Detecting disruptive innovation in Idea Management Systems

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Lately we have had less updates to our Gi2MO software family and focused more on longer term research on Idea Management Systems. Today we are happy to share results of our latest experiments on idea organisation.

In the past, we presented several approaches for automatic selection of successful and/or interesting ideas (eg. via sentiment analysis or idea taxonomy). As the problem remains unsolved to a great extent, we still see this as valid direction for research. Yet, **this time we would like to propose something quite different: search for disruptive innovations**.

So what are disruptive ideas ? The term was coined by an American scholar Clayton Christensen and in nutshell pertains to innovations that redefine industries and shakeup the status quo of what was considered as successful up until then. Some examples presented by Christensen and others are: Netflix disrupting video rental market with online streaming; Apple iPhone disrupting the laptop industry as an internet access terminal; Wikipedia disrupting traditional encyclopedia market; Kodak falling victim to digital photography; or discounter marts such as WalMart disrupting department stores.

Looking at those prominent examples and the magnitude of their success, it seems like trying to find such ideas might be quite a good direction. So how to do that ? Christensen and other scholars exploring the topic, left us some hints by characterising and explaining how to identify disruptive innovation. **Some notes we took and got inspired include:**

- disruptive innovations are not targeted at satisfying needs of well established customers in the industries they disrupt
- disruptive innovations are very different from sustaining (incremental) innovation in well established companies which favour to retain their customer base
- disruptors deliver innovations for overlooked market segments by market leaders

Taking note of those points, how can we contrast them with the motivations and content of companies that deploy Idea Management Systems? Aren't those frequently established market players that not uncommonly would pretend to leader positions ? The same leaders that Christensen points as ones failing at disruption and falling victim to smaller companies ingenuity. Well, yes but turns out not always: examples of Apple and Amazon paint a different picture with those established enterprises portrayed as disruptors in new market segments relative to their core business.

Ok, so we are motivated and roughly know what to look for but given all that ... how to actually make all this work in the technological reality of Idea Management Systems – how to find disruptive innovations in Idea Management submissions? After all, previous studies have shown the majority of Idea Management content is small incremental ideas that relate to satisfying needs to well attached customers. Wouldn't it be hard to find disruptive innovations in all this mess, given they are such a minority and almost the exact opposite of what resides in IMS?

Well, **our Gi2MO answer to disruptive innovation problem is Outlier Detection!** In broad terms, it's a technology that aids looking for anomalous data samples; researched since quite a long time with frequent applications in fraud detection, intrusion detection and hardware defects analysis. We see the capabilities of those algorithms to detect unique and rare data samples as an answer to finding interesting disruptive ideas that are nothing like the bulk of user submissions proposed in Idea Management Systems.

Connecting the theories of Christensen with the concept of outlier detection, we did a series of experiments, testing multiple algorithms and come up with some recommendations for most successful approaches and how to implement them in Idea Management Systems.

If you would like to know more we recently got a paper accepted for publication in a scientific journal called International Journal of Web Based Communities. The article describes all our experiments and results, under the title:

"In Search of Disruptive Ideas: Outlier Detection Techniques in Crowdsourcing Innovation Platforms" by A. Westerski and R. Kanagasabai. International Journal of Web Based Communities, 2019 Vol.15 No.4, pp.344 – 367

As soon as the full-text article is published by Inderscience and becomes available online in the next issue of the IJWBC journal, we will link the manuscript for download here.

Update: Article is now online available at Inderscience, optionally you can also get the pre-print version here.

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