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COMPETENCE ACQUISITION IN RETAIL FOOD: EFFICIENT CONSUMER RESPONSE AND ENVIRONMENTAL MANAGEMENT

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ABSTRACT

Based on interviews with retail food store managers and a subsequent survey, this paper traces the pathways that spawn competence acquisition in the retail food industry. It finds that having an essential capability for learning, that is, obtaining new ideas, concepts, methods, tends to breed competencies in a number of areas which are of both business and social significance. In this study, the capacity of this essential capability to generate competencies in efficient consumer response (ECR) and environmental management (EM) are examined. These competencies have attracted the attention of the retail food industry in its efforts to become more competitive with alternative retail food channels. The results show that firms possessing the essential capability of generating new ideas are more likely to have higher sales per square foot. Ties with suppliers lead to higher sales per square foot through improved environmental practices and more consumer education. Technical assistance helps retail grocers acquire a social competence in environmental management

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Based on interviews with retail food managers and a subsequent survey, this paper explores the routes to competence acquisition in the retail food industry. With the level of competition in the food industry rising and a rapidly changing retail environment, competence acquisition will be a key to the grocers' long-term success. Relative to other sectors, supermarkets have traditionally had high levels of competence in linking key resources and capabilities and combining, transforming, and channeling them to satisfy customer needs. As such, they have enjoyed a dominant position in food retailing. They have had a history of investment in productivity and have set standards in the retail sectors for self-service and point-of-sale information (scanners).

More recently, however, grocers have been challenged by other retail channels. With changing consumer demographics and lifestyles, alternative whole meal replacement chains (e.g., Boston Market) have been flourishing across the United States, while market growth for the grocers has remained flat. Specialty food stores (e.g., PetSmart), hypermarkets, deep discounters, and, most significantly, general merchandisers like Wal-Mart have eroded market positions grocers once controlled. In 1995, Wal-Mart already had 275 supercenters (Progressive Grocer, 1996). It was opening another 100 of these stores per year. Each sold an average of $20 million worth of food per year. Wal-Mart and the other mass merchandisers had become major factors

with which the supermarkets had to contend and some conventional supermarkets were having difficulty holding their own.

In response, the retail grocery industry and food manufacturers initiated a joint cooperative effort to improve "the effectiveness, efficiency and responsiveness of the grocery-products supply chain" (ECR 1994 Progress Report, FMI). This effort, under the umbrella term *efficient consumer response* (ECR), identified four main processes for improvement. Each depends on electronic/computer technologies -- point-of-sale scanning, electronic transmission of information, and bar codes for case and pallet identification. The grocery business in the past was not a particularly high-tech endeavor. However, today this mingling of high tech and advanced human resources is common to all businesses (Stewart, 1997). As stressed in the *ECR Technology Guide*, (Grocery Manufacturers of America, undated), while investment in technology can be significant, the "solutions for implementing ECR strategies are 80 percent people, policies and processes . . ."

There is general agreement that the industry's future depends on the skills and capabilities of its people. What is not clear, however, is the routes to the acquisition of new competencies in the industry. How can grocers acquire the competencies they need, so that they can flourish under conditions of changing consumer demographics and lifestyles and intense competition from alternative distribution and retail formats? Some organizations appear to be better at acquiring competencies than others. What accounts for their being able to do so?

To investigate competency acquisition in the retail food industry, we did interviews and carried out a survey among the grocers in one state. This paper reports on the results of the interviews and the survey. It focuses on two types of competence: *business competence*, where

the benefits accrue mainly to the firm; and *social competence*, where the benefits diffuse more widely to society. Since competence acquisition is affected by uncertainty, complexity, and organizational conflicts, understanding it "cannot be optimally derived from normative theory" (Amit and Schoemaker, 1993:333). Given that optimal derivation from normative theory is not possible, we aim for some systematization based on our empirical results.

The Resource-Based View of the Firm

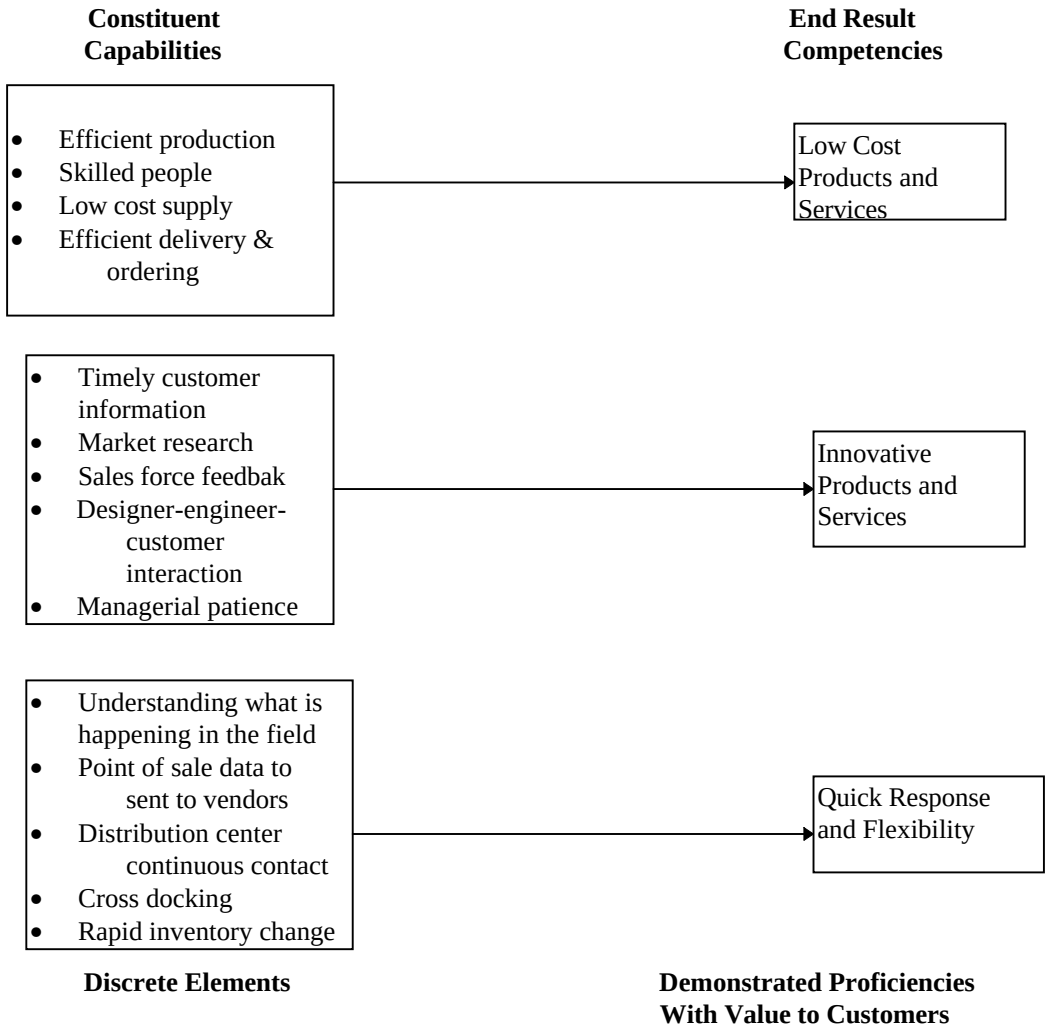
We place the pathways that spawn competence acquisition in the context of the resource-based view (RBV) of the firm. RBV comes close to being strategic management's dominant paradigm (Collis and Montgomery, 1995). Industrial economics, an earlier paradigm, holds that superior performance arises from a competitive position. The firm seeks monopoly power and strives to be in the right segment and strategic group in an industry and to neutralize pressure from competitors. RBV, in contrast, attempts to understand performance differences which industry conditions cannot explain (Peteraf, 1993). It sees the firm as a collection of resources, capabilities, and competencies, the disposal of which, over time, is determined by administrative decision (Penrose, 1968; 4th edition). The firm is distinguished by *how* it converts its resources, capabilities, and competencies into goods and services that customers value.

Resources consist of financial and physical capital and other tangible property. Protected by legal rights, they can be owned, transferred, and traded (Hall, 1992; 1993). Capabilities and competencies are less measurable, analyzable, and understandable than resources. They cannot be owned, transferred, and traded in the same way. Indeed, the terms capabilities and competencies often are substituted for each other. They are synonyms used interchangeably with words like capacities, endowments, skills, and aptitudes. The distinction between capabilities and

competencies is "subtle at best" (Barney, 1996; p. 144; also see Barney, 1991), but, though subtle, it is important if the RBV is to be fully developed.

We propose that capabilities stand for an organization's potential, while competencies denote its achieved proficiencies (See Figure 1). Capabilities are a system's components, while competencies are its realized wholes. This distinction is similar to one made between an

Figure 1. Constituent Capabilities and End-Result Competencies

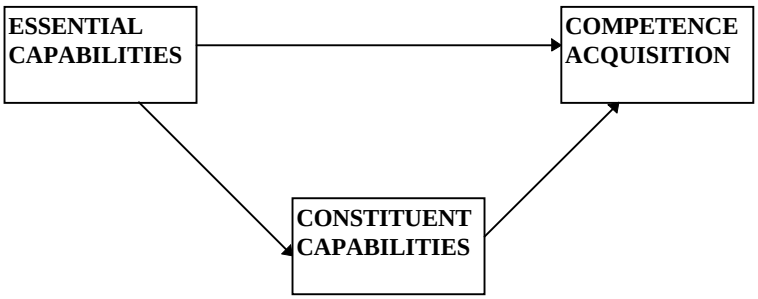


organization's elements and the fitting together of these elements into coherent structures or architectures (Henderson and Clark, 1990, also see Henderson and Cockburn, 1994).

Through its competencies the organization is able to tie together its various capabilities (see: Ackoff, 1994; King, 1995; Stalk, Evans, and Shulman, 1992) in ways that *give value to customers* (Hamel and Pralahad, 1994). Because competencies involve complex harmonization of parts, they are difficult to imitate. Indeed, the more complex the integration among discrete elements, the more difficult it is to comprehend and copy a competency and the easier it is for a firm to sustain a competitive position (Grant, 1991).

An organization has many capabilities, but few competencies (see Hamel and Pralahad, 1994). Identifying which capabilities are relevant and understanding how they relate is complex. Just to participate in an industry, the number of capabilities needed can be very large (Long and Vickers-Koch, 1995). Many threshold capabilities can be necessary (Hamel and Pralahad, 1994). We believe that *essential* capabilities are few in number and generic in quality (see Collis, 1994). They are deeper and more underlying than *constituent* capabilities. They directly lead to competencies as well as being the sources of constituent capabilities (see Figure 2). They are at the root of competency acquisition.

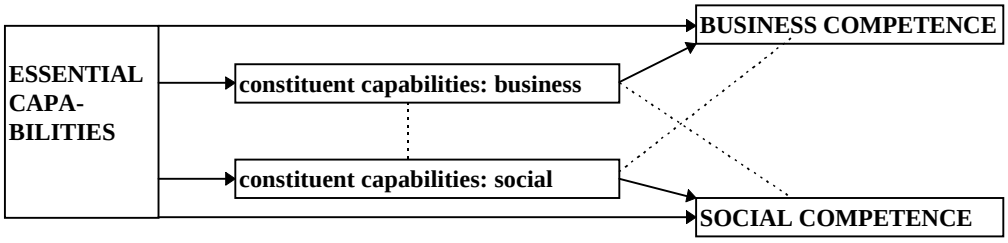
Figure 2. Essential Capabilities, Constituent Capabilities, and the Acquisition of Competence



An important essential capability is the capacity to obtain new ideas, concepts, and methods and move beyond the supply the organization currently has (see Brumagin, 1994; Collis, 1994; Powell, 1992; Miller and Shamsie, 1996; Lenz, 1980; Pralahad and Hamel, 1990; Ulrich and Lake, 1990; McGrath, 1996; Abrahamson, 1991; Nelson and Winter, 1982; Winter, 1987; and Chamberlain, 1968). The critical feature of this capability is its generative powers. It can affect the acquisition of many competencies and constituent capabilities. Its impacts can spin off in a number of directions, some intended and some not.

One way of conceiving this capacity is in terms of additional impacts, other than those that provide direct business benefit. Thus, an essential capability should yield not only business competence and the constituent capabilities that are associated with it, where the main benefit accrues to those who own, work for, and are directly associated with the firm; but, it also should yield social competence (see Figure 3) and the constituent capabilities associated with it. Here the benefits accrue more widely to communities where the firm is located and to society at large (what economists call a public good).

Figure 3. Essential Capabilities Generative Powers: Acquisition Pathways for Business *and* Social Competence



In theory, the power of essential capabilities is that they can, but not necessarily do, stimulate these manifold impacts. When they stimulate such impacts, when the type of cross-fertilization in competence acquisition that we are referring to occurs, it can help sustain a competitive position, since the array of competencies created would tend to be even more casually ambiguous, complex, and hard to copy (Reed and DeFillippi, 1990; Barney 1986a and 1986b) than otherwise would be the case.

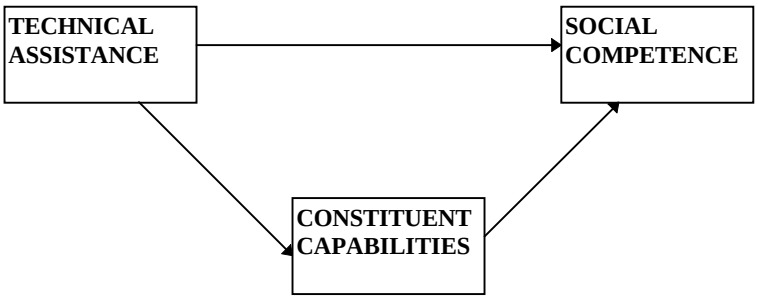
It is our argument that the same essential capabilities that generate business competence can generate social competence. An example of a social competence is environmental management (EM). It has relevance for many business sectors (Porter and Van der Linde, 1995; Gladwin, 1993). While it first appeared most critical for manufacturers, it is playing an increasingly important role in the service sector. In Western Europe, grocers compete with each other to demonstrate who has the most advanced environmental practices. Like total quality management, EM can help grocers increase profits by reducing operating costs (e.g., electricity and gas, waste disposal fees, water usage and sewer). If fully implemented, it bridges many business functions. For example, with regard to the simple decision on lighting, the store operator must consider capital cost and energy efficiency (cost impact), along with aesthetics and desired product presentation (market impact), and future disposal issues (risk impact). In the United States, consumer demand for "environmentally friendly" goods is expected to grow. However, with regard to a social competence like managing the environment, the private incentive to move forward may not be great (Walley and Whitehead, 1994). The motivation to act may be weak.

Given these limitations, can the same essential capabilities that stimulate the acquisition of business competence be effective in stimulating the acquisition of social competence? The

obstacles and resistance to social competence acquisition have to be high. Besides prodding from government, authorities what stimulus is there for social competence acquisition?

Technical assistance dedicated to the purpose of EM acquisition is one possibility (see Figure 4). This assistance can be given by business associations, consultants, and government agencies. It can come from contacts with peers and be in the form of publications, training sessions, workshops, and conferences. Of course, this assistance has to be sought out by the firm, but if available, it may create a parallel route that bolsters the effects of essential capabilities on the acquisition of social competence.

Figure 4. Technical Assistance, Constituent Capabilities, and the Acquisition of Social Competence



Study Methods

A survey was conducted to explore these ideas about competence acquisition. Prior to carrying out the survey, in-store interviews were conducted with the grocers. These interviews were especially informative since they provided an opportunity for open dialogue and allowed us to hear perspectives that might not be captured in a mailed survey. Initially volunteers were solicited through articles and announcements in Minnesota Grocer's Association (MGA) magazine. The project team also tried to recruit managers from a diversity of stores by category

(e.g., convenience, supermarkets, natural foods) and location (metro area and greater Minnesota grocers). We obtained fifteen volunteers and conducted eleven in-depth, on-site interviews with either the store owner or manager.

The in-store interviews were an important input to the survey that was designed. The design of the survey also was based on discussions with the Food Marketing Institute (FMI), a review of a previous FMI surveys, an international literature search of best practices in the grocery industry, information learned at several national industry conferences, and discussions with key regional grocery leaders. We developed a preliminary survey and distributed it to several grocers to test for viability, clarity, and ease of completion. Feedback from these grocers was used to fine tune the instrument that was distributed broadly.

The survey that was sent to the grocers had questions pertaining to store characteristics, management policies and budgets, efficient consumer response (ECR), environmental management (EM), implementation difficulties, and methods of obtaining external assistance. The original eleven store managers that were interviewed completed this survey as well as several more store managers whose names were obtained from MGA. To increase the number of respondents, MGA's 1996 directory was used. The survey was mailed to 120 grocers on July 22, 1996. To ensure an unbiased sample, we sent the survey to every third grocer in the directory. Follow-up calls were made to those grocers who did not complete the survey. This mailing resulted in an additional 34 responses for a total of 45 completed surveys. Surveys with insignificant data were disqualified. In many instances, store owners and managers were contacted and recontacted to check the accuracy of the data and to be certain that they understood the questions. We were especially careful to verify sensitive information.

Operationalizing the Variables

To understand the routes to competence acquisition in the grocery industry, we defined and operationalized the key variables. The first variable was *the essential capability* of *obtaining new ideas, concepts, and methods*. It was defined in terms of the respondents' answers to eight survey questions. On a 7 point Likert scale they were asked to indicate the extent to which they agreed or disagreed with the following statements:

- Searching for new ideas and methods is part of what we do.
- We compare our practices to those of the best grocers in the industry.
- We constantly seek new ideas and practices.
- We are constantly researching what are the best practices.
- We encourage individuals to acquire new competencies.
- We work to be the best at what we do.
- We encourage team building.
- We evaluate other industries' practices for relevance to our industry.

This variable was called Newidea. Its reliability coefficient was .830.

A number of performance measures have been used in the industry to show *business competence* (Coopers and Lybrand, 1996). They include sales per employee and sales per checkout, but the most important, by far, is sales per square foot This indicator suggests rapid inventory turns and fast cycle times. It implies that the store's managers have a good grasp of the right assortment of merchandise to offer in the proper proportions and appropriate mix. The managers provide customers with the correct formula of goods to maximize their stores' returns. In the grocery business, where many products are sold (dry goods, perishables, bakery, deli, fruits and vegetables, meats, and non-edible cleaning products, greeting cards, cosmetics, and housewares), the challenge of choosing the right assortment of goods is great (FMI, 1995). For

purposes of this analysis, the main limitation of sales per square foot (Salessqu) is that it is an indicator of demonstrated or realized competence. It does not reveal the patterns that produce this result.

Obviously, many constituent capabilities are needed to produce this result. The *constituent capability* chosen for focus was closeness to supplier. The rationale for choosing this capability is that supermarkets are at the end point in a long chain of food distribution that starts with the grower and processor/manufacturer and moves through an assortment of wholesalers, distributors, and warehouses before final purchase and consumption. The average supermarket deals with many different suppliers. The industry understands that the supply chain is important to improving its efficiency (i.e. sales per square foot). It has organized a campaign, efficient consumer response (ECR), to achieve greater supply chain coordination and cooperation and to eliminate what it believes to be some $30 billion in supply chain excess costs: "The ultimate goal is a responsive, consumer-drive system in which distributors and suppliers work together as business allies to maximize consumer satisfaction and minimize cost" (Kurt Salmon Associates, 1993).

Much of the concern has been with the efficiency of Wal-Mart's distribution system in comparison to that of supermarkets. Wal-Mart's distribution costs are estimated to be about 3 percent of total sales, while those of the supermarkets are estimated to be about 6 percent (Progressive Grocer, 1996). Thus, the industry's goal has been to reengineer its supply chain with new alliances and incentives and to create more efficient partnerships and relationships with suppliers to save costs (McKinsey and Company, 1996). Stronger alliances between retailers and suppliers should mean leaner inventories, lower inventory costs, better logistics, and improved

exchange of information. It should result in higher product turnover and greater sales per square foot.

Closeness to supplier was defined in terms of the respondents' answers to six questions. On a 7 point Likert scale, the respondents indicated the extent to which they agreed or disagreed with the following statements:

- We are familiar with efficient consumer response.
- Developing closer alliances with our suppliers is a high priority.
- We have been developing stronger alliances with our suppliers.
- Working with our suppliers has enabled us to reduce waste.
- Working with our suppliers has enabled us to reduce paper work.
- We have been able to reduce transportation costs by working with our suppliers.

This variable was called Supplier, and its reliability coefficient was .765.

As indicated, the *social competence* on which this study focused was environmental management (EM). Though not a smokestack industry, numerous environmental policies and regulations affect retail food. They range from labeling to packaging, storage, handling, shelf-life, and transportation. Opportunities for increased efficiency and lower cost exist across many areas from refrigeration to heating, ventilation, air conditioning, and lighting. Consumers have concerns about health risks and about causes like bottling, packaging, and animal welfare. Though the environment affects many aspects of a grocer's business, in comparison to labor costs and competition, it has been near the bottom of the list of priorities of U.S. supermarket managers and their customers (Progressive Grocer, 1996). Precisely because it is near the bottom we considered it a good social competence to study.

In Western Europe, the situation has been different (see Poole, 1996) with the industry being more aggressive at "green management" and customers having a stronger eco-ethic and

being more receptive to environmental goods and environmentally sound practices. Western European supermarkets have reduced costs by introducing advanced waste management practices (this is more possible because solid waste handling charges are so much higher in Europe), and they have raised profits by offering environmental products with high margins. U.S. managers have not shown the same appreciation for the role the environment can play in showing off the elegance of a store, making for a special ambiance via aesthetic touches like proper lighting, enhanced visual impression, and proper layout and display. Nor have they shown the same appreciation for the role that even temperature control and uniform air quality and humidity can play in motivating customers to linger in a store and shop more. Even U.S. managers who have an interest in resource efficiency and a desire to be environmentally friendly report that their knowledge of resource and energy costs is inadequate and they cannot verify savings if they introduce innovative practices. Most U.S. managers see the environment as a worthy objective but one that costs them money that could be better spent elsewhere. Already operating at very slim margins, they wonder if they can afford the expense.

Thus, in terms of our modeling, a social competence that is distinct from business competence, the environment has good properties. However, *environmental competence* does not have a simple, generally accepted indicator, like sales per square foot. A number of measures were tried; the following two were adopted because the data were good and they came together in a logical and statistically coherent way. Even so, these measures leave much to be desired, as they do not account for important aspects of the environment that are related to technology (e.g. equipment use such as refrigeration) and energy. Information was collected about refrigeration, but there were only two items on the survey (developing a refrigeration management plan and

changing CFC refrigeration to HCFC refrigeration). The authors tried, but failed, to get data about energy use. Many of the respondents did not know how much energy they consumed and were in no position to easily obtain this information. Thus, measures of environmental competence capture merely the most obvious signs of environmental competence, one having to do with how managers deal with backroom issues and the other having to do with how they relate to customers.

In both cases, the respondents were given a 7 point Likert scale with choices from "we are not familiar with this practice" to "we do this all the time." The first measure, that refers to a store's in-house (office and warehouse) programs, was operationalized with reference to the following items:

- Aluminum cans recycling
- Newspaper recycling
- Plastic bottle recycling
- White paper recycling
- Wooden pallets recycling
- Stretch/shrink wrap recycling
- Composting of organic waste
- Sending food to a food bank/shelf

This variable, called In-house, had a reliability coefficient of .770

The second variable refers to how much consumer education the store offers. It was operationalized with reference to the following items:

- Shelf labeling/signs
- Carrying product lines made from recycled paper
- Offering a special line of environmental products
- Providing bulk selection of products
- Advertising about environmental programs

- Distributing environmental brochures/flyers
- Using environmentally smart campaigns
- Operating information booths/stands
- Participating in environmental organizations
- Asking suppliers to reduce packaging/shipping materials

This variable was called Consed, and it had a reliability coefficient of .835.

Choosing a *constituent capability* that contributes to environmental competence was difficult. What set of skills and aptitudes best prepared managers for these tasks? The most generic measure that could be devised focused on policies, training, and administration. This variable was measured via a 7 point Likert scale in which respondents were given choices from "we are not familiar with this practice" to "we do this all the time." The items that operationalized this variable were:

- Having an environmental policy statement
- Having an environmental task force
- Environmental education and training for management
- Environmental education and training for employees
- Providing environmental reports to managers

The variable was called Envmgmt, and its reliability coefficient was .884.

In interviews with managers, they reported many *obstacles* to acquiring environmental competence. These items were captured with a list of 10 items. On a 7 point Likert scale, respondents were asked to indicate the extent to which they agreed or disagreed that the following were hindrances to environmental projects:

- Lack of technical assistance
- Lack of capital
- Lack of time and labor (cost benefits not clear)
- Lack of management support

- Insufficient information
- Lack of interest
- Availability of technology
- Other corporate priorities
- Space limitation
- Lack of time to research best practices

This variable was called Obstacles. Its reliability coefficient was .853.

Finally, a variable was created to examine the idea that *technical assistance* can help overcome these obstacles. It is another route to the new ideas, concepts, and methods the managers need in a setting where the managers own motivation to find them is weak. To operationalize this variable, 11 organizations were listed from whom the managers could obtain technical information to help them implement environmental projects and 6 types of information and training that they could receive. On a 7 point Likert scale, they were asked to indicate the extent to which they relied on these organizations or used this type of information and training. The organizations ranged from national ones in the retail food industry to local retail food associations, the Chamber of Commerce, the utility company, consultants, government agencies, and other supermarkets. Information and training extended from requesting publications to attending conferences and workshops and subscribing to journals. This variable was called Techasst. Its reliability coefficient was .869.

Results

The average total store size of the respondents was 21,262 square feet, compared to a national average of 28,077 (Progressive Grocer, 1996). While these stores were smaller than national average, average sales were $11.22 million, compared to a national average of $10.46

million. Thus average sales per square foot were considerably higher than the national average ($472.46 compared to a national average of $372.63).

The means and standard deviations of the variables were computed and a correlation matrix constructed. Glancing at the means of the variables (See Table 1) bears out that the environment is a lower priority than others. The means for the environmental variables, for instance, fall under 4, while those for new ideas and supplier approach, or are above 5. The exception is the in-house environmental programs, whose mean is about the same as that of close ties with suppliers.

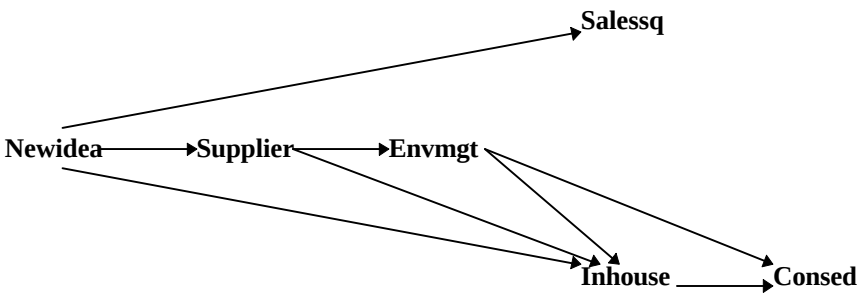
Table 1. Essential Capability and Competence Acquisition: Correlation Matrix

Variable	mean	std.dev.	Newidea	Salessq	Supplier	In-house	Consed	Envmgmt	Obstacles	Techaast
Newidea	5.73	.81								
Salessq	472.5	584.1	.37*							
Supplier	4.90	.96	.61**	.22						
In-house	4.82	1.21	.35*	.00	.37*					
Consed	3.77	1.45	.08	.02	.27	.42*				
Envmgmt		3.17	1.78	.24	-.01	.45**	.59**	.57**		
Obstacles		4.64	1.08	-.14	-.13	-.11	.02	-.07	-.24	
Techasst	3.49	1.06	-.11	.06	.09	.38*	.41**	.44**	-.02	
Totalsq	21085	19145	.23	.11	.28	.29	.09	.23	-.04	.24

* Significant at the .05 level
** Significant at the .01 level

Figure 5 traces out the significant relationships that emanate from the essential capability, Newidea. The trail of significant impacts moves much in the way we expected it would. Newidea has significant positive effects on the business competence of sales per square foot. It has significant positive effects on the constituent capability of this competence, close ties with suppliers. Close ties with suppliers, however, does not have significant positive effects on sales per square foot. A number of possible explanations will be considered later. Finally, Newidea has significant positive effects on the social competence, in-house environmental programs. The route to its effects on the other measure of social competence, consumer programs, is more circuitous. However, it can be drawn by moving from Supplier to Envmgmt or by moving from Supplier to In-house and then to consumer education.

Figure 5. The Trail of Significant Relations That Emanate from Newidea



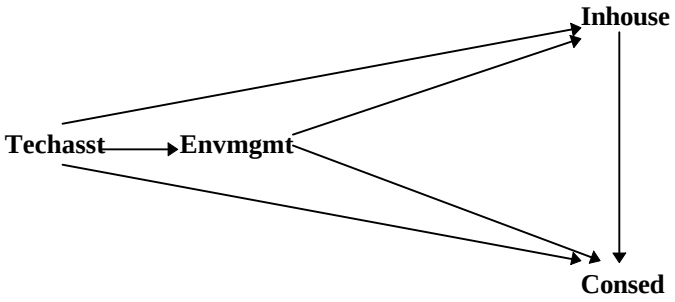
The significant relations between supplier and environmental management and between supplier and in-house are interesting since they point to the kind of cross-fertilization between business and social competencies believed possible. Supplier, the constituent capability of the business competence, contributes to the social competence directly (In-house) and indirectly through its positive effects on environmental management.

A general receptivity to constituent skills may explain the relationship between supplier and environmental management. The acquisition of one type of constituent capability may make an organization more likely to acquire another type of constituent capability. The relationship between supplier and in-house makes sense when it is understood that good supplier relations are needed to effectively carry out in-house recycling programs.

Environmental management has a significant positive influence on both measures of environmental competence. Having environmental policies in place, creating an organizational structure for carrying out of those policies, and raising employee awareness through training and other means seems to play a very important role in the acquisition of environmental competence.

Figure 6 traces the significant relationships that emanate from technical assistance. This variable behaves as expected. Techasst has significant positive impacts on both measures of environmental competence, In-house and Consed. It has indirect effects as well through the acquisition of environmental management capabilities. Technical assistance appears to be a very good supplement to the essential capability of Newidea in stimulating social competence

Figure 6. The Trail of Significant Relations That Emanate from Techasst



acquisition. The lack of significant effects that the variable Obstacles has (see Table 1) also is interesting. Despite claims made, the commonly mentioned barriers were *not* influential constraining forces on the acquisition of environmental competence. Also interesting is the lack of significant effects of size.

A number of regression analyses were conducted to further test these ideas. In these analyses, supermarket size was controlled by using total square feet, or Totalsq, to operationalize it. Table 2 shows that the essential capability, Newidea, has a significant positive effect on the acquisition of the business competence, Salessq, and on the acquisition of the constituent capability of this competence, Supplier. However, the constituent capability of the competence, Supplier, does not have a significant positive effect on the business competence, Salessq.

Table 2. New Ideas, Concepts, and Methods and Business Competence

	Dependent Variables								
Independent	Salessq			Supplier			Salessq		
Variables	beta	T	Sig T	beta	T	Sig T	beta	T	Sig T
Newidea	.36	2.42	.02	.62	5.32	.00	.37	2.03	.05
Totalsq	.03	.17	.87	.14	1.20	.24	.03	.18	.86
Supplier							-.02	-.09	.93
R Square	.14			.46			.14		
F Signif	.05			.00			.11		

Table 3 shows that the essential capability, Newidea, has a significant positive effect on one measure of the social competence, In-house, but not on the other, Consed. Technical assistance has a significant positive influence on the acquisition of both indicators of social competence.

Table 3. New Ideas, Concepts, and Methods and Social Competence

	Dependent Variables											
Independent	Inhouse			Consed			Inhouse			Consed		
Variables	beta	T	Sig T	beta	T	Sig T	beta	T	Sig T	beta	T	Sig T
Newidea	.32	2.06	.05	.13	.80	.43	.26	1.65	.10	.12	.77	.45
Totalsq	.22	1.42	.17	.10	.59	.56	.07	.47	.64	-.02	.09	.93
Obstacles							.12	.89	.40	-.04	-.28	.78
Techasst							.40	2.43	.02	.37	2.10	.04
R Square	.20			.03			.34			.18		
F Signif	.02			.52			.01			.11		

Table 4 shows that the essential capability, Newidea, does not stimulate the creation of the constituent capability of the social competence, Envmgmt. However, technical assistance again works as an alternate route. In this instance, technical assistance has a significant positive influence on Envmgmt, the constituent capability of this social competence.

Table 4. New Ideas, Concepts, and Methods and the Constituent Capability of Social Competence

	Dependent Variables					
Independent	Envmgmt			Envmgmt		
Variables	beta	T	Sig T	beta	T	Sig T
Newidea	.12	.78	.44	-.01	-.09	.93
Totalsq	.21	1.37	.18	-.02	-.13	.90
Obstacles				-.10	-.70	.49
Techasst				.45	2.69	.01
R Square	.07			.21		
F Signif	.21			.06		

Table 5 shows that the constituent capability of the social competence, Envmgmt, has a significant positive effect on the social competence, measured either as In-house or Consed.

Table 5. The Constituent Capability of the Social Competence and the Social Competence

	Dependent Variables											
Independent	Inhouse			Consed			Inhouse			Consed		
Variables	beta	T	Sig T	beta	T	Sig T	beta	T	Sig T	beta	T	Sig T
Newidea	.29	2.24	.03	.16	1.22	.23	.26	1.94	.05	.13	.91	.37
Envmgmt	.51	4.08	.00	.56	4.23	.00	.47	4.23	.00	.51	3.46	.00
Totalsq	.16	1.27	.21	.02	.21	.83	.08	.63	.54	-.01	-.06	.96
Obstacles							.17	1.36	.18	-.02	-.18	.86
Techasst							.19	1.27	.21	.13	.76	.45
R Square	.48			.38			.38			.39		
F Signif	.00			.00			.00			.00		

Table 6 shows that the constituent capabilities of the business and social competencies have significant positive effects on each other. Close supplier relations is tied to environmental management and environmental management is tied to close supplier relations.

Table 6. The Constituent Capabilities of the Business and Social Competencies

	Dependent Variables					
Independent	Envmgmt			Supplier		
Variables	beta	T	Sig T	beta	T	Sig T
Supplier	.31	2.11	.04			
Envmgmt				.30	2.11	.04
Totalsq	.15	.99	.33	.22	1.52	.13
R Square	.14			.17		
F Signif	.02			.03		

Finally, Table 7 shows that the constituent capability of the social competence, Envmgmt, does not significantly influence the business competence, Salessq; and the constituent capability of the business competence, Supplier, does not significantly influence either indicator of the social competence, In-house or Consed. This route from the essential capability to the social competence goes away when controls for other variables are introduced.

Table 7. The Constituent Capabilities: Cross Fertilization

	Dependent Variables								
Independent	Salessq			Inhouse			Consed		
Variables	beta	T	Sig T	beta	T	Sig T	beta	T	Sig T
Newidea	.36	1.99	.05	.40	2.35	.02	.12	.71	.48
Supplier	.02	.08	.94	-.19	-1.00	.32	.07	.37	.71
Envmgmt	-.09	-.52	.61	.57	4.11	.00	.54	3.94	.00
Totalsq	.04	.28	.78	.19	1.46	.15	.02	.15	.88
R Square		.14			.49			.38	
F Signif		.21			.01			.00	

Discussion

This study tries to systematize our understanding of competence acquisition. How far does the influence of an essential capability extend? That the variable Newidea extends as far as it did, significantly affecting the acquisition of business competence, the constituent capability of that competence, and social competence, and that it had other indirect effects, is grounds for considering this method of viewing competence acquisition promising. The route to competence acquisition appears to begin, as scholars like Brumagin (1994), Collis (1994), and Ginsberg (1994) have suggested, in the search for new ideas and in the effort to use them (see also Stewart, 1997). Learning, vision, and creativity are based on the desire to know and do what is best.

That a significant positive relationship between the constituent capability of business competence, Supplier, and the measure of business competence, sales per square foot did not materialize may be due to a number of factors. The improvement needed in supply chain management that the industry seeks may not yet be producing the impact for which it hopes. The ability to form efficient relationships that lower total system costs is a formidable undertaking. Many types of partnerships have to be refashioned and a vast array of distributors, manufacturers, and brokers are involved. Moreover, it is not just a matter of reforming these relationships. Efficient consumer response has many components. To name but a few of these elements, there is a need for mastering the use of technologies like point-of-sale information, electronic data interchange, and computer-assisted ordering, and for improved product introduction, selection, and promotion. All may be necessary if the goal of continuous replenishment is to be realized. Not all of them have been captured by the measure of close supplier relations that were used.

For instance, Phumpiu and King (1996), who had a more comprehensive definition of the practices associated with efficient consumer response (ECR), found that the stores that adopted more ECR technologies and practices were more efficient in terms of sales per square foot. However, many grocers were not doing much across the entire spectrum of activities. Trust levels in the industry remained low. Many retailers saw ECR as a power shift toward the manufacturers, and many manufacturers saw it as power shift toward the retailers (Progressive Grocer, 1996). Much more work on cooperation still was needed (Lee, 1996).

Conclusion

This paper explores the paths to competence acquisition in the retail food industry. Rooting the analysis in the resource based theory of the firm, it has been argued that an essential

capability for searching out and applying new ideas is at the foundation of competency acquisition. What makes this capability *essential* is what emanates from it. It can be a fruitful route to many kinds of competencies and to the constituent capabilities associated with these competencies. The search for new ideas, concepts, and methods appears to have many effects on a firm's business and social competencies. By having these manifold impacts, which may be hard to predict and analyze, it can help create a pattern of fully realized competencies that are casually, ambiguous, complex, and hard to copy. In this way, it can contribute to the maintenance of a distinct competitive position that resists being assailed.

With respect to business competence, a route to acquisition is proposed that goes from the essential capability to the competence and from the essential capability through constituent capabilities to the competence. With respect to a social competence, two routes to acquisition are proposed -- the same path that holds with regard to the business competence and a different or supplementary route that is special to the social competence. The social competence needs the supplementary route because of the weak incentive for acquiring a competence where the business benefit is not apparent. This secondary route starts with external technical assistance. It affects the social competence directly and through the constituent capabilities of the social competence in a manner that is parallel to the influence of the essential capability. These pathways to acquiring competence were examined in this study of the retail food industry. They help to illuminate the routes to competence acquisition generally.

The study shows the fertile character of the essential capability of searching for new ideas, concepts, and methods. It has direct effects on a business competence, a constituent capacity of this competence, and a social competence. The social competence, an environmental one, had an

additional route to its acquisition. Technical assistance affected the acquisition of this social competence and the constituent capability associated with it.

It is acknowledged that this study has a number of limitations from small sample size to difficulties in operationalizing key variables. It is meant more as an illustration of the concepts than as scientific proof. Competence acquisition is a highly idiosyncratic process that is not easily investigated from the perspective of normal science. The incremental steps taken here to look at it in a more systematic way should not replace other kinds of study. Nevertheless, this view of competence acquisition is a promising one that deserves further study.

The managerial implications of this view may be stated as follows. Managers can think in terms of end states where they want to go. These would be the realized competencies at the end of the pathways that have been sketched (for example, see Figure 1). Managers then can consider what constituent capabilities they need to get to these end states. However, there is another approach they can take. They can cultivate essential capabilities, like seeking new ideas and methods, and allow these capabilities to take them wherever the generative powers of these capabilities may go. In this way, they would be managing in a less deterministic way. However, their style of management might be more harmonious and achieve a better fit with the internal possibilities and external circumstances that they actually face.

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