The open source and graph database revolutions: How software companies use knowledge as a strategic asset

Description: Introduction

This case study examines two concurrent trends. Firstly, how software companies have used open and closed innovation strategies to manage their knowledge portfolios and secondly, the increasing popularity of graph database systems as used by Google, Facebook and eBay. The report focuses on the strategies of Neo Technology, Inc. and Objectivity, Inc.

Features and benefits

- Provides a history of database management systems and how they have evolved as the demands of technology companies have increased.
- Looks at two competing systems of innovation management, open and closed strategies, in the context of the software market.
- Details the specific strategies used by the companies behind Neo4j and InfiniteGraph, two prominent graph database products.
- Demonstrates the ability of technology companies to exploit the nature of open and closed innovation policies at the same time.

Highlights

Oracle is the world's most popular enterprise relational database and the company's software and cloud revenue segment constituted 76% of the company's $38.3bn revenues in 2014. Graph databases have the potential to disrupt the dominance of relational databases, which have been the leading format for storing digital information since the 1970s.

Google's famous PageRank algorithm uses only around 15 lines of code to mine the Pregel graph database for website recommendations, dealing with trillions of vertices and edges at once. Facebook now uses Apache Giraph, the open source offshoot of Pregel, to analyze the social graph.

Objectivity, Inc. and Neo Technology, Inc. manage their knowledge and innovation systems with opposing strategies. Neo Technology has been successful in maintaining a system of open innovation with its Neo4j product, whereas Objectivity has had to adapt its closed strategy to the open system in order to market its product on a wider basis.

Your key questions answered

- What are database management systems and why are they important? What is the current state of technology in the industry?
- What types of innovation strategies might a company use in order to make the most of its potential?
- What are open and closed innovation strategies and can they be used together? How have they been applied in the software industry?

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