Patent Value Analytics: Algorithms and Applications

January 18, 2016
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Four Part Presentation

• What is the problem with Algo-based Valuation of Patents
• What Analytics/Algorithms are bad at....
• What Analytics/Algorithms are good at...
• Suggested approach to Valuation using Analytics/Algorithms
Challenges with Patents

• Patents have intrinsic value
  - Locked away in the form of text/claims & images

• Patents are numerous
  - It is time consuming to read one alone

• Patent claims can be very broad
  - Claims can attach to a number of outcome

• Patents also require tending
  - System is designed to put them in public domain
Challenges with Patents-Personal

- What is valuable to one isn’t valuable to others
- Design around is often available
- Also much of what is patented isn't detectable
- Overall, patents require an understanding of its contents
Challenges with Patents—Risk/$$$

• Bad patents cost as much as good patents
• Everyone is afraid to let a bad patent go
• So patent budgets enter a twilight zone
  o Costs to maintain go up
  o New filings costs suffer
• No one really wants to pay for human analysis

So enter the algorithms
Types of Algorithms for Valuating

- Cluster
- Categorize
- Compare/Cross-Reference
- Sort
- Suggest
- Statistically Present Citations/Classes
- Data Collection & Basic Analysis
What Algorithms Do Poorly…They CANNOT:

- Provide a real valuation of a patent
- Tell you how much someone might pay
- Tell you how broad a claim is against a product
- Tell you if you are going to win a litigation
- Tell you if someone will license the patent
- Tell you which field is correct when comparing data
- Always tell you the current patent owner/applicant

However, they can get you started!
Training Algorithms

• Using Subject Matter Experts (SME)
  o Algorithms can produce human quality suggestions/sorting of documents
  o The more data that is categorized
    ➢ The better the algorithm is at recognizing important things

• Watson is a trained data model QnA system
  o More on this later
Algorithms are much more useful when trained

• Training includes
  o Harvesting Human Subject Matter Expertise
    ➢ By purposeful experiment
    ➢ By social statistical review
    ➢ Monitoring Transactions/Structured Data (Insurance Claims)
  o Using taxanometric constructs
    ➢ TOC
    ➢ Classifications
What happens without fully trained models

Watson isn’t sure if this is a cow or a bird

<table>
<thead>
<tr>
<th>Classifier</th>
<th>Confidence Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal</td>
<td>69%</td>
</tr>
<tr>
<td>Cow</td>
<td>68%</td>
</tr>
<tr>
<td>Vertebrate</td>
<td>67%</td>
</tr>
<tr>
<td>Natural_Activity</td>
<td>66%</td>
</tr>
<tr>
<td>Bird</td>
<td>65%</td>
</tr>
</tbody>
</table>
What happens without training

• We see a patent drawing

Watson sees...
What Algorithms do Well

- Clustering Words and their Synonyms
- Finding patterns
  - Semantic or otherwise
- Claims v other Claims
- Similarity (more like this)
- Citation Impact
  - Examiner/IDS
- Portfolio Statistics
- Data Comparisons
What do we use algorithms for?

• **Starting points in Analysis/Speed**
  
  o Give me everything that looks like this patent....
  o Above a certain threshold of similarity
  o After or before a specific date (prior art)
  o That have been cited more than 15 times
      ➢ by Examiners in Art Unit 3628
  o And have overcome an Alice rejection
  o And have been litigated or challenged in IPR
  o Gathering bulk data
  o Comparing client data to public data
  o Making an initial determination on ownership
Algorithms assist in determining asset impairment

- Missing or incomplete assignments
- Inventors working at the competitor
- Prosecution Metrics
  - # of RCE
  - # of OA
  - # of Restrictions
- Incorrect data affecting renewal or prosecution deadlines
Ultimately SME is necessary

- Does a patent say tech “x” but cover tech “y”
- Does the infringing product satisfy the “all elements” rule
- Should I keep this patent?
  - This patent covers this product of my competitor
- What was disclosed v. what was claimed
- What is this worth? And WHY?
  - company a($$$) or company b ($) 
- Resolve differences in data comparison
- Determine the proper chain of title or ownership

Beware on relying on a Patent Strength/Patent Score
Suggested Approach to Analytic Supported Patent Valuation

• Sort and Compare Portfolio against a Target Product /Company
  o Identify Statistical and Semantic Prospects (M)
  o Identify Target Evidence of USE (SME assisted by M)
  o Identify potential prior art (M), (SME assisted by M)

• Segment out high potential matters(SME assisted by M)
  o Map against Product(SME assisted by M)
    ➢ Claim Scope/Design Around /Detect
  o Map against Targets Portfolio (SME assisted by M)
    ➢ Claim Scope/Design Around/Detect

• Engage a professional valuation expert (SME)
  o Receive a professional valuation of just the matters that matter

• Rinse & Repeat for Next Target
Analytics Excellence Webinar Series

Discussion & Questions
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Using Analytics as a Patent Annuity Decision Tool

February 8, 2017
1 PM (Central)