Episode 06:
Using Blue Ocean Maps to Identify Open Spaces in the Patent Landscape

Patent Analytics Webinar Series
8–Episode Webinar Series

**Episode 01** - Techniques and Analytics for Identifying Valuable Patents and Patents to Abandon
*Thursday, April 16, 2020 at 12:00 PM CT*

**Episode 02** - Using Patent Landscapes to Develop IP Rich Products and Valuable Patent Positions
*Thursday, April 30, 2020 at 12:00 PM CT*

**Episode 03** - Using Prosecution Analytics to Improve Prosecution Efficiency and Identify Wasteful, Unproductive Prosecution Spending
*Thursday, May 14, 2020 at 12:00 PM CT*

**Episode 04** - Using Examiner Analytics to Improve Prosecution Efficiency and Develop Well-informed, Data-Driven Prosecution Decisions and Strategy
*Thursday, May 28, 2020 at 12:00 PM CT*

**Episode 05** - Best Practices for Developing Reliable Freedom-to-Operate Landscapes and Advanced Techniques for Interactive, Reusable BOA Mapping
*Thursday, June 11, 2020 at 12:00 PM CT*

**Episode 06** - Using Blue Ocean Maps to Identify Open Spaces in the Patent Landscape
*Thursday, June 25, 2020 at 12:00 PM CT*

*Thursday, July 9, 2020 at 12:00 PM CT*

**Episode 08** - Using Patent Prosecution History Reports to Increase Prosecution Efficiency and Avoid Unintended Estoppel
*Thursday, July 23, 2020 at 12:00 PM CT*
Today’s Presenters...

Steve Lundberg  
Principal & Chief Innovation Officer  
Schwegman Lundberg & Woessner

Thomas Marlow  
President, Renewals  
Former Chief Patent Counsel of  
Fairchild Semiconductor  
Black Hills IP

Mark Stignani  
Analytics Chair & Firm  
Compliance Officer  
Former Chief Patent Counsel  
Thomson  
Schwegman Lundberg & Woessner

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Blue Ocean Analytics are the identification of development or invention space by determining:

a) where no/few patents exist AND
b) where innovation in that space will benefit the company*

* In any machine commercial solution, b) isn’t provided

What exactly are Blue Ocean Analytics and what are they used for?
What you will learn today

• Practical methods of Blue Ocean/Red Ocean mapping
• When they are most useful
• Strategic insights/Business Actions Available
• Overview of tools
Questions Answered

- Can we find new areas to patent in
  - Will it help our company
- Is there an alternative innovation space for my product
- Where can I innovate that has few patent obstacles

Use Cases

- R&D Investment
- New Product Development/Patent Planning
- New Feature on Existing Product
- Missed Opportunity Discovery
# WHAT IS A BLUE OCEAN?

## RED OCEAN VS. BLUE OCEAN STRATEGY

<table>
<thead>
<tr>
<th>Red Ocean Strategy</th>
<th>VS</th>
<th>Blue Ocean Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compete in <strong>existing</strong> market space.</td>
<td><strong>vs</strong></td>
<td>Create <strong>uncontested</strong> market space.</td>
</tr>
<tr>
<td><strong>Beat</strong> the competition.</td>
<td></td>
<td>Make the competition <strong>irrelevant</strong>.</td>
</tr>
<tr>
<td>Exploit <strong>existing</strong> demand.</td>
<td></td>
<td>Create and capture <strong>new</strong> demand.</td>
</tr>
<tr>
<td><strong>Make</strong> the value-cost trade-off.</td>
<td></td>
<td><strong>Break</strong> the value-cost trade-off.</td>
</tr>
<tr>
<td>Align the whole system of a firm’s activities with its <strong>strategic choice of differentiation or low cost.</strong></td>
<td></td>
<td>Align the whole system of a firm’s activities in <strong>pursuit of differentiation and low cost.</strong></td>
</tr>
</tbody>
</table>

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Caveat on Blue Ocean Analytics (BOA)

- Red Oceans are generally profitable
- Blue Oceans may not equal revenue
- Patents alone may not be the whole story
  - NPL review is critical
- Beware the fishing expedition
  - If you don’t have a sense of where you are
  - And how you can transform
  - BOA will become very expensive
Spatial Concept Maps are not Blue Ocean Maps

- Contour lines do not connote relationships
- Valleys are not white space
- Pretty but not explainable
- Does not quantify disclosure
- Hard to explain…..
  - tf-idf / k-means clustering
  - Force-Directed Placement
- Difficult to teach to C-suite

https://patinformatics.com/machine-learning-in-patent-analytics-part-3-spatial-concept-maps-for-exploring-large-domains/
Blue Ocean Fundamentals

Start with a plan of where you want to look
• Have R&D/Marketing engaged at the beginning
• Develop a searching strategy/hierarchy
• Develop a set of “don’t care” items to limit review costs
• Use a taxonomy to capture where to look

Develop a review process
• Blue Ocean is most effective when it iterates
• Revise your taxonomy as more parts become “don’t care” items

When to start a Blue Ocean Analysis
• Do I design a product first?
• Or do I first do the BOA first?

Avoid the Fishing Expedition
How Deep Do I Go?

BOA should be considered at different depths of inquiry:

- Taxonomy based review (Using a beer maker example)
  - Top level review: All biotech organisms that produce alcohol $$$$$
  - Next level review: All of the organisms that use grains as biomass for alcohol production $$
  - Sub level review: All organisms that could produce alcohol from grain $$
  - Sub level review: All organisms that could produce a hop flavored ester $$
  - Sub-Sub level: Any overlap between hop and alcohol organism list. $

Each level has pros and cons:

- Top level review is a complete answer to a question posed by Management
- Next level might be a good enough answer
- Sub level answer might answer what a company is able to make a transition to
- Sub-Sub might be what is profitable
Blue Ocean Beer Simple Taxonomy
Blue = Good  Red = Don’t Care

Bioorganisms that produce Alcohol

- Commercially Used: Patented
  - can also produce Esters?
  - Commercially Used: Not Patented
    - can also produce Esters?
    - Not Commercially Used
      - can not produce Esters?
    - can not produce Esters?

Biotech Processes

- Commercially Used: Patented
  - can also produce Esters?
- Not Commercially Used
  - can not produce Esters?
- Commercially Used: Not Patented
  - can also produce Esters?
  - can not produce Esters?
Finding the Relevant Art: Iteration

Using keyword/semantic search:
- Perform iterative keyword searches
- Zero in on most relevant search results

Using forward/backward citations
- Starting with set of relevant art, do forward/backward citation analysis
- Reiterate

Using time-based criteria
- Find inception point for the technology
- Search in that time period

Using competitors and or tech sectors
- Search competitors
- Search by CPC classification
Filtering the First Cut

• Filter out irrelevant results/don’t care conditions
• Identify the relevant results to analyze for BOA
• How to filter:
  • Review stacks of printed patents
  • Review folders full of PDF’s
  • Review in a dashboard
  • Review in a spreadsheet
Reviewing the "Pile" for BOA

**Old fashion way**
- Look at each patent one by one with design team
- Identify ways to avoid each patent
- Write up a report
- Start over if design changes from scratch

**Better way:**
- Review an interactive spreadsheet-based BOA map that keys off of key novelty of each patent
- Patent coverage stated in terms readily understood by engineers/scientists
- Note relevance or non-relevance of each patent
- Reiterate design ideas as many times as you want
- Update map as new patents issue
- Reiterate again
BOA pitfalls/tricks

Avoid

• Snapshot/One-N-Done
  • Consider Evergreen BOAs
• Single Source Searches
  • Patents/NPL/TM/Web
• Relying on BOA searches alone
• Only using legal team

Do

• Use your/competitor glossary
• Develop Core Concepts
• Develop Synonyms for Claims
• Partner with your Technologist
• Understand equivalents in claims
  • Review File Histories
How Spec Disclosure levels define BOA

• Disclosure level defines how blue is the ocean

• Disclosure between Specification/NPL may be…
  o Abstracted
  o Harmonized
  o Mapped

• Disclosure levels may be assigned to your taxonomy
  o Similar to case law headnotes

Start Over

Yes
Design Change

No
Done

First concept of first specification

Concurrent

Map
Scope Concepts
Features

Design Change Merely Changes Applicable Concepts

Since Disclosure Levels Are Mapped To Specification You’re Almost Done!

What is claimed is:
1. A method, comprising:
   delivering an electric stimulus from a lead situated within a body to a peripheral nerve at a controlled rate, wherein
   the electric stimulus is delivered to a region proximate a wall of a heart, wherein the electric stimulus is
delivered from an electrode on the lead, the electrode being located on or within the heart.

Disclosure Concepts
• What the spec discloses
  o Limitations
  o Varying Levels of Abstraction

Claimscape® Mapping

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Output of BOA Mapping

• **Interactive Excel Spreadsheet**
  - Usable by anyone
    - Outside Patent Counsel
    - Inside Patent Counsel
    - Engineers!!!
    - Best Practice = Outside Patent Counsel + Inside Patent Counsel + Engineers
  - Charts the who/what/when/where of BOA disclosures
  - Easily updatable as new patents issue
    - “Chart once, use forever”
## BOA Report Mapping Format

<table>
<thead>
<tr>
<th>Title</th>
<th>Title X</th>
<th>Title X</th>
<th>Title X</th>
<th>Title X</th>
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<td>Patent#/Reference#</td>
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<td>COMPANY #2</td>
<td>COMPANY #2</td>
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<td>COMPANY #2</td>
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<tr>
<td>Filing Date/Effective Date</td>
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<td>Dec 01, 1995</td>
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<td>Priority Date</td>
<td>Total Claims/Paragraphs</td>
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<td>37/113</td>
<td>6/110</td>
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<td>Type Of Entity</td>
<td>No. Of Claims (Independent)</td>
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<tr>
<td>DISCLOSURE DENSITY</td>
<td>Patents Mapped</td>
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<td>Bioorganisms that produce Alcohol</td>
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<td>Bioorganism #1 that produce Alcohol</td>
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<td>Bioorganism #2 that produce Alcohol</td>
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<td>Bioorganism #3 that produce Alcohol</td>
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<td>Modified Bioorganism #2 that produce Alcohol and Esters</td>
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<tr>
<td>Modified Bioorganism #3 that produce Alcohol and Esters</td>
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</tr>
</tbody>
</table>

### Prior Art Ontology

- Individual Patents (separated by violet and white columns)
- Noted densities in Specs

### Key

- High Density
- Low Density
- No Density noted
Key Take-Aways

- **BOAs involve Multi-sourced Highly Nuanced Data**
  - Detailed Human Analysis - Required
  - Resolve Data Inconsistencies by Hand
  - Claims are Key

- **Machine BOA Mappings are problematic**
The Schwegman Analytics Advantage

SLW has been helping its clients find and improve high value patents for over 20 years and has invested heavily in its Analytics processes and tools for the last decade and is now expert at helping.

• More efficient work
• Shorter timelines
• Higher quality and key strategies
• IP Operations
• Fixed Fees/AFAs
• Tracking metrics
• Non-traditional providers
Thank You For Your Interest
Questions?
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