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Integrating 3rd Party Web Services: Golf Masters’ Strategy for Competing against a Retail Giant

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ABSTRACT
Golf Masters is a golf retail and service company with annual revenues approximating $1 million. Most of the items they sell are commodity products that generally sell at or near manufacturer controlled prices. Recently Golfers Club Warehouse, a large chain store, opened a 24,000 sq ft retail facility within ½ a mile of the store threatening their viability. In response, Golf Masters adopted an aggressive three-pronged management strategy aimed at better managing customer relationships, increasing short-term and long-term revenues, and enabling information sharing with business partners. To implement these management strategies, Golf Masters sought external expertise on technology solutions for SMEs and ultimately decided to employ readily available third-party web services to reengineer many internal business processes and improve capacity utilization of under-employed services.

This paper discusses Golf Masters’ innovative and integrative use of third-party web-services, including online data mining tools, online auctions and automated bidding systems. In particular, we describe how the company developed an efficient means for acquiring a stream of lower-cost product, thereby enabling them to remain price-competitive while simultaneously increasing profit margins. As a result of the processes described here, Golf Masters has not only survived, but in 2003, last quarter earnings increased 30% over average previous years performance. This paper concludes by identifying several areas of continuing and future research.

Keywords: Web Services, Small Business, Data Mining, Auctions, Automated Bidding.

INTRODUCTION
Golf Masters is a privately owned retail and service company with annual revenues approximating $1 million. The company has operated for 3 years in its present location and serves a local market with a variety of golf-related products and services. Retail revenues comprise 30% of total revenues; additional revenues are generated from repair and maintenance of golf equipment, golf lessons, and through operation of a private Golf Club and indoor golf facility.

Recently, a major golf-oriented chain-store opened a 24,000 sq. ft. retail space in close proximity to Golf Masters’ store. This competitor threatened to reduce Golf Masters’ retail revenues by drawing customers and repeat business away. Golf Masters’ response to this threat was an aggressive management strategy designed to achieve significant growth in revenues over the planning period. The owner of Golf Masters consulted with an external expert on web-based technologies to identify potential investments in technology that could facilitate implementation of the strategic plan while staying within a limited budget. Golf Masters’ staff has few technical skills and, like many small organizations the company could not afford to invest heavily in IT activities or specialized technical staff. Thus, the owner and external IT expert ultimately decided on a plan to explore and use existing web-based technology wherever possible.

Extensive interviews with Golf Masters’ managers and subsequent financial data analysis were employed in this case study. This paper reports on one of their strategies aimed at increasing average sales margins by integrating a number of Internet-based 3rd party web services to quickly and efficiently identify and acquire streams of lower-priced golf products which may be used to supplement manufacturer-direct product streams. A combination of data mining, automated bidding and online auctions allows Golf Masters acquire product from non-direct sources at significant discounts over manufacturer-direct pricing increasing sales margins and effectively by-passing advertising and price controls levied by the manufacturers.

Golf Masters achieved a 30% sales increase within 12 months and anticipates a three-fold increase in sales over a 3-5 year period as a result of using these third party services to re-engineer core business processes. We believe there are three keys to Golf Masters’ success with third party web services. First is the leadership of the owners and managers of Golf Masters. This finding is consistent with research on successful integration of technology in large organizations. Second, the flexibility of small business infrastructures makes them ideally suited to adoption and use of available third party web services. Finally,
given the limited IT skills and budgets in most SMEs, some awareness and training from external sources can be an important factor.

LITERATURE REVIEW ON COMPARATIVE ADVANTAGES AND CHALLENGES OF IT IN LARGE AND SMALL FIRMS

SMEs and large companies have different strengths and weaknesses that impact strategic IT investment choices and subsequent success with those investments. Small retail companies are historically managed and operated by personnel with rich product and domain expertise but limited IT skills (Auger et al., 1997). SMEs also have smaller budgets for IT investments than their larger counterparts, yet research shows that the availability of tangible IT resources and human IT resources has an important influence on a firm’s overall IT capabilities (Bharadwaj, 2000).

Swanson (1994) argues that IT innovations may be categorized as technologies that enhance efficiency of systems operations (Type I), technologies that enhance administrative work processes (Type II) and technologies that have strategic relevance by affecting core business processes and ultimately impacting financial performance (Type III). Factors affecting successful investment in Type III IT investments include championship of IT investments by top management (Chatterjee et al., 2002; Armstrong, et al., 1999), existence of a specific strategic rationale to guide the investment such as cost savings or customer retention (Chatterjee et al., 2002) and extent of coordination and integration of IT and business knowledge through partnerships between managers across the firm (Chatterjee et al., 2002; Nelson et al., 1996, Pinker et. al., 2002).

SMEs should, therefore, have some advantages with respect to each of these three organizational influences on e-business investment success over their larger counterparts. The fact that SMEs have simpler management structures and fewer personnel should facilitate rapid, positive influence of senior management leadership on e-business projects. In contrast, when managers of larger brick and mortar firms decide to invest in e-business, they frequently run into political conflicts among departments and channel conflicts between established sales departments and channels and proposed e-business channels (Pinker et. al., 2002). Managers of smaller companies also face fewer political and infrastructure hurdles due to the more modest management and IT infrastructures. Thus, SME managers should be able to implement strategic plans more quickly than large companies. Finally, since functional activities are not organized and managed separately by different teams of personnel in most SMEs, smaller organizations may have an advantage when trying to apply an integrated e-business strategy. However, SME managers are often unaware of potential benefits to SMEs of e-business investments (Gribbins et al., 2002) and, therefore, may need outside assistance to help them identify suitable IT investment strategies.

Despite the number of potential benefits of small size on e-business investment opportunities, more than 70 percent of SME survey respondents identified external business pressure from customers or others as one of the primary reasons for adopting one particular integrative technology, EDI. (Iacovou et. al., 1995). This indicates that SME e-business investment activities are more reactive than proactive. Findings from another large-scale survey of technology adoption by industry indicate that there are four phases of IT adoption, including awareness of the technology, adoption, deployment and finally impact (Booz Allen Hamilton, 2002). Together, the findings of these two surveys along with prior research on levels of IT knowledge in SMEs suggest that a key barrier to SME investment in e-business is management awareness of potential IT solutions. Further evidence that building management awareness of IT solutions can lead to more sophisticated IT deployment is the finding that success with SME forays into simple e-business activities such email campaigns or selling products on third party auction sites often lead to higher-level investments such as transactional websites (Gribbins et al., 2002).

As costs decrease and capacities increase in a given technology, innovative small companies can adopt similar IT investment strategies as large companies and potentially reap similar rewards. The challenge for small businesses is to make them aware of IT opportunities and help them formulate effective business strategies which meet their unique circumstances. We hypothesize that once small business owners can visualize the benefits, implementation should actually be easier for small companies than it is for large companies as an increasing number of third-party Internet-based services covering all aspects of business management are available, providing a rich set of low-cost readily available technologies ready to be assimilated in small business operations.

GOLF MASTERS’ PRODUCT ACQUISITION STRATEGY

In an effort to increase sales margins, Golf Masters decided to identify a reliable stream of golf products which can be acquired at prices significantly below manufacturer wholesale prices and circumvent pricing and advertising controls. A large volume of new golf products are available through a number of specialized and general online auctions such as The Golf Club Exchange (www.golfexchange.com), 3-Balls Golf (www.3balls.com) and E-Bay (www.ebay.com). The use of online auctions for purchasing items for subsequent retail, however, presents a number of challenges for small businesses. These challenges can be classified into three major issues: identifying suitable product lines, identifying specific product items, and acquiring identified items.
In order to identify product lines which can be included in the purchasing process, each candidate product line sold by Golf Masters is analyzed to determine if there is sufficient quantity of product line available at auction which can be won at a price significantly discounted from manufacturer prices. Once product lines have been qualified, effectively managing the purchasing process involves predicting the final expected price of each auction and filtering out those auctions which provide the least chance of winning. The last challenge is to provide a means whereby selected auctions can be effectively and efficiently won.

The remainder of this section describes how Golf Masters employs third party web services in conjunction with one general online auction, E-Bay, to achieve its management goals of lower cost acquisition of products, higher margins on goods sold and better utilization of under-employed golf services.

WEB SERVICES INTEGRATION METHOD

Building a data mining application can be expensive, however, third party providers are now offering data mining applications and tools at low costs, providing SMEs with insights otherwise only available to large companies. The data mining tool used by Golf Masters, from Andale (www.andale.com), is designed to be an E-Bay sales assistance tool but has very powerful search and analysis capabilities allowing it to be used in a variety of ways. Golf Masters uses Andale’s data mining tools to perform initial product qualification and product identification by analyzing auction patterns of each candidate product over the previous year. The data miner queries historical auction data previously cached from E-Bay’s databases providing average final auction price by month, percentage of auctions which result in a sale by month and average number of items for sale each month for each product (Figure 1).

Once a product line has been qualified for the purchasing strategy, the next step is to develop a means whereby items can be acquired effectively and efficiently. The online data miner is also used for this process but queries live data rather than historical data from the auction site (Figure 2). The maximum final auction price Golf Masters is willing to bid is for an item automatically calculated as 80% of the manufacturer-direct price.

Finally, after specific auctions have been identified by the data miner, Golf Masters has to be able to bid on them in a manner which is both manageable and efficient. Golf Masters selected an automated online bidding tool to manage the bidding process by proxy. The bidding tool automatically places bids on pre-selected auctions on behalf of Golf Masters. This "auction sniper" selected by Golf Masters is web-based and, similar to the data miner application, integrates into E-Bay via E-Bay's web services interface. The bidding tool accesses the Golf Masters’ E-Bay watch list and automatically loads pre-selected items into the automated bidder application. Golf Masters’ personnel enter maximum bid prices for the auction item and sets a bidding lead time which is the time before the end of the auction at which the bid will be placed. Maximum bid price is defined using the same 80% rule as in the product identification search procedure (Figure 3).

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1 E-Bay provides a rich set of web-service interfaces allowing pre-qualified applications access to their data over the Internet. Access to E-Bay’s API is via SSH using XML for encoding data. A full description of the API can be downloaded from www.ebay.com.
Figure 3

A representation of how Golf Masters integrates these third party tools to reengineer product acquisition processes is presented in Figure 4.

Figure 4

Golf Masters’ staff manages the auction process via web browser interfaces, primarily interacting with the data mining and automated bidding applications. These applications, in turn, access Golf Masters E-Bay account by interacting with E-Bay via their web-services API over the Internet.

DISCUSSION

Golf Masters has been using the process we describe here for the last six months, concentrating on ten to twelve product lines from four major golf manufacturers. Average cost of product acquired from E-Bay using this approach is 20-30% below manufacturer-direct wholesale prices. Using a mix of one-third to one-fifth of auctioned product to manufacturer direct products allows Golf Masters to sell in-store items at a cost 5-10% below their competitor without decreasing sales margins. Approximately 100-120 club sets are forecast for purchase via auctions in the current fiscal year. Golf club sales are cyclical with the highest volume of sales in early spring and the lowest volume of sales in winter. Average auction prices follow a typical demand curve with higher prices during the spring and lower prices during fall and winter. Accordingly, Golf Masters has adopted a profit maximizing strategy where the majority of products are acquired during the off season when prices are at their lowest and stored until the sales start to pick up in the spring.

The IT investment necessary to implement this strategy is negligible requiring little more than an Internet connection and small investment in time for training. Amortized costs amount to just a few dollars per successful transaction whilst average realized savings range between $100 and $200 per transaction. The online data mining application costs less than $5 per month and places no restriction on the number of searches or data mining queries placed. The automated bidding process is priced on a per-win basis costing %1 of the final sale price up to a maximum of $5. Only bids resulting in wins are charged. Costs of managing the process are similarly surprisingly small; Golf Masters’ staff can manage a days activity including processing any wins from the previous day in about 30 minutes and these operations can be performed outside of normal store retail hours. Altogether, the learning process took less than two days.

One of the keys to success for Golf Masters is to make the product acquisition process efficient and manageable and, therefore, sustainable. This approach to purchasing product from indirect sources is proving highly effective, due in part to the nature of the golf club retail industry which provides, through several means, a large and readily available set of auction items, and the level of technology skills necessary to manage the process. Prior to initiating this process, Golf Masters’ staff already had experience with online auctions and E-Bay in particular, so they understood general auction procedures and protocol and were familiar with using sophisticated browser-based applications over the Internet. Developing the product
acquisition strategy, however, required familiarity and experimentation with more sophisticated analysis tools and third party web-services which Golf Masters staff did not possess. Once the tool-set was identified and an overall process developed, however, minimal additional training was required to enable Golf Masters staff to perform data mining functions, create new product searches and transition seamlessly from one online application to another.

FURTHER RESEARCH

This case has identified several areas for further research. Today, Golf Masters uses a simple rule-based approach in determining which items to bid on within a product line resulting in an average 30% of auctions being won. A more systematic understanding of the correlation between winning an auction, the auctions characteristics and product characteristics could increase the effectiveness of the bid process and result in lower average prices and better product qualification. The cost effectiveness of automated auction sniping also warrants further analysis as our experience indicates that their service is perhaps undervalued to organizations which use them to perform bulk bidding such as Golf Masters.

The success experienced by Golf Masters is predicated on a strategy of adoption rather than development, favoring use of existing third-party tools available online. Today, the number and type of third-party applications is increasing as companies such as Salesforce.com, SAP, Microsoft and Oracle provide hosted applications available allowing business of all sizes access to sophisticated applications without the overhead of developing or managing the technical aspects of their deployment. Literature on innovative use of IT in large organizations is rich relative to research exploring innovative use of technology in SMEs. In this research in progress, we describe how one SME augmented their purchasing processes by integrating a number of disparate third party web services. In further research, we will follow Golf Masters as they complete their transition from a traditional retailer to a fully integrated brick and click organization by assimilating additional third-party web services into their daily business processes. Additionally, we develop a theoretical model of how retail SMEs can use these readily available services to improve effectiveness and efficiency of operations. We believe that Golf Masters’ experience has implications for retail SMEs in general as there is little existing theory and knowledge regarding the systematic deployment of such services effectively in small business organizations.

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