Segment Strategies and the Resource-Based View of the Firm

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DRU-2163-NSF

September 1999

Prepared for National Science Foundation

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December 4, 1998

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Abstract: By demonstrating how distinctive sets of competencies can contribute to competitive advantage, recent research on the resource-based view of the firm has provided an important new perspective on the drivers of corporate strategy. However, this recent research has yet to address the topic of internal differentiation in resource development. As markets continue to fragment, multi-unit firms find it necessary to develop not one unique set of complementary competencies but multiple distinct sets of complementary competencies to respond to the demands of different customer segments. This paper develops and tests a model of internal differentiation in resource development in service organizations. The empirical results of the test suggest that alignment between resource development and strategy must be achieved at the segment or business-unit level not the level of the corporate enterprise.
Introduction

While not without its critics (Collis, 1994), the resource-based view of firm has won broad support among management scholars in recent years (Wernerfelt, 1984; Rumelt, 1984; Prahalad and Hamel, 1990; Mahoney and Pandian, 1992; Amit and Schoenmaker, 1993; Peteraf, 1993; McGrath et al, 1995). The past decade has witnessed a proliferation of research on the resource-based view of the firm, with scholars identifying a number of distinctive competencies that can contribute to competitive advantage.

Chief among the processes of resource accumulation and deployment that have been identified with a resource-based model are processes that support organizational learning and knowledge development (Senge, 1990; Kogut and Zander, 1992; Tsoukas, 1996; Sanchez and Mahoney, 1996), product innovation (Stalk et al, 1992; Wheelwright and Clark, 1992), customer intimacy (Treacy and Wiersema, 1993; Pennings et al, 1998), human capital development (Koch and McGrath, 1996; Huselid, 1995; Schuler and Jackson, 1987) and the development of a distinct organizational culture (Barney, 1986; Powell, 1995).

Most recently, research in the tradition of the resource-based view of the firm has moved beyond looking at distinctive competencies to investigate the notion of resource complementarity (Henderson and Cockburn, 1994; Pisano, 1994; Robins and Wiersema, 1995; Mahoney and Pandin, 1992; Ichinowski and Shaw, 1995; MacDuffie, 1995). The notion of resource complementarity suggests it is not individual distinctive competencies but the development of complementary competencies that leads to competitive advantage. Research on multi-unit businesses has shown that synergistic resource development
across a portfolio of business contributes significantly to business performance (Robins and Wiersema, 1995; Mahoney and Pandin, 1992; Farjoun, 1998).

Studies on the competitive impact of product development have shown that firms which integrate resource development through the various phases of product development and delivery can generate strategic alternatives not available to firms with less resource complementarity (Henderson and Cockburn, 1994; Pisano, 1994). Empirical investigations of manufacturing and service establishments adopting flexible technologies show that these technologies only improve business performance when combined with complementary changes to process design and human resource practices (Powell and Dent-Micalef, 1997; Ichniowski and Shaw, 1995; MacDuffie, 1995).

A topic that is missing theoretically and empirically from the recent spate of literature on the resource-based view of the firm is the concept of internal resource differentiation. The idea of internal differentiation suggests that as markets become more fragmented, firms need to develop a broader range of capability sets to appeal to the needs of different customer segments. In this view, strategic advantage does not come from developing a single set of complementary capabilities but from developing multiple sets of complementary capabilities that support strategy implementation in distinct market niches.

Internal differentiation is particularly important to information service providers and goods-based companies that rely heavily on distribution channels to achieve competitive advantage (Anderson et al, 1997; Dyer et al, 1998; Keltner, 1998). For companies of this type, strategy is embedded within the idiosyncratic interactions with customers (Larsson and Bowen, 1989; Bowen and Schneider, 1988; Schneider and
Bowen, 1995; Zeithaml et al, 1990) and resource development needs to be based on this customer distinctiveness.

In this study, we use detailed data collection in three strategic business units at a single, large insurance company to explore the topic of internal resource differentiation. The first half of the paper reviews the literature on strategy in service organizations and develops a set of hypotheses on aligning resource development with service strategy. The second half of the paper offers an empirical test of our hypotheses through survey data collected in the three strategic business units.

**Strategy and Resource Development in Service Organizations**

For service companies, product and product development are one element of the strategy, but strategy is more fundamentally based on the way that relationships with customers are developed, maintained, and deepened (Heskett et al, 1997; Reichheld and Sasser, 1990; Bowen and Schneider, 1988; Chase and Bowen, 1991; Normann, 1991; Zeithaml et al, 1990). Information is the primary raw material for service production (Mills and Turk, 1986; Siehl et al, 1992) and customers are the primary source of this raw material (Thompson, 1962; Chase, 1978). The information intensiveness of service delivery and central role of customers in service production has important implications for both service strategy and service operations.

At a strategic level it means that service products are intangible and that it is a customer’s experience with a service provider rather than the service itself that influences customer purchasing behavior (Schneider and Bowen, 1995; Zeithaml et al, 1991). At an operational level it means that to a far greater extent than manufacturing, service
operations draw on customer involvement as “co-producers” in the design and delivery of a product” (Larsson and Bowen, 1989; Bowen and Schneider, 1988). Strategy implementation in service organizations is based on effectively developing internal resource capabilities that support the management of customer information and customer contact.

Service Strategies

Research on service management suggests that service strategies cluster around three distinct approaches to managing customer relationships (Reichheld, 1996; Schlesinger and Heskett, 1991; Keltner, 1998; Gutek, 1995; Shapiro, 1992). The first type of strategy is based on a transactional approach to service relationships. The transactional strategy is the same as Porter’s (1980; 1985) price leadership strategy. Rent-seeking behavior is based on being the most efficient in processing a high-volume of low margin customer transactions. The service relationship is a transactional exchange. There is little customer involvement in service production and little personalization of service delivery. Customer product needs and new customer prospects are identified through back-office data mining activities. Post-sales service support is delivered through self-service or highly standardized delivery channels.

The other two types of service strategies are based on a service-oriented and a relational approach to customer relationships. Both involve differentiation from the price leader position. Differentiation is not based primarily on attributes of product (e.g. lower defect rates, customization by tailoring features and design, or time to the market)
(Garvin, 1988; Kotha, 1995; Stalk, 1988), but rather differences in the way customer relationships are developed and managed.

Rent seeking behavior in the service-oriented strategy is based on continually broadening and improving the profitability of relationships with customers that demand largely standardized products through an emphasis on superior service quality (Grant and Schlesinger, 1995; Heskett et al, 1994; Reichheld and Sasser, 1990). Rent seeking behavior in the relational strategy is based on developing customized and non-replicable relationships with customers that allow for the effective customization of production (Keltner, 1995; Pennings et al, 1998).

In its back-office piece, a service-oriented strategy is similar to the transactional model. There is considerable standardization of product with little customer involvement in product development and production (Pine, 1993). The service-oriented strategy is different than the transactional strategy in its front-office piece. Customers are very involved in product selection, working with service employees to choose the right mix of service products to meet their needs (Pine et al, 1995; Davenport and Nohria, 1994). The service-oriented strategy emphasizes product bundling as a way of drawing stronger linkages between the customer and service company (Shapiro, 1992; Keltner, 1988).

From the perspective of the customer, consolidation of product holdings (e.g. “one-stop” service) increases convenience; from the perspective of the service firm consolidation lengthens customer tenures (e.g. improves customer stickiness). Stronger customer linkages are also based on high-quality, personalized post-sales service support, with database technology important in supporting the development of ‘learning relationships’ with customers (Reichheld, 1996; Pine et al, 1995).
The relational strategy is different from both the transactional- and service-oriented strategies in that customers are highly involved in all phases of service production. There is no standardization of product with all products being tailored to individual customer needs and extensive customer involvement in product development. Post-sales service support is, similarly, highly personalized and tailored to the needs of individual customers.

The relational strategy is based on a high level of customer intimacy (Treacy and Wiersema, 1993; Pennings et al, 1998). The level of customer knowledge required by the relational strategy goes beyond that which can be stored in a database. It is deeply contextual and can only be developed through a series of repeated encounters between a dedicated account representative and a customer (Gutek, 1995). By developing a deep working knowledge of a customer and a customer’s unique product needs, a service company pursuing the relational strategy can develop a strategic relationship with the customer that is difficult for competitors to replicate (Shapiro, 1992).

**Resource Development and Strategic Alignment**

The literature on service management is clear in outlining the three types of resource development that must be used to support each of these service strategies (Figure 1). The first and most important is development of service processes that mediate external collaboration between employees and customers and internal collaboration among employees. (Roth and Jackson, 1995; Larsson and Bowen, 1989; Davenport and Nohria, 1994; Frei et al, 1997; Batt, 1996). The second is the development of information systems that allow customer information to be captured and analyzed
(Davenport and Prusak, 1997; Berry and Parasuraman, 1997; Lei, Hitt, and Bettis, 1995; Bettis and and Hitt, 1995). The third is investments in employee knowledge (Pfeffer, 1994; Koch and McGrath, 1996; Keltner and Finegold, 1996).

[Figure 1 about here]

While clear in outlining the types of resource development needed to support service strategy, the service management literature tells us little about alignment between service strategy and resource development. Following the strategy implementation literature (Powell, 1992; Henderson and Cockburn, 1994; Pisano, 1994), we expect that each of the three service strategies outlined above require an aligned mix of complementary resource investments. But since the three strategies are based on a different set of competitive principles, we hypothesize that the right mix of complementary resource investments will be distinct in each case.

The design of service processes help with management of both external and internal collaboration. With regard to external collaboration, service processes can be designed to support higher levels of customer intimacy or they can be designed to support highl structured, narrow customer interactions. When designed to help achieve higher
levels of customer intimacy, service processes should enhance what has been termed the absorptive capacity of the firm (Cohen and Levinthal, 1990), by helping employees to internalize knowledge about customers and markets (Roth and Jackson, 1995). When designed to support narrow customer interactions, service processes focus on error minimization and ensuring a continuous standard of quality (Chase and Stewart, 1994; Frei et al, 1997).

A relational strategy depends on employees having deep and detailed knowledge about customers. Service processes must allow employees to spend time working closely with customers in developing this knowledge. Time spent on deepening relationships with existing customers will be more important than trying to increase the number of customer relationships through standardized service transactions. For the transactional and service-oriented strategies, customer intimacy is less important to performance. The transactional service strategy depends on a churning a high-volume of new business through standardized service transactions. There are no few performance gains to be realized by designing service processes that support higher levels of intimacy with customers. In the service-oriented model, similarly, customer intimacy is generated not through service processes that support deep customer involvement in service production, but through information systems that capture and store customer information.

**H1a:** Service processes that support open-ended customer contact will support the performance of a relational strategy but not a service-driven or a transactional strategy.

**H1b:** Service processes that create highly standardized customer interaction will support the performance of a transactional strategy.
With respect to internal collaboration, the design of service processes can also lead to higher or lower levels of internal employee collaboration (Batt, 1996; Lovelock, 1990). Collaboration between employees in different areas of an organization broadens the range of accessible skills and knowledge available to a firm in responding to market requirements, but it also requires investments of time and resources (Mintzberg, 1979; Nadler and Tushman, 1988). There are three types of employee collaboration that help service organizations manage customer relationships. These are collaboration between account representatives who manage customer relationships, collaboration between account representatives and product specialists to improve product fit, and collaboration between account representatives and service employees to improve post-sales service support (Frenkel et al, 1999; Lovelock, 1990).

In the relational business model, product needs and product specifications change significantly from customer to customer. Service processes should encourage account representatives to share expertise and knowledge among themselves to more effectively structure product pitches. Service processes should also encourage collaboration between account executives and product specialists to tailor product design to customer needs. Because account representatives working in the relational model have a detailed and unique working knowledge of customer accounts, service processes that encourage collaboration with service staff in managing post-sales service will contribute little to performance.

Customer interactions in the transactional model are highly standardized. There is little benefit to designing service processes that encourage account representatives to collaborate amongst themselves or with product specialists. Since the transactional
model presupposes very little on-going customer interaction, there is also little benefit to designing service processes that encourage collaboration with service staff in providing post-sales service support. In the service-oriented strategy, product development is highly standardized, meaning that service processes that encourage collaboration amongst account representatives and between account representatives and product specialists will lead to little performance benefit. By contrast, the service-oriented model depends on high levels of quality in post-sales service, suggesting that service processes which encourage collaboration between account executives and service workers contribute to higher levels of performance.

H2a: Service processes that support internal collaboration between sales representatives and product specialists will contribute to the performance of a relational strategy.

H2b: Service processes that support internal collaboration between sales representatives and post-sales service support staff will contribute to the performance of a service-driven strategy.

Closely related to service process design, a second key area of resource development is the development of information systems that allow customer information to be captured and systematically analyzed in ways that support organizational learning (Davenport and Prusak, 1997; Berry and Parasuraman, 1997). Technology-supported organizational learning is a critical component of success in the emerging strategic landscape (Bettis and Hitt, 1995). Capturing customer information allows for faster and more effective decision-making (Huber, 1990).

There are two ways, in particular, that information technology supports service strategy. First, it allows both managers and employees to more identify and act on new
business opportunities. By mining data on current customers and new business prospects, a service organization is able to determine the most promising customers to sell its products. Information technology also improves the quality of the service delivery by making more information about customers available to sales and service representatives during the service exchange (Quinn, 1992; Davenport and Nohria, 1994). By effectively capturing customer information, technology can support learning relationships even where there is no true relationship between a service employee and a customer (Pine et al, 1995; Gutek et al, 1999).

A transactional strategy draws on technology to generate a high volume of new sales transactions. Technology can improve the ability of service organizations using this strategy to identify the most promising customers to sell product. Since follow-on customer contact expected to be minimal, technology that helps manage customer information is relatively less important to the performance of a transactional service strategy. Service-driven and relational strategies focus not on acquisition of new customer relationships but on continual expansion and deepening of existing ones. Technology that helps manage existing customer information will be important to performance of both strategies. Technology that helps generate new business opportunities will be less important.

**H3a:** Information systems contribute to the performance of a transactional strategy when they support analysis of sales opportunities.

**H3b:** Information systems contribute to the performance of a service-driven strategy and relational strategy when they help with the management of customer information.
A third and final area of resource development necessary to manage both customers and information is investments in employee knowledge development. Investments in employee knowledge are increasingly seen as a key driver of competitive performance in all industries (Pfeffer, 1994; Koch and McGrath, 1996). While both process design and information systems help manage customer relationships, it is ultimately how service employees manage direct contact to customers that drives the success or failure of the service relationship. There are three types of knowledge and skill development that are central to effective management of customers. They are basic communication and analytical skills, knowledge of customers, and knowledge of products.

Basic communication and analytical skills are typically developed prior to joining a firm. They are strongly related to educational attainment (Capelli, 1995; Soskice, 1993). Firms can do little to influence this type of skill development other than recruit effectively. Knowledge of customers and products is developed through an emphasis on employment stability and long employment tenures (Heskett et al, 1997; Ulrich et al, 1991; Schlesinger and Heskett, 1991). Knowledge of products can be developed through an emphasis on broad technical product training (Keltner and Finegold, 1996).

Selling in a transactional service strategy is largely price driven. It does not require analytical skills, proactive problem solving for customers, nor a deep understanding of customer accounts. It does require a constant update of technical product knowledge to stay abreast of changes to product pricing and product features. Selling in the relational model is problem-oriented and customer focussed. It requires strong analytical skills and a deep knowledge of customer accounts gleaned through years
of work experience. Products sold in the relational model are highly customized.

Knowledge of how to effectively customize products for customers can only be learned through work experience and long employment tenures. Selling in a service-driven strategy is reactive. It depends on being able to use customer interactions to effectively identify additional product needs and sell additional products. Both strong analytical skills and a good working knowledge of products are important to service-driven selling.

H4a: Educational attainment and the associated improvements in analytical and communication skills are important to both a service-driven and a relational strategy.

H4b: Technical training is important to both a service-driven and a transactional strategy.

H4c: Employment stability and long employment tenures are important to a relational strategy.

**Research Setting and Methods**

We used data collected at a single large insurance company to test our hypotheses on the alignment of service strategy and resource development. The choice of a single site for our research was intentional. Data collection at a single site allowed us to effectively combine qualitative and quantitative methods of research. Given the dearth of research on the alignment of resource development and strategy in service organizations, we needed to use qualitative research methods to identify meaningful measures for resource deployment. Qualitative methodologies have been argued to represent the best way to observe the effects on business strategy and performance of idiosyncratic factors predicted by the resource-based view of the firm (Godfrey and Hill, 1995: 531; Eisenhardt, 1989; Leonard-Barton, 1990)
The insurance company that served as the site for our research was made up of three strategic business units. One served the personal market segment, one served the small business market segment, and one serves middle market customers. Our initial qualitative data collection in the company suggested that there was a different dominant strategy in each of the three customer segments, creating an opportunity to explore the mediating effect of strategy on resource development. We used a survey to collect sales force-level data on sales process design, technology use, and knowledge development in the three market segments. We did not, however, specifically tailor our data collection efforts around segment strategies. We collected the same type of data across all three, wanting to see if a dominant strategy would emerge in each customer segment. In addition to survey data on sales process design, technology use, and knowledge development, we also collected data on sales revenue.

Survey Setting

The personal, small business, and middle market customer segments at the insurance company are different in their target customers and the dominant service strategy. Middle market operations are focused on companies with roughly 100-1000 employees and more than $10 million sales. These companies typically spend between $75,000 and $2.5 million in insurance premiums. The major product lines sold to middle market companies include worker’s compensation, auto, general liability, and property insurance, E&O insurance (Errors and Omissions), D&O insurance (Directors and Officers), and EPLI (Employment Practices Liability Insurance). All of the products in
this market segment were tailored to the requirements and risk situation of the individual customer. No template or off-the-shelf products were available.

The middle market organization has a direct sales force about 400 hundred sales representatives. Middle market sales representatives lead a team of product specialists, underwriters, and service representatives in tailoring products to each individual customers needs. The middle market representatives also have the support of an administrative assistant that helps manage customer service requests. We were told that each sales representative is responsible for growing a dedicated portfolio of about 20-30 customer accounts. The use of customized products and the small number of dedicated customer accounts suggested that a relational strategy is the dominant approach to customer management in the middle market segment.

The small business organization targets customers with less than $75,000 in annual insurance premiums. Typically these are business customers with less than 100 employees and annual sales volume of less than $10 million. The main types of products sold to this size of customer are the Small Business Owners Policy and a Commercial Multiparel policy. Both products are templates that offer the small business owner a bundle of related insurance products. The Business Owners’ Policy includes coverage of property, buildings, and contents. The Commercial Multiparel policy includes property, general liability and commercial auto coverage. It can also include coverage for pollution, transportation and loss of income. Both policies are templates which can be tailored to individual businesses by changing coverage levels and adding features.

The agency system is the primary mode of distribution for small business products. Through a holding company, the insurance company we studied works with
several hundred different agencies. In its largest business region there are 191 different agencies distributing its products. There are a total of 400 licensed sales representatives at the agency sites that are actively prospecting for new customer relationships. We were told that each sales representative manages up to 200-300 customer accounts. Sales representatives are supported by approximately 400 customer service representatives who have insurance licenses but do not have responsibility for developing new customer relationships. They primarily provide customer service and are licensed so they can make cross-sales or up-sales in the course of completing their service transactions. The use of bundled products along with the importance of service representatives suggests that the dominant strategy in the small business market was a service-orientation.

The personal market segment caters to households and individuals. While the company sells a full line of personal insurance lines including auto, home and life policies, about 80% of revenues in the personal market segment come from the sale of automobile insurance products. The personal market had 1000 sales representatives. The personal sales representatives were supported by personal service assistants, who unlike the small business segment were not licensed insurance agents, and administrative support personnel. Each personal service assistant and administrative support worker was assigned to multiple sales representatives. The personal sales representatives each carry a large number of customer accounts in their portfolio. We were told that the top performing sales representatives might manage up to 3,000 customer accounts. The strong focus on the sales of the auto insurance product and the large number of customer accounts carried by sales representatives suggested that the personal market is characterized by highly transactional approach to customer management.
In all three of the market segments, sales representatives had access to a customer information management system with similar functionality. Sales representatives were expected to use the customer information system as a source of new customer leads with both sales managers and the marketing department analyzing customer data to identify promising customer prospects. Sales representatives were also able use the customer information system to centrally manage information on recent customer contacts, the history of a customer relationship, and a customer product holdings.

Sample and Data Collection

In both the middle market and personal customer segments we collected data at the level of the individual sales representative. We used a sales force survey to collect data on the organization of the sales process, use of technology, and knowledge development. The company provided sales force performance data for individuals in the personal and middle market segments for 1996 and 1997. In the small business setting, we collected data at the level of agency. We surveyed a single contact person at each agency regarding revenues, the design of sales processes, use of technology, and knowledge development. We then used this data to develop a picture of performance and capability development for the average sales representative in the agency. Since the typical agency is quite small – the average size was 7 FTEs combining both sales representatives and service support employees – we assume that the data collected is representative of the sales force in the agency.¹
Measures

We followed other studies looking at the impact of resource development on performance in service organizations in using gross revenue generation as single and uniform measure of performance (Batt, 1996). In the personal and middle markets, we used annual revenue data at the sales representative level as the performance measure. In the small business market, we used annual revenue data for the agency as reported in the survey as the performance measure.

To identify how sales representatives manage the sales process, we use several measures. *Current accounts* measures the number of accounts in a sales representative’s portfolio. *Current prospects* measures the number of prospects that a account representative is actively prospecting. *Time prospecting* measures the amount of time sales representatives spent looking for new prospects as opposed to deepening relationships with their existing portfolio of clients. Time spent prospecting was measured as a percentage of the sales representative total time at work. We took both a lower numbers of accounts and less time spent prospecting as evidence that service processes were designed to support customer intimacy.

On the use of support staff, we used different measures across the market segments. In the personal and middle markets, respondents reported how many hours a week of *administrative support* they received from service assistant are administrative personnel. In the small business market, we asked for information on the number of FTE service and administrative support personnel available to help sales representatives manage customer relationships. The *support staff* variable measures the ratio of support employees to sales representative in each agency.
The *product specialist* variable measures the frequency with which sales representatives draw on product specialists to help structure a sales pitch. Product specialists were only available to the sales force in the middle market, so this question was asked only of middle market sales representatives. For each product line sold in the middle market, we asked middle market sales representatives to tell us the percentage of time that they sold the product by themselves, teamed with a specialist, or referred the customer to a specialist. To measure use of product specialist, we took the average across all product lines of the percent of time a sales representative either teams with a specialist or referred the customer to a specialist.

Our final measure of service process design focused on collaboration with colleagues. We used a five-point scale to measure how frequently sales representatives in the personal and small business market turned to colleagues for help in structuring a sales pitch. The most frequent measure was more than once a day; the least frequent measure was less than once a week. We created a dummy variable indicating sales representatives that seek help frequently. For sales representatives that report seeking help every few days or more frequently, we assign a 1 to the *collaboration* variable. For sales representatives that seek help once a week or less, we assign a 0. This question was not asked of agency representatives in the small business segment.

With respect to operationalizing the use of information technology, the variable *lead generation* measured the frequency with which sales representatives used their customer information system to generate new customer leads. The survey questionnaire asked respondents to report how often they used the customer information system to generate new leads. For the regressions, sales representatives that reported using the
customer information system once a week or more frequently were assigned a 1 for the
dummy variable CIS use, sales reps that reported less frequent use were assigned a 0.
The question on use of technology for lead generation was not asked of the agency
respondents in the small business segment.

Our other variable on technology focused on using technology as an information
tool to manage existing customer relationships. *Coordinated information management*
measured the extent to which sales representatives had customer information in four areas
-- contact information, information on product holdings, information on relationship
history, and competitor information -- electronically available to them through their
customer information system. In the all three market segments, we asked for the
percentage of customers that a sales representative had each type of information
electronically available to them either from a laptop or desktop computer and then took
an average value to put in our regression. In the small business market, we also asked
whether the agency information system provided an integrated overview of these four
types of information to service representatives. Agencies where service representatives
had an integrated overview were assigned a 1 for dummy variable *Agency Management
System* and agencies without an integrated overview were assigned a 0.

The four variables on knowledge acquisition all measured different influences on
the development of knowledge about customers and markets. *Work experience* measured
the number of years of experience sales representatives had in their current sales position.
*Initial training* measured the breadth of initial training sales representatives had in the
areas of product, technology, and sales in their first two years of work experience. We
asked specifically about training in 11 different areas and developed a variable on the
breadth of coverage. The measure is constructed as the number of initial areas the sales representative received training divided by the number of possible areas listed.

*On-going training* measured the number of days of training in the last twelve months. *Education* measured the highest level of educational attainment of the sales representatives. While educational attainment does not contribute directly to knowledge of customer and markets, the analytical and communication skills learned in higher education have been argued to contribute to effectiveness with which employees in service settings can engage customers and solve problems (Soskice, 1993; Capelli, 1995). In the personal and middle markets, we include a dummy variable equal to 1 if the sales representative reports having a college degree, 0 otherwise. In the small business market, we include a measure of the reported share of sales representatives with a college degree.

**Data Analysis**

We completed three types of analysis on the revenue and survey data. First, we generated descriptive statistics on the means and median values for all of our independent variables by customer segment. Generating descriptive statistics allowed us to highlight differences in cross-segment development of organizational capabilities that might not show up in the drivers of within segment performance because of a lack of sufficient variation.

Second, we examined the relationship between service process design, use of information technology, and knowledge development and performance within segments. We use the regression analyses to identify the mix of resource investment that leads to the highest level of performance in each market segment. Since target customers and revenue
sizes vary significantly across the market segments, our primary mode of analysis is the comparison of sales performance between sales representatives working within the same market segment. In the personal and middle market segment, we examine the relationship between sales representative characteristics and sales rep performance. In the case of the small business segment, we examine the relationship between agency characteristics and agency performance. We estimate a series of regressions of the form:

\[ Y_i = \alpha W_i + \beta X_i + \gamma Z_i + \epsilon \]

The dependent variable, \( Y_i \), is the log of premium for observation \( i \) (either sales rep \( i \) or agency \( i \)). The \( W_i \) represent measures of the sales process used by observation \( i \): the size of their current portfolio, the number of current prospect, the time spent prospecting, and collaboration measures. The \( X_i \) represent measures of technology use by observation \( i \): the use of technology to generate leads and the use of technology to manage customer information. The \( Z_i \) represent knowledge development at observation \( i \): educational attainment, experience in current job, initial training and on-going training. For the personal and middle markets, we include controls for the state in which the sales rep is located,\(^3\) for the small business market we include controls for the size of the agency.

We ran a total of four regression models. Model 1 was for the personal market segment; Model 3 was for the middle market segment. The two models included all independent variables and were identical except for the inclusion of the specialist variable in the middle market. In the small business market, we ran two models linking our
independent variables to performance outcomes. In Model 2a, we included all independent variables. Because of the high incidence of item non-response in the small business segment, we use a reduced set of regressors to increase the sample size.\textsuperscript{4} We excluded the four items with high non-response rates -- current portfolio, current prospects, and the two training measures -- from the regression in Model 2b.

Third, we regressed experienced against premium per account in all market segments. Our early data analysis showed interesting variation in the relationship between experience and revenue generation across the three market segments. We wanted to understand whether this relationship was being driven by the number of current accounts in a sales representative’s portfolio or by the amount of revenue earned from each customer account. In particular, we were interested in knowing whether over time a sales representative could improve their sales performance by deepening relationships with existing customers rather than acquiring additional customers.

**Empirical Results**

Our descriptive statistics suggest three distinct patterns of resource development across the three customer segments (Table 1). Differences across customer segment are particularly strong in the design of the sales process. Our regression analysis indicates that refining resource development in each market to bring it in line with the dominant segment strategy leads to improved performance (Table 2). Variation in the amount of customer prospecting activity, availability of support staff, and the use of technology have particularly strong impacts on performance variation within customer segments.
Personal Market Segment

Our empirical results suggest that the personal market segment is characterized by a transactional service strategy. Consistent with our hypothesis H1a the standardization of sales processes to support a high-volume of business transactions is one of the key drivers of business performance. Personal market sales representatives have a much larger number of current accounts and somewhat more prospects than sales representatives in the small business or middle market segment.

Even more suggestive of a transactional strategy, those personal market representatives with the highest number of current customer accounts and that put the least amount of effort into deepening existing customer accounts have the highest level of performance in the market segment. Table 2 shows that the number of accounts in a sales representative’s current portfolio is the strongest driver of performance in the personal market. Table 3 suggests that more experienced sales representatives perform better when they focus on increasing their number of customer accounts rather than deepening existing accounts. The relationship between revenues per account and experience is negative in the personal segment, suggesting that higher performing personal market sales representatives do not deepen or broaden their existing accounts as they gain experience.
There are several other indicators that resource development favoring a transactional strategy improves business performance in the personal market segment. Consistent with our hypothesis 3a, the use of technology to identify business opportunities has a strong and positive impact on performance. Use of technology to support integrated information management has no impact on performance in this market segment. Additional administrative support has no impact on performance in this market segment. There is also suggestive but inconclusive evidence that collaboration between sales representatives in this market segment hurts performance. The coefficient on this regressor is strong and negative but not quite significant. Reduced collaboration seems consistent with a highly structured approach to customer interaction.

Knowledge development in the personal market segment is surprisingly parallel to the small business and middle market segments. The average personal market representative has seven years of experience compared to six in the middle market and ten in the small business market. The comprehensiveness of initial training and the number of

[Table 2 about here]
days of on-going training are all nearly identical. It is only in the area of education that the personal market segment representatives lag behind the middle market representatives, though their educational attainment levels are comparable to the small business representatives. None of our measures of knowledge development, however, has an independent impact on performance in the personal market segment. Most notably, contrary to our hypothesis H4b, training does not improve performance in this market segment.

Small Business Segment

In the small business segment, our empirical results suggest that aligning resource development with a service-driven strategy raises performance. Sales representatives have more current accounts and prospects than the middle market representatives but less than personal market representatives. The empirical results from Model 2a which uses a smaller sample but a larger set of regressors does not show any strong relationship between the number of accounts and prospects and performance. Both coefficients are positive but neither is significant.

[Table 3 about here]
The key element of the designing service processes in the small business segment appears to be the design of post-sales service support. The empirical results from Model 2b which has double the sample of Model 2a but a smaller set of regressors shows that consistent with our hypothesis H2b the ratio of support staff to sales representatives is a strong and positive driver of performance. Agencies with a higher number of service and administrative workers in providing post-sales service support to customers outperform those which focus staffing on sales representatives.

Other evidence for the importance of post-sales service support comes from the regression of experience and premium per account. As in the personal market segment, there is a negative relationship between years of sales experience and revenue per account. Sales representatives in the small middle market appear to be primarily focused on selling a limited range of products to new customers rather than deepening accounts with existing customers. This sales behavior is consistent with a service-driven model, in which the responsibility for expanding customer relationships and cross-selling products falls primarily to service representatives in the post-sales phase of the relationship.

Findings related to our hypothesis H3b on the use of technology to manage in the small business segment are mixed. Increasing the amount of information on customers electronically available to sales representatives does not impact performance. The use of technology to support integrated information management on the part of service representatives on the other hand appears to have a strong on positive impact on
performance. This mixed finding would also appear to be consistent with a service-driven strategy. Effective information management is more important in the post-sales service support phase than the initial sales transaction.

With respect to knowledge development variables, only education appears to impact performance in the small business segment. Consistent with our hypothesis H4a, an increase in educational attainment in the small business market improves performance. We suspect that the performance impact of education in the small business market stems from the type of product being sold. Products in this market segment are standardized but complex in that they cover multiple insurance lines and areas of risk. Improved analytical and communication skills likely helps with this type of sale. While higher levels of educational attainment improve performance, increasing training does not. Contrary to our hypothesis H4b, there is not a positive performance impact in the small business market from more training.

**Middle Market Segment**

Finally, our empirical analysis suggests that in the middle market segment resource development is aligned with relational strategy positively impacts performance. Consistent with our hypothesis H1a, the design of service processes to support open-ended customer interactions raises performance in this market segment. Middle market sales representatives have a much small number of customer accounts than sales representatives in other market segments. More significantly, sales representatives that spend more time deepening existing customer relationships rather than prospecting for new ones outperform those that spend more time on prospecting. The results of Model 3
show that increasing the amount of time spent on prospecting has a strong and negative impact on performance.

Confirming our hypothesis H4c there is, in addition, a strong relationship between experience and performance in the middle market segment. Middle market sales representatives that have more experience have higher performance, even after controlling for their increased number of accounts. Table 3 shows that a portion of the revenue gain comes from deepening customer relationships. As middle market sales representatives gain experience, their revenue per account grows.

The experience effect suggests that as middle market sales representatives learn more about customers and markets they are able to more effectively tailor products to deepen relationships with their existing portfolio. We suspect that the experience effect is strongly related to the type of product being sold. Products in both the personal and small business segments are menu-driven, so experience is less important in matching product to customer requirements. Products in the middle market segment, by contrast, need to be customized which makes experience more important in meeting customer needs.

While the impact of current portfolio, time prospecting, and experience on performance in the middle market offer strong support for the link between resource development and a relational strategy, others of our hypotheses were not borne out. Contrary to our hypothesis H2a collaboration between sales representatives and product specialists in this market segment has a significant and strongly negative impact on performance. This result is particularly surprising in the middle market segment where
sales representatives are expected to collaborate with product experts to customize products for customers.

Contrary to hypothesis H3b use of technology to manage customer information does not positively impact performance in this market segment. This result we find less surprising. We suspect that the small number of customer accounts managed by each sales representative in this customer segment makes it easy for sales representatives to develop a strong contextual feel for a customer without resort to information technology. Contrary to hypothesis H4a, attainment of a college degree does not positively impact performance. Our descriptive statistics and interviews, however, suggest that attainment of a Bachelor's is almost a prerequisite for employment in the middle market segment. The lack of variation in education attainment in this market segment makes it difficult to capture a performance effect in our regression analysis.

**Conclusions, Limitations, and Future Research**

Our research provides preliminary empirical support for the thesis that the impact of resource development on business performance is strongly mediated by segment strategy. The impact of service process design, information systems, and knowledge development on performance varies across the three strategic business units in our study. Service process design that favors standardization of customer interaction improves performance in the personal market segment, while a service process design that supports open-end collaboration with customers raises performance in the middle market segment. In the small business segment, it is not interaction with customers but collaboration between sales and service representatives that appears to be the most important element
of service process design. Responsibility for acquiring new customer accounts falls to sales representatives, while responsibility for deepening existing customer relationships falls to service representatives.

Information systems improve performance in the personal market segment when used to analyze market opportunities and identify customer leads but not when used to manage customer information. In the small business market, information systems are not important to sales representatives but are important in helping service representatives manage post-sales customer contact. In the middle market segment there is no performance impact from using technology.

Higher levels of educational attainment are a prerequisite for hire in the middle market segment and contribute to performance in the small business market but have no performance impact in the personal market segment. Sales force experience has a strong positive impact in the middle market segment but no impact in the other two segments. Training appears to have no performance impact in any of the three market segments.

Our empirical results suggest that research on the resource-based view of the firm needs to go beyond simply looking at the issue of resource complementarity (Henderson and Cockburn, 1994; Pisano, 1994; Robins and Wiersema, 1995; Mahoney and Pandian, 1992; Ichinowski and Shaw, 1995; MacDuffie, 1995) to examine the question of internal resource differentiation. Strategy implementation in each business unit in the company we studied requires not only bringing a complementary mix of resource investments but a mix of resource investments distinct from those in other business units.

While making a contribution to understanding the link between resource differentiation and strategy implementation in multi-unit service firms, our study has a
two limitations that need to be addressed in future research. The first is the measurement of knowledge development. Given evidence to support the proposition that knowledge development and knowledge sharing are increasingly important to a firm’s competitive advantage (Pfeffer, 1994; Huselid, 1995; Davenport and Prusak, 1997; Lessard and Zaheer, 1996), the lack of performance impact from training and collaboration with colleagues were surprising findings.

The findings on training have some support in the literature on skill development in the service sector. Soskice (1993) suggests that it is the development of interpersonal and communication skills not technical training that are the most important to service sector performance. Capelli (1995) finds that it is not a deficit of technical skills but worker’s attitudes that hinders workplace performance. The findings on collaboration we think may have more to do with limitations of our survey. Our survey asked only about the level of collaboration and not the quality of collaboration and did not probe on when collaboration might be more or less appropriate.

Both the findings on training and collaboration and our qualitative data collection lead us to suspect that we may have looked at the contribution of the sales force knowledge to sales performance in the wrong way. If softer skills are more important to performance in the service sector and knowledge gained through experience can have a significant performance impact, then the more interesting research question may be to focus on how knowledge about customers, products, and markets is codified and transmitted to the sales force. Technology is one way this can be accomplished but changes to organizational processes are also important to enhancing organizational memory (Anand, Manz, Glick, 1998; Huber, 1991; Sanchez and Mahoney, 1996).
Future research on the links between resource development and service strategy needs more systematic attention to variation by customer segment in the role of organizational processes in capturing and sharing knowledge on customers and markets.

A second shortcoming of our study is the limitation of our research to a single business enterprise. Selecting a single firm for in-depth study helped us fully specify the links between performance, strategy, and resource development and identify metrics to test this link. But our research design necessarily limits the generalizability of the conclusions. Based on what we have learned in this study the next step is to use a refined set of metrics to conduct controlled comparisons across a broader set of firms to see how multi-firm data collection expands and helps us refine the empirical links drawn in this study. The research framework and metrics developed in this study create a basis for more systematic multi-firm analysis.
References


Figure 1: Aligning Resource Development with Service Strategy

- transactional
- service-oriented
- relational
<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Personal Market</th>
<th>Small Business</th>
<th>Middle Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer accounts (median)</td>
<td>1000</td>
<td>300</td>
<td>23</td>
</tr>
<tr>
<td>Current prospects (median)</td>
<td>100</td>
<td>50</td>
<td>30</td>
</tr>
<tr>
<td>Time prospecting, % of time prospecting (mean)</td>
<td>.16</td>
<td>.25</td>
<td>.24</td>
</tr>
<tr>
<td>Support staff, hours per week (median)</td>
<td>15</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>Support staff, ratio support to sales staff (median)</td>
<td>-</td>
<td>1.667</td>
<td>-</td>
</tr>
<tr>
<td>Product specialist, % of time used (mean)</td>
<td>-</td>
<td>-</td>
<td>.28</td>
</tr>
<tr>
<td>Collaboration, % every few days or more (mean)</td>
<td>.63</td>
<td>-</td>
<td>.52</td>
</tr>
<tr>
<td>Lead generation, % once a week or more (mean)</td>
<td>.51</td>
<td>-</td>
<td>.48</td>
</tr>
<tr>
<td>Information management, % of data elements (mean)</td>
<td>.52</td>
<td>-</td>
<td>.52</td>
</tr>
<tr>
<td>Information management, % using AMS (mean)</td>
<td>-</td>
<td>.80</td>
<td>-</td>
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<tr>
<td>Experience, years in current job (median)</td>
<td>7</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Initial training, % of areas covered (median)</td>
<td>.67</td>
<td>.67</td>
<td>.72</td>
</tr>
<tr>
<td>On-going training, days in last 12 months (median)</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Educational, % with BA or more (mean)</td>
<td>.60</td>
<td>.58</td>
<td>.92</td>
</tr>
</tbody>
</table>
Table 2 -- Relationship Between Sales Process Design, Use of Technology, Knowledge Development and Performance

Dependent Variable: Log (Premium)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Model 1</th>
<th>Model 2a</th>
<th>Model 2b</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(t-statistic)</td>
<td>(t-statistic)</td>
<td>(t-statistic)</td>
<td>(t-statistic)</td>
</tr>
<tr>
<td>N=</td>
<td>215</td>
<td>55</td>
<td>109</td>
<td>187</td>
</tr>
<tr>
<td>R-squared=</td>
<td>.640</td>
<td>.790</td>
<td>.764</td>
<td>.515</td>
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<tr>
<td>Current</td>
<td>0.479</td>
<td>0.020</td>
<td>-</td>
<td>0.332</td>
</tr>
<tr>
<td>Portfolio</td>
<td>(6.93)**</td>
<td>(0.31)</td>
<td>-</td>
<td>(2.33)**</td>
</tr>
<tr>
<td>Current</td>
<td>0.013</td>
<td>-0.017</td>
<td>-</td>
<td>-0.008</td>
</tr>
<tr>
<td>Prospects</td>
<td>(0.55)</td>
<td>(-0.29)</td>
<td></td>
<td>(0.16)</td>
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<tr>
<td>Time</td>
<td>-0.001</td>
<td>-0.195</td>
<td>-0.059</td>
<td>-1.187</td>
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<tr>
<td>Prospecting</td>
<td>(-0.34)</td>
<td>(-0.48)</td>
<td>(-0.24)</td>
<td>(-1.71)*</td>
</tr>
<tr>
<td>Adm Support/</td>
<td>0.095</td>
<td>0.050</td>
<td>0.070</td>
<td>0.316</td>
</tr>
<tr>
<td>Ratio</td>
<td>(0.93)</td>
<td>(0.65)</td>
<td>(1.80)*</td>
<td>(1.11)</td>
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<tr>
<td>Teaming</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-0.867</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td>(-2.21)**</td>
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<tr>
<td>Seek Help</td>
<td>-0.129</td>
<td>-</td>
<td>-</td>
<td>0.050</td>
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<tr>
<td></td>
<td>(-1.60)</td>
<td></td>
<td></td>
<td>(0.32)</td>
</tr>
<tr>
<td>Experience/</td>
<td>-0.010</td>
<td>-0.205</td>
<td>-0.037</td>
<td>0.256</td>
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<tr>
<td>Avg. Tenure</td>
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<td>(-1.58)</td>
<td>(-0.56)</td>
<td>(2.50)**</td>
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<tr>
<td>College Degree/</td>
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<td>0.377</td>
<td>0.220</td>
<td>0.070</td>
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<tr>
<td>Share BA</td>
<td>(0.50)</td>
<td>(1.56)</td>
<td>(1.76)*</td>
<td>(0.38)</td>
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<tr>
<td>On-Going Training</td>
<td>-0.030</td>
<td>0.042</td>
<td>-</td>
<td>-0.091</td>
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<tr>
<td></td>
<td>(-0.92)</td>
<td>(0.53)</td>
<td></td>
<td>(-1.11)</td>
</tr>
<tr>
<td>Initial Training</td>
<td>0.039</td>
<td>-0.011</td>
<td>-</td>
<td>0.326</td>
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<tr>
<td></td>
<td>(0.23)</td>
<td>(-0.04)</td>
<td></td>
<td>(0.75)</td>
</tr>
<tr>
<td>CIS Use</td>
<td>0.143</td>
<td>-</td>
<td>-</td>
<td>-0.179</td>
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<tr>
<td>Lead Generation</td>
<td>(1.79)*</td>
<td></td>
<td></td>
<td>(-0.98)</td>
</tr>
<tr>
<td>Agency Mgmt Sys</td>
<td>-</td>
<td>0.451</td>
<td>0.281</td>
<td>-</td>
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<tr>
<td></td>
<td></td>
<td>(1.38)</td>
<td>(1.81)*</td>
<td></td>
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<tr>
<td>Electronic Access</td>
<td>-0.109</td>
<td>-0.158</td>
<td>-</td>
<td>-0.451</td>
</tr>
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<td></td>
<td>(-0.69)</td>
<td>(-0.60)</td>
<td></td>
<td>(-1.51)</td>
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</tbody>
</table>

** - significant at 5% level
* - significant at 10% level

Agency Size Incl.  Agency Size Incl.
Table 3 -- Relationship Between Experience and Premium per Account

<table>
<thead>
<tr>
<th>Parameter:</th>
<th>Personal Market</th>
<th>Small Business</th>
<th>Middle Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient Est. (t-statistic)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=</td>
<td>252</td>
<td>91</td>
<td>249</td>
</tr>
<tr>
<td>R-squared=</td>
<td>.408</td>
<td>.074</td>
<td>.218</td>
</tr>
<tr>
<td>Experience/</td>
<td>-0.412</td>
<td>-0.622</td>
<td>0.123</td>
</tr>
<tr>
<td>Average Tenure</td>
<td>(-9.89)**</td>
<td>(-2.66)**</td>
<td>(1.78)*</td>
</tr>
</tbody>
</table>

** - significant at 5% level
* - significant at 10% level

1 We fielded our sales force and agency survey over three months between April and June of 1998. We conducted a comprehensive survey of both the sales representatives in the middle market and the agencies in the small business market. In total we surveyed 365 sales representatives in the middle market with an 83% response rate. In the small business market we surveyed 191 agencies with a 68% response rate. In the personal market segment we surveyed only 441 of the 1000 sales representatives with a 68% response rate. Our overall response survey response rate across the three segments was 74%.

2 A variety of possible intermediate measures of service performance have been suggested, including expanding the number of new customer’s acquired, increasing the amount of revenue generate per customer account and the length of customer relationships (Grant and Schlesinger, 1995). It was our expectation that there are possible trade-offs between the these intermediate measures of performance and that these trade-offs may have implications for segment strategies, e.g. in some segments acquiring new customers may require putting less effort into broadening customer relationships. We, therefore, used sales revenue per sales representative as a comparable measure of performance and tried to probe for how intermediate performance variables impacted sales performance across customer segments.

3 Insurance rates and thus the premium earned from insurance products are heavily impacted by state regulation. By controlling for state effects, we made the primary performance comparison between sales representatives working in the same or similar regulatory environments.

4 The reduced set of regressors doubles the percentage of respondents included in the regression from 41% to 83%.

5 Experience is strongly correlated with performance (see correlation matrices in appendix), but the correlation disappears when controlling for the number of current accounts.

6 Another possible explanation for the experience effect is that more senior account executives are assigned the large and more promising customer prospects by their managers and, thus, have higher levels of performance. While a plausible explanation in many company settings, this explanation does not hold for this insurance company. According the executive vice president of the middle market segment, the sales representatives in his market segment are “self-directed” and generate their new leads rather than receiving new accounts from their managers. The “self-directed” appellation was not meant positively. The executive is leading an effort to allow for more central direction of the sales force. Our data on the main source of leads confirmed that the sales representatives were self-directed. Sales representatives generated 40% of their own leads from their own customer databases with just 5% coming from managers.