Retreading Tire Management with Business Intelligence

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ABSTRACT

Justifying the development of a business intelligence system is challenging when the primary beneficiaries of the system are internal to the company responsible for that development; it is even harder to justify when the system is designed to produce a new service that is radically different than current in-house manufactured products. This case explores the possibility of a tire manufacturer developing a business intelligence system to help their customers manage very large heavy equipment tires within the mining industry. These tires are one of the biggest expenses for mining companies and this case discusses the opportunity to use business intelligence to manage that expense. This case encourages discussion of such topics as: the issues involved in system initiation from technology personnel, the need to incorporate both real-time and historical data in a system, the need for technology personnel to have deep knowledge of an application domain, and the challenges that arise from integrating data produced by disparate systems.

Keywords: Application Domain, Business Intelligence System, Disparate Systems, Radical New Service Products, Tire Company

INTRODUCTION

Jessica Crandall sat staring at her computer screen. She had what she believed was a wonderful idea to create a new business intelligence product, but she wasn’t sure if she could convince someone outside of the Information Technology Department (ITD) where she worked that a software product could be just as valuable to the organization as a physical product.

Jessica works for a company that focuses on making physical products – Western Tire Corporation (WTC). WTC manufactures and markets a wide range of tires for its three major divisions – a Retail Group focusing on selling tires for standard cars, a Commercial Group aimed at the trucking industry, and the World Mining Group which specializes in producing very large off-the-road (OTR) tires for the mining industry. The World Mining Group is different from the other two groups in WTC, because OTR tires are substantially more expensive and require a much different level of customer support than other types of tires. When the Retail Group at WTC sells a tire to Jane Smith who
owns a Honda Civic, all Jane Smith buys is a tire. When the World Mining Group sells a tire to Barrick Gold Corporation (one of the world’s largest gold mining companies), Barrick buys a tire and a support group to help Barrick make the best use of that tire.

As a business systems analyst working for Western Tire Corporation (WTC) in the World Mining Group, Jessica focuses on the work of tire support operations. Jessica uses computer technology to help managers of customer accounts (called “Tire Account Managers”) better support their customers, such as Barrick, by keeping track of the tires they are using, improving the use of existing tires and providing feedback for manufacturing better tires in the future. Jessica generates many reports that describe the status of tires at customer accounts so that the Tire Account Managers are better able to support their customers. Over the last three years of working with Tire Account Managers, Jessica has become very knowledgeable generally about tires and particularly about their use in the mining industry.

Jessica believes that while the reports she provides help the Tire Account Managers do their jobs, she could do much more for them. Sure, she keeps track of the placement of tires so that the Tire Account Managers have good inventory control capabilities, but most of the actual information she generates is based on historical data of tires that have already been retired and replaced. The Tire Account Managers rely primarily on their intuition and past knowledge to make important day-to-day decisions and Jessica is convinced that an integrated business intelligence system incorporating more real-time data could help make their jobs much easier. It is even quite possible that better information could really change how their customers use tires and run their mining operations. She thought that in the future, the WTC World Mining Group could sell a complete tire management business intelligence system (TMBIS) to customers along with tires. At the very least, WTC could make the use of the TMBIS so vital to customers that they wouldn’t dream of buying OTR tires from any other company.

The problem is that Jessica must convince the Director of Tire Support Operations (Martin Katzman) that this potential business intelligence application is worth spending about 180 hours of her time to investigate, plan, design and justify. Every hour of Jessica’s time in ITD (billed out to other departments at about $72/hour) is supposed to be allocated to an application area within the organization. Projects are identified and prioritized at the beginning of each fiscal year, and Martin has already budgeted for exactly what he believed he needed from ITD this year. While an additional $13,000 might not seem like much, Jessica knows that Martin won’t spend one extra penny on anything he believes is a frivolous expense. She also knows that even if she could persuade Martin to invest in a design and cost justification for a TMBIS, that the company had never developed a software product for commercial use and that it would be an even harder sell to convince the Vice-President for Business Initiatives that the WTC World Mining Group must market software in order to expand their tire business. She is excited about the opportunity, but doesn’t know how to market her concept of a tire management business intelligence system to those outside of ITD.

TIRES IN THE MINING INDUSTRY

The WTC World Mining Group manufactures and markets tires globally to companies ranging from precious metal gold mining operations to more common stone/granite mines. Any material that isn’t grown with agricultural or created artificially is probably mined, and that mining operation usually requires heavy equipment to function.

Large off-the-road (OTR) tires are one of the top five procurement expenses for a mining operation (Berndtson, 2008; Tattersall & Johnson, 2004). One copper mine in Arizona reported that tires composed 18% of their overall procurement expenses in 2008 (Interview with Mine Supervisor, 2009). Barrick Corporation
Fuzzy-Neural Cost Estimation for Engine Tests
www.igi-global.com/chapter/fuzzy-neural-cost-estimation-engine/6786?camid=4v1a