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Apply It to the USPTO: Review of the Implementation of *Alice v. CLS Bank* in Patent Examination¹

By Tristan Gray–Le Coz² and Charles Duan³

This past June, the Supreme Court released its ruling in *Alice Corp. Pty. Ltd. v. CLS Bank International*.⁴ The ruling was widely reported as a major inflection point in patent law, refining the analysis of what exactly was eligible for a patent, and possibly closing patent protection to a broad swath of previously acceptable subject matter. Out of the gate, there was much consternation as to the potential mischief being wrought by the Court; some forecasted the demise of business methods patents and others hailed the decision as a major blow against abusive patent practices. Because it was unclear precisely how the USPTO would apply the *Alice* ruling, and because having a firm understanding of how the USPTO makes its evaluations is essential to the effective drafting of patent applications, we engaged in the following investigation.

1. Data on USPTO Withdrawals of Allowances

On June 25, 2014, the USPTO issued new patent examination guidelines to patent examiners that implemented the ruling laid out in *Alice*.⁵ Following the issuance of these guidelines, on August 4, 2014, Commissioner for Patents Peggy Focarino on the Director's Forum blog of the USPTO website, said that the USPTO had taken a "closely tailored" look at a "small group of...[patent] applications that were most likely to be affected by the *Alice Corp.* ruling."⁶ Reacting to the Commissioner's posting, on August 13, Public Knowledge, a nonprofit public interest group dedicated to promoting openness and access to the intellectual property and communications spheres, filed a Freedom of Information Act request for the list of patent applications that were withdrawn from allowance following the new guidelines.

The USPTO returned a list of 830 withdrawn applications along with the date of withdrawal.

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4 *Alice Corp. Pty. Ltd. v. CLS Bank Int'l.*, 134 S. Ct. 2347 (2014).

5 Memorandum from Andrew H. Hirshfeld, USPTO, *Preliminary Examination Instructions in View of the Supreme Court Decision in Alice Corporation Pty. Ltd. v. CLS Bank International, et al.* (June 25, 2014), available at http://www.uspto.gov/patents/announce/alice_pec_25jun2014.pdf.

6 Peggy Focarino, Comm'r for Patents, *Update on USPTO's Implementation of 'Alice v. CLS Bank'*, USPTO Director's Forum (Aug. 4, 2014), http://www.uspto.gov/blog/director/entry/update_on_uspto_s_implementation.

We augmented this list with publicly available bibliographic data drawn from the corresponding patent publications.⁷ The withdrawn applications were in some ways quite similar, as we will show below, and in other ways quite different. At the outset, we feel it important to note that our analysis, and the conclusions we draw from it, represent only a slim proportion of the overall patent landscape, due to the timing and selection criteria that the examiners used in drawing these applications from the total pool of pending applications.⁸ Also, we did not compare this dataset against a baseline set of applications; that would be a likely area of further research.

2. Analysis

Our superficial analysis highlighted some interesting similarities and differences, and we chose to focus on five elements:

- Patent classification, the subject heading given to a patent application by the examiner
- Priority chain length, the number of priority filings preceding the extant application
- Pendency, the “age” of the application
- Ownership, as reflected by the names listed as assignee on the cover of the publication
- Timeline of the withdrawals

2.1. Summary of the Application Pool

The withdrawals were spread over 198 subclasses contained within 11 general classes, though only 20 subclasses, and 4 general classes saw 10 or more withdrawals. The rejected applications claimed priority to between zero and 84 prior applications, averaging just over 1.5 priority claims per application. We found that the pendency of the patent applications varied from just under 3 1/2 months to over 12 years, with an average very near 4 years. While not all of the rejected applications were accompanied by ownership information, and there is no practical way of ascertaining whether or not an initial ownership assignment had changed between the initial filing and the rejection, we found that corporate entities were listed as an applicant in approximately 2/3 of the rejected applications. Finally, all 830 withdrawals had been made on 17 days between July 1 and August 15, 2014.

⁷ The bibliographic data was drawn from the European Patent Office’s Open Patent Services system. See European Patent Office, Open Patent Services RESTful Web Services Reference Guide (v. 1.2.12 ed. 2014), <http://www.epo.org/searching/free/ops/documentation.html>.

⁸ Specifically, the USPTO only considered applications for which a Notice of Allowance had been mailed, but for which the patent grant had not issued yet. See Focarino, *supra* note 6.

2.2. USPTO Subject Matter Classifications

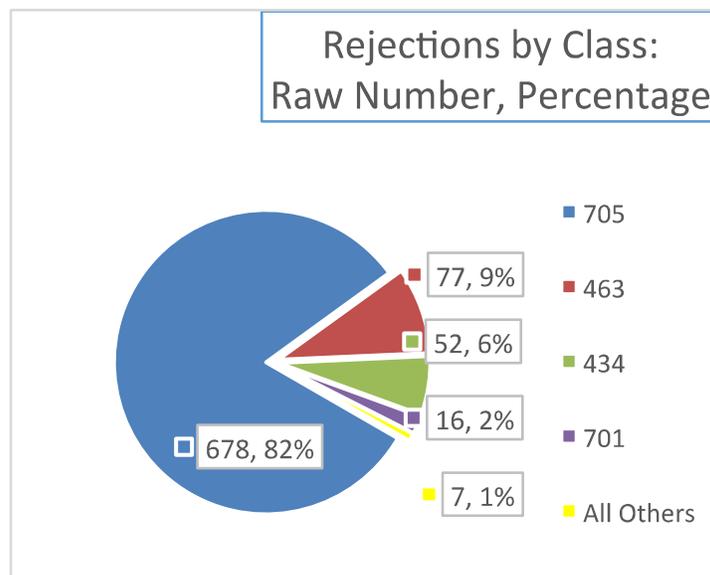


Figure 1: USPTO classifications of rejected applications

Classes and subclasses are the categories into which the USPTO examiners place patent applications.⁹ This system allows examiners and applicants to more efficiently find patents, which can be particularly useful when an applicant or examiner is looking for evidence of a “prior art” in an existing patent that might invalidate an application. Even though we have called them “general,” the classes are specific and the subclasses even more so. The 705 class, known in short hand as the business methods class, is officially titled “Data processing: financial, business practice, management, or cost/price determination.” Subclasses further refine these headings; in our dataset, for example 705/37 was the subclass most commonly rejected (57 rejections) and is aimed at “Trading, matching, or bidding.”

The data suggest that Commissioner Focarino’s “small group...most likely to be affected by the *Alice Corp.* ruling,” was initially assessed based on the applications’ classification. Among the withdrawals, three classes together—(class 434) classes—made up just under 98% of rejections. Business methods patent applications led the withdrawals, comprising 82% of the total; the Games class was next with 9% of the total; and 6% of the total came from Education patent applications; combined, these three groups account for 807 of the 830 rejections. Of the remaining 23 rejections, only the 16 applications in the Vehicle Computer class (class 701) saw more than one rejection, while the remaining 7 classes (709, 379, 706, 725, 345, 700, and 707, all of which relate to computer systems) only had one rejection each and together accounted for less than 1% of the total rejections.

It is unsurprising that business methods received significant attention from the USPTO, since the subject of *Alice* was patentability of a method of doing business. But the withdrawals of allowances in the other classes provide useful insight into the USPTO’s understanding of the case.

As an example, application 13/163,585 is entitled “Methods and Systems for Electronic

⁹ See U.S. Patent & Trademark Office, Manual of Patent Examining Procedure § 902 (9th ed. 2014).

Meal Planning,” and was assigned to class 434, Education and Demonstration, and subclass 127, Food. The claims, now withdrawn from allowance, relate to an automatic meal plan generator, where “automatic generation of the meal plan populates the plan more often with recipes having a user-selected higher frequency preference than recipes having a user-selected lower frequency preference and further based on a current time of calendar year”—in other words, meals are selected based on how much the user likes the meal and whether it is seasonal.

In rejecting the application under *Alice*, the examiner found that the claims were directed to “the abstract idea of a method of organizing human activities, ex. receiving a person’s meal preference, generating a meal plan based on the preference, and communicating the plan to the person.” Thus, it appears that the USPTO is taking a broad approach to the subject matter, encompassing such fields as meal planning.

2.3. Assignees of Applications

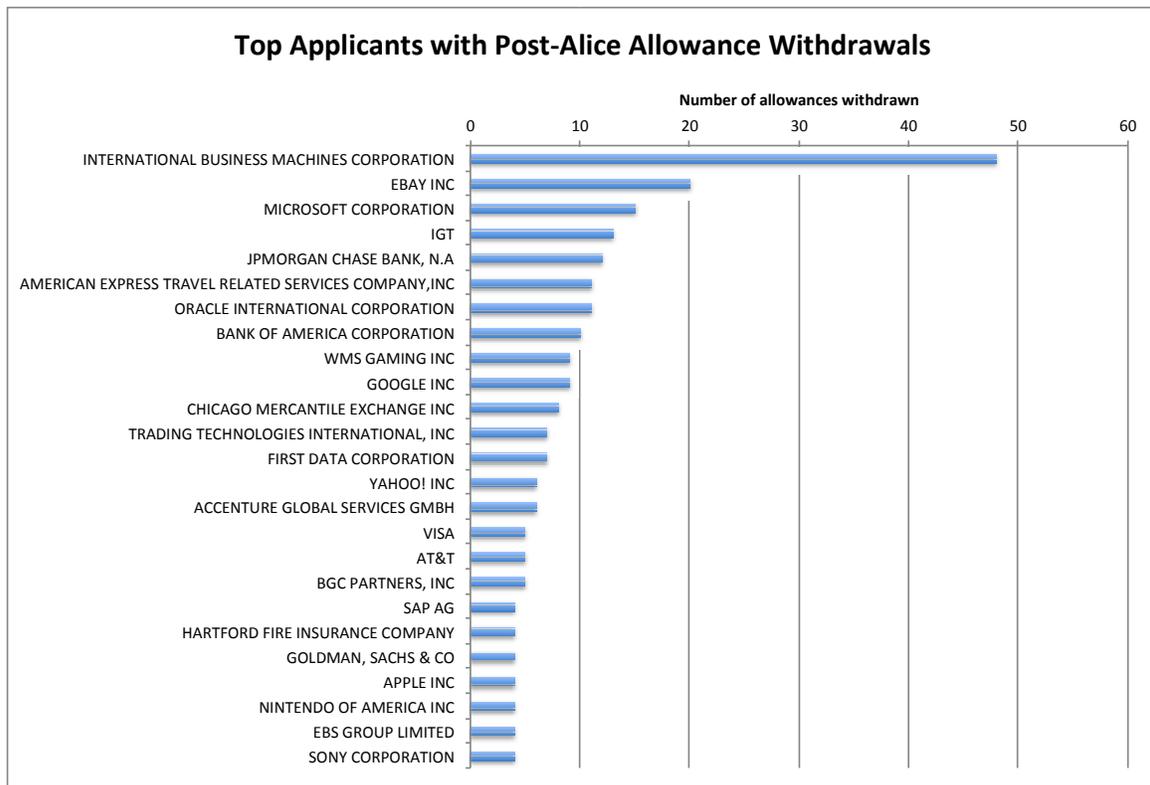


Figure 2: Assignees with the most withdrawals of allowances

While it is nearly impossible to certainly identify assignment of ownership for an application, we were able to obtain the names of the assignee listed on the cover of the publication.

Of the 830 applications in our dataset, 541 (65%) listed an assignee. 284 different legal persons were listed, from well-known financial institutions, to technology conglomerates, Universities, and smaller, relatively unknown, entities like Jackson Fish Market, LLC. 77% of these entities (218 of 284) were named in only one of the rejected applications, and only 2.5% (7 of 284) were named in ten or more applications.

Figure 2 shows some of the most frequently occurring assignee names in our dataset. The top ten assignees in the data set accounted for nearly 30% of the rejected applications, and the top 25 accounted for 43%. Every assignee in the top ten was a major, publicly traded corporation.

Unsurprisingly, IBM, eBay, and Microsoft were the top three assignees, named in 47, 19, and 15 applications respectively, together representing just under 15% (83 of 541) of corporate applicants. Less expectedly, the major gaming companies IGT (International Game Technology) and WMS Gaming, both slot machine manufacturers, also show up in the top ten, perhaps reflecting an industry shift from physical game devices to online or computer services. Finance companies, such as J.P. Morgan, American Express, and Bank of America, also appear in the top ten, reflecting the impact of *Alice* on financial services patents.

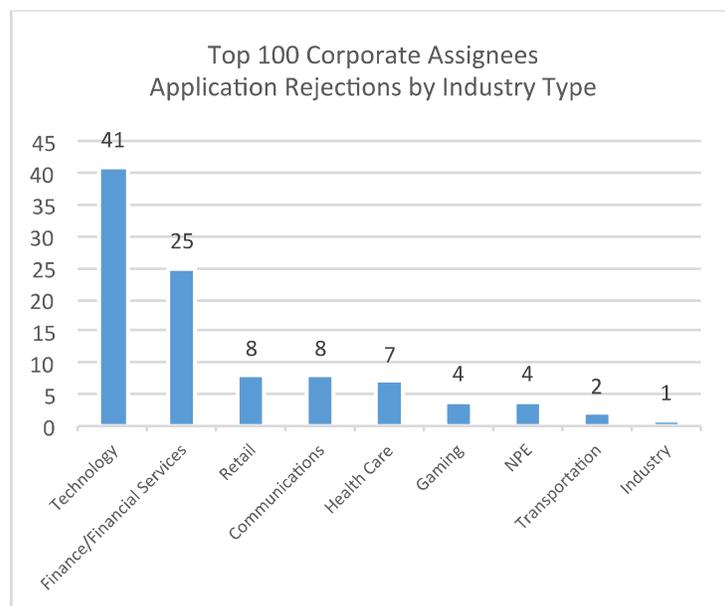


Figure 3: Industry classifications of assignees of applications

We also categorized corporate assignees by industry using classifications provided by NASDAQ and Bloomberg;¹⁰ those results are shown in Figure 3. Unsurprisingly, technology and finance are the most common industries for applicants with withdrawn allowances, but unexpectedly, industries such as health care, consumer durables, and public utilities also show up. Reviewing the full list of assignees confirms the presence of these outlier industries: the list includes companies such as McKesson Technologies, Wal-Mart, and Mattel.

One may wonder how the manufacturer of Barbie has a patent application rejected under *Alice*, but a look at the particular application, No. 13/633,018, is instructive. The abstract of the application describes a “remote control for use with a media player,” hardly words for the general-purpose computer described in *Alice*. But the claims belie that particularity, reciting general concepts as “a controller; an input coupled to the controller; a transmitter coupled to the controller; [and] a receiver coupled to the controller,” the whole of which receives and transmits various signals.¹¹ That such broadly claimed technology could be

¹⁰ See *Companies by Industry*, Nasdaq (last accessed Oct. 28, 2014), <http://nasdaq.com/screening/industries.aspx>; Bloomberg (last accessed Oct. 28, 2014), <http://bloomberg.com>.

¹¹ Claim 1 as allowed in that application reads:

patented before *Alice*—remember that this application was headed to grant—was apparently a sufficiently attractive inducement to draw in applicants as far outside of the software and high-tech fields as Mattel.

2.4. Timing of Withdrawals of Allowances

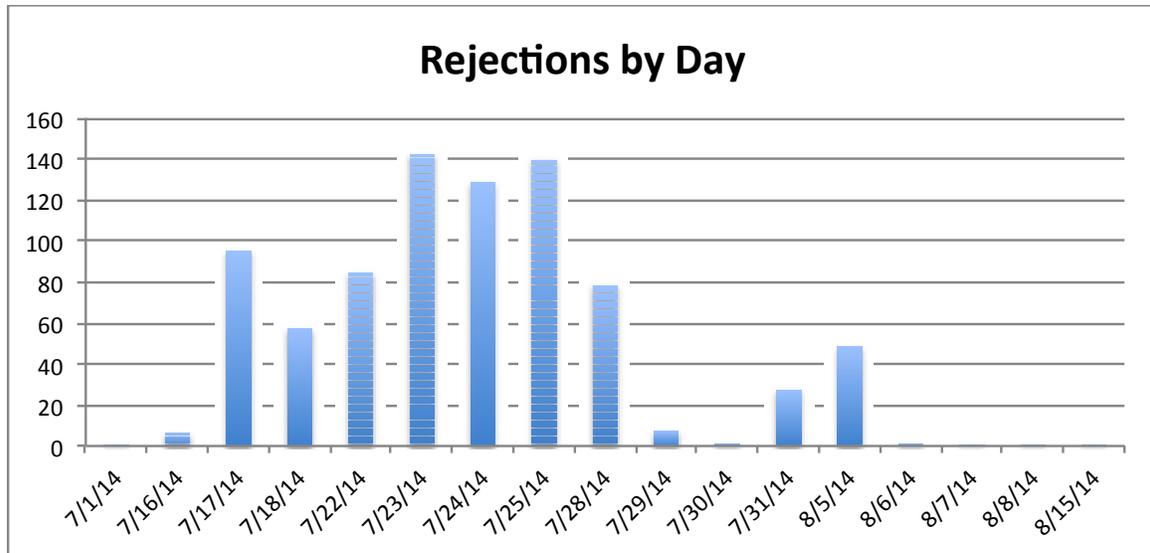


Figure 4: USPTO timeline of rejected applications

The timeline of rejections also gives some insight into the PTO's review process. As shown in Figure 4, the number of rejections over time follows a bimodal distribution, with an initial peak on July 23rd (143 rejections) and a second, smaller, peak on August 5th (49 rejections). The ten day period of July 22 through July 31 was the most continuous, and saw 74% (614 of 830) of the rejections. (There were several gaps between the dates shown in the figure; these are likely explained as holidays or vacation periods for examiners.)

Perhaps the most interesting result from our analysis was the discovery that on each of the 17 days on which there was a rejection, at least one business methods (705) patent application was rejected. This stands in stark contrast to the other classes: while the Vehicle

1. A remote control for use with a media player coupled to an output device, wherein the media player is configured to receive signals from the remote control, to read and execute information stored on a game medium, and to cause the output device to transmit one or more generated signals in response to reading and executing portions of the information stored on the game medium, the remote control comprising:

a controller;

an input coupled to the controller;

a transmitter coupled to the controller;

a receiver coupled to the controller;

wherein the controller is configured to selectively operate in:

a first mode that causes the transmitter to transmit a signal upon user actuation of the input; and

a second mode that prevents the transmitter from transmitting signals upon user actuation of the input; and

wherein reception of: a first generated signal by the receiver causes the controller to operate in the first mode; and a second generated signal by the receiver causes the controller to operate in the second mode.

Computer (701) and Games (463) classes saw rejections on five days, the other classes (345, 379, 434, 706, 707, 709, and 725) only saw rejections on one day each. This discrepancy suggests to us that the USPTO started its post-*Alice* compliance review by looking first to the 705 class, then broadening the search criteria as each withdrawn allowance suggested related terms or concepts that pointed to other applications or patent classes. Though this observation is speculative, we believe that it best explains the daily consistency of 705 rejections as compared with the inconsistency of rejections for other classes.

2.5. Priority Count and Pendency

Examining the age and priority counts for patent applications within our dataset also yielded some interesting results.

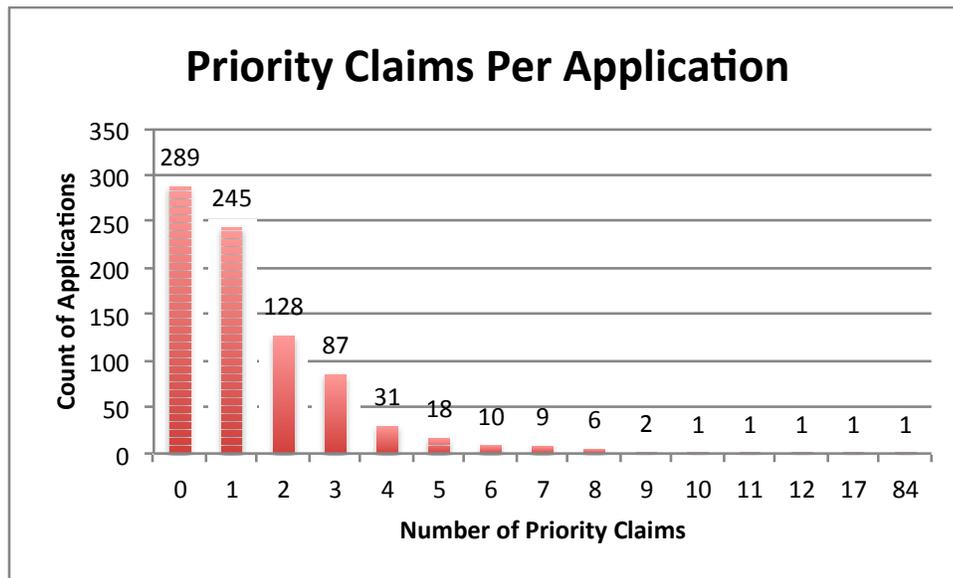


Figure 5: Number of priority claims per application

As shown in Figure 5, about 35% of the applications were original filings (having zero priority claims). About 30% claimed priority to one application, 33% to between two and six applications, and 2.6% to seven or more. At the higher end, one application included seventeen priority claims, and another had a whopping eighty-four claims. The mean number of priority claims was 1.57; the median was 1.

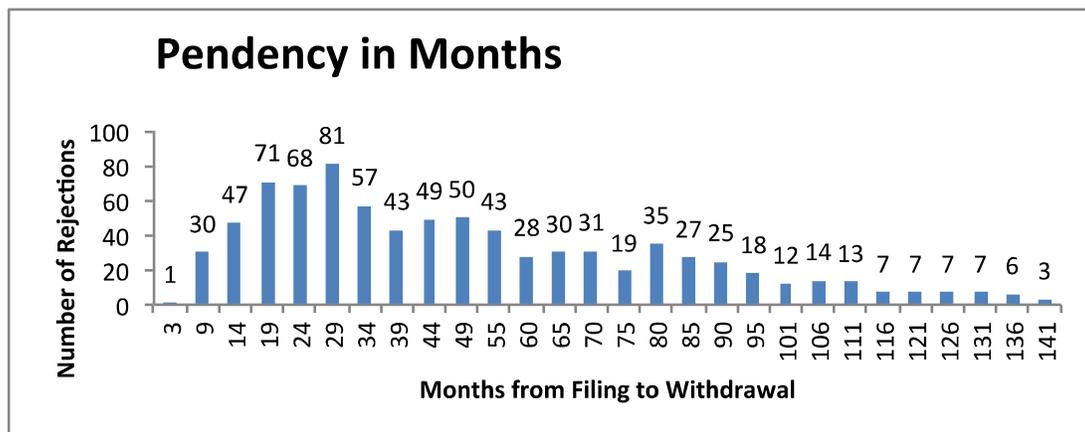


Figure 6: Pendency from initial filing to withdrawal of allowance

Age of the applications, as measured by time between initial filing and date of withdrawal of allowance, was much more evenly distributed. As shown in Figure 6, 45% of rejected applications had been pending for less than 3 years; 31% were 3 to 6 years old; 18% (149 of 830) were 6 to 9 years old; 5% were 9 to 12 years old; and only one sat pending for over 12 years.

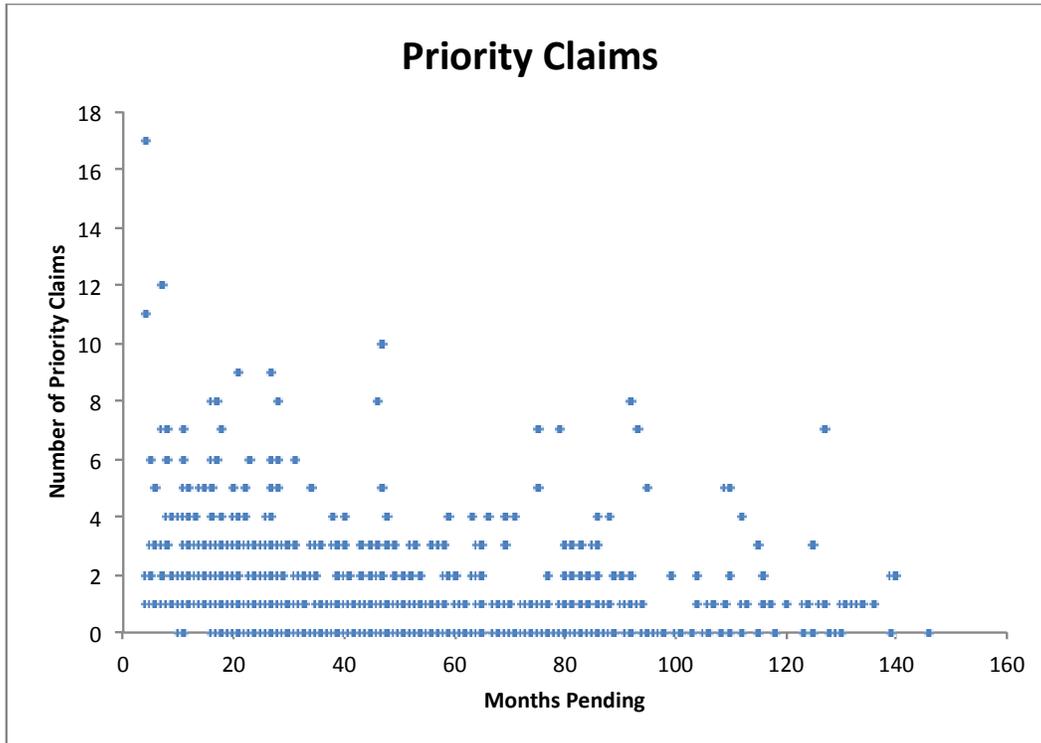


Figure 7: Number of priority claims plotted against pendency time, ignoring one outlier

Figure 7 compares pendency time with number of priority claims. There was only a small negative correlation ($r = -0.15$) between age and number of priority claims, though the correlation increased in magnitude to $r = -0.25$ when we removed the outlying 84-priority-count patent application (leaving the new maximum number of priority claims at 17).

This negative correlation confirms the conventional wisdom that continuation applications tend to issue more quickly, because the examiner can refer back to prior applications to identify patentable matter. But the weakness of the correlation suggests that the relationship is not so simple or straightforward. Further analysis would be necessary to distinguish, for example, priority chains that include issued patents from those that do not.

Some facts about the application with 84 priority claims may be of interest. The application, 13/459,179, relates to targeted advertising on “mobile communication facilities.” Its priority claims, which date back to 2005, include 25 issued patents, nine provisionals, 37 abandoned applications, and 13 still pending applications. Aside from indicating the scale of the burden on examiners, who are charged with reviewing the claim of priority, this application exemplifies in exaggerated form the limited nature of the USPTO’s action. Although many of those 25 issued patents and 13 pending applications likely raise issues under *Alice*, none of them were reconsidered because they did not fall into the narrow window of applications allowed but not yet granted.

3. Conclusions

Examining five different factors from this expansive dataset allows us to draw some preliminary conclusions that may be of use to both practitioners and academics. These five elements, classification, pendency, priority chain length, ownership, and timeline, represent different parts of the “story” behind this group of rejections, and each takes a slightly different look at the USPTO’s interpretation of *Alice* and, perhaps more interestingly, the body of patent applications before the Office at the time of the decision.

Unsurprisingly, we found that business methods patents were particularly vulnerable to rejection. However, the diversity of USPTO classifications in the withdrawn allowance data set indicates the range of subject matter that is suspect under *Alice*. In many fields it is apparently common to draft “computer-plus” patents that inappropriately try to take a monopoly on abstract ideas, fundamental economic practices, or methods of organizing human behavior by carrying out bare concepts on a generic computer, at least in the interpretation of USPTO examiners.

The pendency and priority chain data possibly illustrates the unique nature of the application pool that falls within the *Alice* ruling, and also demonstrates the limited nature of the USPTO’s withdrawal action. Although this study was limited by the lack of comparison against a baseline set of applications, the large fraction of applications claiming priority to multiple previous applications suggests that applicants are likely repeat players seeking multiple angles of patent protection out of each application. This hypothesis is further strengthened by the large number of major corporate assignees, as well as the substantial number of outlier applications with long priority chains. Additionally, the high number of priority applications is but one indicator that this round of withdrawals of allowances must be compared against a much wider pool of pending applications and granted patents that also raise potential *Alice* issues, but may not be tested for months or years to come.

The identities of corporate assignees affected by this action was also revealing about the state of patenting activity today. One would have expected that software companies would bear the brunt of the USPTO’s withdrawals, and that was in fact the case. But the presence of numerous diverse industries and companies in the list of affected assignees speaks both to the breadth of the *Alice* ruling and, perhaps more importantly, the attractiveness of business methods patents that lured all sorts of companies into that field of applications.

Finally, the timeline data appears to be indicative of the internal processes by which the USPTO is implementing the *Alice* decision. The timeline brought the USPTO’s apparent focus on business methods patents out of a large and complicated set of applications. While the timeline cannot directly speak to what the process was, it does provide us with a light, however weak, to shine on the patent application process. Our data suggests that the USPTO did not simply focus on a small group of classes, but instead set the business methods class as the starting point of their investigation, discovering other relevant fields of art such as gaming and education. This again suggests that the problems brought to light by *Alice*, namely the erroneous patenting of abstract ideas tied to generic technologies, was widespread across many different fields and industries.

Though our dataset was rich, we did not engage in a thorough and in-depth analysis, but merely scratched the surface. Several further avenues of research are apparent, including comparison against a baseline set of non-rejected applications in comparable fields of technology, systematic review of the claimed subject matter, and, as these applications

move forward in the examination process, analysis of applicant strategies for responding to *Alice* rejections. As the reader is certainly aware, patent law is not static, and it behooves the interested parties to keep tabs on how examiners and applicants are interpreting judicial holdings and applying them as time moves forward. Much as *Alice* herself, we must keep our heads.