Quantifying the Risk of Intellectual Property Loss in Analytics Outsourcing

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ABSTRACT

The safety of a company's secrets and proprietary competitive practices becomes an important concern when the company is involved in outsourcing. This concern becomes even more critical when the company is engaged in analytics outsourcing where the company shares proprietary data about the internal processes. While there is a growing concern about the larger costs and risks of the wholesale outsourcing of analytics functions in the business press, there are no statistics on the risks or a sense of how big they might be. This paper attempts to fill this gap by building a mathematical model of the vendor-client interaction that will allow some baseline quantification of the risks that are inherent in analytics outsourcing. The paper also discusses the implications of these ideas for companies that work with outsourcing vendors and closes with some ideas for further research.

Keywords: *Analytics, Information Leakage, Intellectual Property, Outsourcing, Risk*

1. INTRODUCTION

This paper discusses the risk of the loss of intellectual property when companies outsource their analytics functions. The discussion uses the US pharmaceutical industry for illustration, but analytics outsourcing is a growing phenomenon in every sector of the US economy.

Many pharmaceutical firms have outsourced their analytics tasks and operations from a variety of functions – but especially sales and marketing - to one of a handful of vendors. For the larger pharmaceutical companies it has been a matter of cutting costs and downsizing their staff in these areas as the healthcare landscape changes and priorities shift. On the other

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hand, smaller companies simply don't have the data handling and quantitative skills needed to manage the large volumes of data that are now available to them even for routine transactions. Outsourcing to an analytics vendor has become the obvious answer in both cases.

In the simplest case, vendors take source data on the firm's operations, clean and manipulate it to provide standard reports and if needed, customized analyses. But many vendors also offer a full spectrum of services in sales analytics (sales reporting, sales force analytics, sales force effectiveness, incentive compensation, territory alignments, and physician detailing) and market analytics (customer insight, market access and pricing, pipeline strategy, product launch, and market research) and often use advanced statistical and optimization techniques in performing specialized tasks. These services go well beyond providing data - to the actual design, execution, monitoring, and evaluation of marketing and sales strategies and tactics. These kinds of engagements tend to be for longer terms than other forms of outsourcing and require that company and vendor work very closely over extended periods. The vendor therefore gets ongoing access to wide-ranging data about the company's operations and, of necessity, a ring-side view of its competitive philosophies, proprietary practices, and thinking about the future.

This association gets even more intimate when, as is often the case, the analytics vendor also manages IT at the pharmaceutical company. Many analytics vendors started out as IT vendors and IT outsourcing is still their major line of business. It is a natural progression for a vendor who manages IT at a pharmaceutical company to then also offer to perform the analytics. From the company's point of view the same cost compulsions prevail.

Thus in an analytics outsourcing engagement it is not possible to maintain the distance between company and vendor that is possible in a standard consulting or outsourcing engagement. In this environment the safeguarding of a company's secrets and proprietary competitive practices should be a primary concern. It becomes important to understand how these practices can be compromised and the magnitude of the risk.

There are three ways that a company can lose proprietary knowledge to competitors as a result of interactions with an outsourcing vendor. First, the vendor sells this information to competitors. This risk has been recognized from the very early days of consulting. Companies protect themselves in this situation by building safeguards into their interactions with consultants and penalties into their contracts. They only work with consultants they trust, and limit their exposure only to what is absolutely necessary. Consultants who deliberately take advantage of their possession of a client's intellectual property face the threat of legal action. Second, the vendor could incorporate this proprietary information into its repertoire of knowledge and expertise and disseminate it to the company's competitors in the industry in a gradual fashion. This is one way vendors acquire expertise and there is little that companies can do to prevent it.

In the third scenario, the vendor takes all reasonable precautions to protect its client's proprietary information in its dealings with other clients. Despite these precautions, all or part of the proprietary practice may get revealed to one or more clients. Forecasting, optimization, and analytical techniques pioneered by the client maybe reused without adequate masking. Portions of code written for the client might be incorporated into new code for other clients. A vendor employee might leave and take this knowledge to a competitor. This transfer could happen in one engagement or may be more gradual and occur over multiple interactions. These other clients may even be unaware that they've been exposed to another company's proprietary practices. The net result is that what was exclusive to the company is now in the possession of its competitors and the company loses its competitive edge. The more competitors come in possession of the proprietary knowledge the greater is the erosion of competitive position. While detailed legal safeguards like non-disclosure agreements are