Using Patents to Teach Engineers Innovation & Invention

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Engineering Enterprise Through IPRs

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Sanity Check

Why Teach Patents to Engineers?
A Changing World

☐ The World *is* Flat!

☐ Engineering may be outsourced
  - Engineering Services Outsourcing (ESO) to India can attract some $50 billion

A New Vision

☐ The essence of strategy is difference you can preserve (M. Porter)

☐ This applies to engineering.
Goals

- A need exists to:
  - Differentiate &
  - Create Wealth

The Role of Patents

- Patents can be used to teach
  Examples of
  - Differentiated design (Dym et al., 2005)
  - Legal title to innovations with commercial significance (Conley & Orozco, 2007).
Prior Research

- Patents are undervalued tools to teach Design & Wealth Creation opportunities. (Garris, 2001)

Garris’ Findings

- “Patent literature shows in detail the very best design.”
- “Seeking alternative designs... is good design practice.. in the beginning of design.”
- “There is a legal minefield.”
- “keen understanding of the patent system [would allow engineering] to become a very lucrative profession”
Obstacles

- Patents are a legal concept
- Engineering faculty are not comfortable with patents
- How to bridge the abyss??

The Solution?

- Reading lots of patents
- Preferably those with rich histories
- Conferences like this!
Our Experience

- Innovation & Invention - IDEA 395

Our Experience

- We try to validate the findings expressed in Garris, 2001
A Vast Repository of Design

- Patents offer a large technical knowledge stock of Prior Art
  - This is our Text!

- Each patent offers a design challenge section relative to prior art, called “Background of the Invention”.

Alternative Solutions

- Each patent specification offers alternative embodiments.

- These are reflected in the claims as well: e.g. method/product/system claims
Lawsuits (aka No Trespassing!)

- Most of the selected patents have been litigated and licensed
- The claims provide legal title.
- Knowledge of the legal ground rules of the patent system offers advantages: continuations (Black & Decker Snakelight) (Conley & Orozco, 2007)

Note: Semantic Differential

- A word on patent language, especially claims
- The semantic differential
- A good intro to relativism and its ties to design.
- Can be a fun and powerful learning tool.
Commercial Relevance

- Each selected patent offers a unique insight into commercial advantage
  - Lower manufacturing cost - better features - protected business method - early stage of technology & broad claims - standards.

- Patents teach the engineers what is patentable, how, and why they should exploit the intellectual property system to their advantage.

Summary

- There is a foundation for building the course as a subject around the world.

- We need more interdisciplinary collaboration and engineering “buy-in”

- We welcome your feedback
Albert Einstein

“Within every great challenge lies opportunity.”

Thank You!

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References