that they will not, we will continue to see the zone of patent eligibility curtailed in software (not to mention bio-technology after *Mayo* and *Myriad*). Indeed, the more advanced the software technology—the more it takes over the cognitive work once done exclusively by humans, the more seamless it becomes in the fabric of our daily lives—the less patent eligible it is deemed to be by the courts and the USPTO. What technologies will not be funded, what discoveries will not be made, what products will never come to market we do not know. What we do know is this: there is only one law that governs human affairs and that is the law of unintended consequences.

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### Comments

Shorter of 101 said...

7,664,516 cl. 1 is dead under 101, right? I'd like to short sell BCYP, the patentee.

Whaddaya think?

[Reply 06/24/2015 at 08:51 PM](#)

Robert Sachs said...

Excellent question, and one would think the USPTO global assumption would hold. I don't have a specific answer right now, and it may be that no post-Alice patents have yet been put into CBM. I'll check and get back to you, and keep this topic on my radar.

Bob Sachs

[Reply 06/22/2015 at 08:41 PM](#)

Mike Schulze said...

These are great stats. Here is a question: How have the post-Alice issued patents fared at the Board? In other words, any info on a patent issued post-Alice and then the outcome at a CBM? I imagine the patents that are at the Board are ones which were prosecuted and issued before the Alice ruling. If in fact, the Alice ruling is supposed to be adhered to throughout the world of patents, I would think a post-Alice prosecuted and issued patent would sail through the Boards. Thoughts?

[Reply 06/22/2015 at 03:53 PM](#)

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