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LG Electronics Inc.:

Breaking the Ice in the North American Market for Refrigerators

11/2007-5488

This case was written by Joseph Lajos, PhD Candidate (INSEAD), under the supervision of Amitava Chattopadhyay, the L'Oreal Chaired Professor of Marketing-Innovation and Creativity and Professor of Marketing at INSEAD, and Eun-Ju Park, Manager, Marketing Strategy Team, Digital Appliance Overseas Marketing, at LG Electronics. The authors thank Mr. Michael Ahn, President and CEO of North America Headquarters; Mr. Joon Jun, President of North America Brand Marketing; Mr. Teddy Whang, Executive Vice-President, Digital Appliance Overseas Marketing; and Mr. Jae-seung Kim, General Manager, Digital Appliances North America Marketing, for their support and help in the development of this case. The case is intended to be used as a basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

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It was a brisk January day in New York City and the streets hummed with the optimism of the New Year. Store windows advertised enticing New Year sales. City residents still held out hope that they would stick to their New Year's resolutions. Everyone believed that they could, and would, do better in the coming year.

Outside the city, at the LG Electronics Inc. (LGE) digital appliance research and development facility in Englewood Cliffs, New Jersey, the same hopeful feeling was in the air. At the company's New Year party a few nights before, Michael Ahn, President and Chief Executive Officer of LGE's North American headquarters, had announced an ambitious goal for the LG Digital Appliance Company: to grow sales from their 2002 level of \$230 million to \$1 billion by the end of 2007, a greater than fourfold increase in five years.

The North American Product Planning (NAPP) Team had lost no time trying to figure out how they would make Mr. Ahn's resolution a reality. Although the target seemed staggering at first, the team had at least two things working in its favour. First, recent organizational changes at LGE had increased its access to information from the marketing department. Whereas marketing information had previously arrived indirectly via individual product managers and the R&D team, LGE's new organizational structure placed the NAPP Team in a central role, giving it continuous, direct access to information from the marketing department (see Exhibit 1), and hopefully enhancing its ability to design market oriented products that satisfied consumer needs.

Second, although the LG Digital Appliance Company produced a wide range of home appliances, it was clear that its ability to meet the ambitious new sales goal would depend heavily on its performance in the North American market for refrigerators. Refrigerators were a key item in the large home appliance (white goods) market, since they were the most visible. Such visibility was crucial, particularly given the market trend toward "trophy" kitchens. The NAPP Team knew that breaking into this lucrative market could bring huge sales increases. Additionally, gaining a toe-hold in the North American refrigerator market could help LGE gain broader distribution for its other white goods.

But what product strategy should the team recommend for the refrigerator market? Some members advocated incremental innovations that could improve the performance of LGE's existing refrigerator line. Others preferred a riskier strategy. The NAPP Team had recently learned that Maytag was about to launch a new 3-door refrigerator under Sears's Kenmore brand name with a one-year distribution exclusivity period to the retailer. The risk takers believed that LGE should develop a rival 3-door model that would offer design advantages over Maytag's model, and that it would be possible to design and produce this new model within one year.

In less than a week, the team would present its recommendations to Mr. Ahn, conscious that their refrigerator designs had to support the ambitious sales goal that he had set for the firm, as well as his broader vision to make LGE one of the world's top three electronics firms by 2010. Furthermore, they were aware that as a former Executive Vice-President of the LG Digital Appliance Company, Mr. Ahn had extensive knowledge of the US refrigerator market and would instantly assess the feasibility of their proposals.

LG Electronics Inc.

Company History

LGE is part of the LG Group, a South Korean conglomerate headquartered in Seoul. The LG Group traces its origins to 1947 when In-hoe Koo founded the Lak Hui Chemical Industry (“Lucky Chemical Industrial Corporation”) to produce a cosmetic called Lak Hui Cream (“Lucky Cream”). In 1952, Lak Hui began producing plastic lids for cosmetic containers and soon diversified into other plastic products such as combs, soap cases, toothbrushes, tableware and PVC pipes. Lak Hui introduced its own brand of toothpaste in 1954, followed by a variety of soaps and detergents in subsequent years.



Goldstar's first Refrigerator (1965)

In 1958, Koo founded the Goldstar Corporation Ltd. to enter the electronics industry. Goldstar produced Korea's first radio in 1959 and began exporting it to the US and Hong Kong in 1962. The company went on to produce Korea's first electric fan, telephone, black and white TV, air conditioner, elevator, escalator, washing machine and refrigerator within the next 10 years. In 1978, Goldstar reported that its cumulative exports had exceeded \$100 million. It soon expanded into the US, where it opened a manufacturing plant in Huntsville, Alabama, in 1982, a business office in Sunnyvale, California,

in 1983, a research and development centre in Emeryville, California, in 1984, and a second research and development centre, which would also serve as the company's US headquarters, in Englewood Cliffs, New Jersey, in 1989.

Revenues from the US market steadily increased as Goldstar began manufacturing popular products such as VCRs, camcorders, stereos, microwave ovens and colour TVs. However, US consumers perceived Goldstar as a low-quality brand. In an effort to secure a stronger, more distinctive corporate identity, the Lucky Goldstar parent company that controlled both Goldstar and Lak Hui changed its name to LG in 1995, and renamed Goldstar “LG Electronics Inc.” or LGE. That year, LGE acquired Zenith, America's largest electronics manufacturer, and began selling its products under the Zenith brand name, again targeting the low price tier. With the goal of penetrating the North American market more broadly, LGE launched LG branded electronics products there in 2002 and began targeting the premium price tier.

LGE had four business units: the Mobile Communications Company, the Digital Appliance Company, the Digital Display Company, and the Digital Media Company. The Digital Appliance Company produced home appliances including air conditioners, dishwashers, microwave ovens, vacuum cleaners, washing machines and refrigerators. It operated manufacturing facilities in China, India, Korea, Mexico, Thailand, Turkey, the United Kingdom and Vietnam. In 2002, it reported sales of approximately \$2.3 billion, which represented approximately 12% of LGE's total sales.

Innovative Spirit

LGE prided itself on having maintained an innovative spirit ever since Goldstar had developed Korea's first radio in 1959. Goldstar went on to develop a long list of other "firsts" in Korea over the ensuing decades, including Korea's first silicon wafer in 1987 and its first CDMA mobile phone system in 1995. More recently, LGE had developed several "world firsts," such as the world's first Internet-enabled refrigerator in 2000, the first mobile phone that measures blood alcohol content levels in 2005, and the world's first 100 inch LCD panel in 2006, which is listed in the 2007 *Guinness Book of Records*.

In addition to its technological innovations, LGE had always maintained a commitment to innovation in design. Goldstar was the first Korean company to hire industrial designers (1958), to establish a design division (1960), and to create an independent design department (1970). In 2002, LGE established a worldwide Design Management Centre, and in 2006 it announced a Design Management Initiative, through which it sought to focus on design issues from the initial product development stage with the goal of fundamentally changing the way that people live through design. Recent examples of innovatively designed LGE products include the LG Chocolate mobile phone, the ArtCool air conditioner, and the wall-mounted projector.

LGE described its business strategy as "fast innovation, fast growth". Innovation was one of four values that underpinned the LG brand identity, which promised to provide tangible innovations to enrich the lives of its customers (see Exhibit 2). To support innovation, LGE not only spent approximately \$3.1 billion on R&D in 2005 but also implemented an innovation process (see Exhibit 3). The company operated more than 30 R&D centres around the world, including the Englewood Cliffs facility, which was responsible for developing products for the North American market.

LGE's substantial investments in R&D allowed it to maintain much faster cycle times than many of its competitors. For example, in the North American market for refrigerators, most manufacturers introduced a completely new platform only once every five to ten years, allowing manufacturers to defray development costs over a long period. In contrast, LGE planned to enter the market in 2003 with the goal of introducing a completely new platform at least once every three years.

LGE's focus on innovation had been a key factor in the global premium market strategy that it adopted with the launch of the LG brand in 2002, an achievement which had won recognition from several consumer groups and trade associations. LGE won the largest number of innovation awards at the annual Consumer Electronics Show in Las Vegas in 2004 (17 awards) and again in 2005 (16 awards).

North American Market for Refrigerators

Refrigerator Styles in 2003

The North American market for refrigerators was divided into three major categories: compact refrigerators, wine and beverage coolers, and full-size refrigerators. The latter

category was the largest of the three and was dominated by three styles: side-by-side, top-mount and bottom-mount.

Side-by-Side

Side-by-side refrigerators have two full-height doors. The right door accesses the refrigerator, the left door accesses the freezer. This style typically has the largest freezer capacity but consumer survey respondents complained that the narrowness of the freezer made it difficult to store large items such as pizzas, turkeys, and deli platters (see Exhibit 4). A common feature of premium models is an ice maker and water filtration system on the outside of the freezer door, which automatically replenishes ice cubes and provides clean, good-tasting water, without opening the door. In 2002, retail prices for most side-by-side refrigerators ranged from \$999 to \$1,699.



In a large consumer survey, the NAPP Team found that, on average, respondents were willing to pay \$300 more for a side-by-side refrigerator with an ice and water dispenser than for an identical model that did not have that feature. Furthermore, 62% of them reported that they would be willing to give up freezer space in order to have an ice and water dispenser.

Top-Mount

Top-freezer, or top-mount, refrigerators have a large lower door (to access the refrigerator) and a small upper door (to access the freezer). Although they typically have smaller freezers than side-by-side refrigerators, their wide shelves can accommodate large items. However, consumer survey respondents complained about having to bend over uncomfortably to see inside (see Exhibit 4), and that in-door ice makers and water filtration systems were typically not available. In 2002, retail prices for most top-mount refrigerators ranged from \$399 to \$599.



Bottom-Mount

Bottom-freezer, or bottom-mount, refrigerators have a small lower door and a large upper door. The lower door, which often can be pulled out like a drawer, accesses the freezer; the upper door accesses the refrigerator. They typically have smaller freezers than side-by-side refrigerators, but their wide shelves can accommodate large items. Also, one can access the refrigerator without bending over. Consumer survey respondents complained about their lack of in-door ice makers and water filtration systems (see Exhibit 3). In 2002, retail prices for most bottom-mount refrigerators ranged from \$599 to \$999.



Brand Choice

In 2002, the NAPP Team conducted a survey of consumers who were planning to buy a new refrigerator within the next six months in order to determine which characteristics were most influential when selecting a brand. They found that capacity was the most influential

characteristic (listed first by 37% of respondents), followed by type (26%), features (15%), price (8%), exterior (5%), and appearance colour (5%), (see Exhibit 5).

Market Size and Major Brands

Total demand for refrigerators in 2003 was approximately 9.9 million units, with top-mount refrigerators accounting for 5.2 million units (52.5% of the total market), side-by-side refrigerators accounting for 3.8 million units (38.4%), and bottom-mount refrigerators accounting for the remaining 0.9 million units (9.1%), (see Exhibit 6). The NAPP Team forecast that total demand for refrigerators would grow to 11.3 million units by 2007, with demand for top-mount refrigerators decreasing to 4.8 million units (42.5% of the total market), demand for side-by-side refrigerators increasing to 4.6 million units (40.7%), and demand for bottom-mount refrigerators increasing to 1.9 million units (16.8%).

The market was dominated by a handful of big brands, some of which specialized in certain styles. In 2003, Kenmore targeted the mid to high price tier with a bottom-mount refrigerator, and also sold top-mount and side-by-side models. That year, Whirlpool targeted the mid to high price tier with a side-by-side model, and the low price tier with a mid-size top-mount model. Electrolux targeted the low price tier with a top-mount model, and also introduced a low-cost side-by-side model. GE sold a variety of models in all three styles. Maytag targeted the high price tier with a large-size side-by-side model and with a bottom-mount model. Several years previously, it had been the first to offer a bottom-mount model.

Distributors

A few powerful distributors controlled the majority of the North American white goods market, including the market for refrigerators (see Exhibits 7 and 8). Sears was the largest and most powerful home appliance distributor. Other large national appliance retailers included Lowe's, Best Buy and Home Depot. These large, risk-averse distributors were generally hesitant to invest in a new, unknown appliance brand. For example, they had earlier shunned some Japanese manufacturers who had attempted to enter the US with products that they were successfully selling elsewhere in the world.

To make matters more difficult, several of the national retailers had alliances with specific manufacturers. For example, Whirlpool had an alliance with Lowe's, and also with Sears for which it manufactured Kenmore brand appliances. Similarly, GE had an alliance with Home Depot. Manufacturers typically provided their allied retailers with a distribution exclusivity period each time a new model was launched, retailer-specific marketing support, and exclusive price brands (e.g., Whirlpool Roper, GE Hotpoint) on which manufacturer margins are usually very slim. In exchange, retailers typically provided their allied manufacturers with preferential floor space, special displays for flagship models and merchandising support. Furthermore, as part of an alliance, retailers typically supported a certain level of sales and shared customer data and insights, sales and market trends, and new product road maps for their proprietary brands, thereby creating high entry barriers for newcomers.

From its long presence in the US market for small appliances, LG knew that it needed a clear strategy for gaining distribution for its refrigerators. According to the data that it had gathered, regional distributors such as P.C. Richard & Son, Fry's, hhgregg, and American TV, which struggled against the big-box retailers, were the most obvious target for gaining initial

distribution. These retailers were often willing to gamble on promising new products to pull customers into their stores. They were an attractive option for LG, since customers typically perceived these retailers as providing a better shopping experience and better after-sales support than their big-box counterparts. Their shop floor sales assistants were well trained and worked on commission, creating an effective opportunity for a push strategy, which was important for a new entrant. However, although these retailers might provide initial market access, the goal of establishing a premium LG brand could only be achieved by gaining broad national distribution, and this, in turn, could only be achieved by penetrating the big-box retailers.

LGE's analysis of the four big-box retailers revealed that, in many ways, Sears was the most attractive. It had approximately 1,900 outlets nationwide (60% franchised), of which over 500 remained open 24/7. Sears accounted for approximately 30% of the white goods business and its customers were generally less price sensitive than those of the other big-box retailers. Moreover, its shop floor sales assistants were well trained and worked on commission. Additionally, it employed more than 13,000 technicians, operated more than 14,500 service trucks, and was capable of servicing all of the home appliances that it sold. In 2003, it could service more than 2,000 different items within 48 hours throughout North America, which added tremendous value for its customers. Furthermore, by operating such a large service network, it was able to continuously monitor product quality and identify defects early on. However, Sears had a longstanding relationship with Whirlpool, and its primary focus was its own Kenmore brand, which was the dominant white goods brand in the US.

Both Lowe's and Home Depot were home centres. Lowe's had approximately 750 outlets and Home Depot had approximately 1,200. Neither retailer had sales assistants on the shop floor. The key difference between the two was that whereas Home Depot was purely price oriented and only stocked a limited line of GE and Maytag products, Lowe's offered the consumer a choice among both low and premium-priced products and carried a full range of brands. Visits to Lowe's and Home Depot outlets by the NAPP Team suggested that whereas Lowe's invested substantially in displaying its white goods, at Home Depot white goods appeared to be less of a priority.

Best Buy focused on consumer electronics and home appliances, including white goods. It was also the national leader in audiovisual products. Best Buy tended to rely heavily on promotion-oriented store advertising to generate store traffic. Shop floor sales assistants supported these efforts, although they typically seemed to be less well trained than those at Sears. Best Buy's customers were typically younger, more tech savvy, and more affluent than those of the other big-box retailers. A full 31% were under the age of 34, and 67% earned \$50,000/year or more. Many chose Best Buy for its fresh and stylish products. Importantly, Best Buy did not have an alliance with any white goods manufacturer. In addition to carrying the major brands, Best Buy also stocked relatively new entrants such as Samsung and Haier.

LGE's Previous Market Entry Attempts

Prior to 2003, LGE had twice attempted to enter the North American refrigerator market. Both attempts were unsuccessful.

First Attempt

In 1999, LGE attempted to secure distribution at Sears for Goldstar branded refrigerators that it was currently selling in Korea. Sears argued that the Goldstar refrigerators, although popular in Korea, would not suit North American consumers who demand exceptionally high levels of fit, feel and finish. But LGE was persistent and finally convinced Sears's refrigerator purchasing manager to look at a sample. LGE invested \$5.2 million developing a top-mount refrigerator (top-mount refrigerators accounted for over 50% of refrigerators sold at the time). The sample was developed in Korea without any guidance from Sears, and had four major weaknesses. First, it was poorly designed: it was too tall, its doors opened from the left (US consumers were used to doors that opened from the right), and its doors were not reversible, such that it could not be adapted to fit all kitchens. Second, it lacked features such as an ice and water dispenser that were popular in the North American market. Third, its internal parts could not be easily accessed, making it difficult to service. Fourth, it was a top-mount style, a category in which excessive competition was squeezing margins. Sears refused to carry the refrigerator.

Second Attempt

When LGE attempted to enter the North American refrigerator market a second time in 2001, three things were working in its favour. First, during the previous year, LGE had gained distribution at Sears for many of its small home appliances (e.g., air conditioners, dehumidifiers, gas stoves, and vacuum cleaners) and had thus forged a successful business relationship with the retailer. Indeed LGE granted Sears exclusive distribution rights for all of its new small appliances.

Second, LGE began developing products for the North American market at a facility in Mexico, rather than in Korea. This made it much easier to gather information on the North American market, and made it possible to get a better feel for the expectations and preferences of North American consumers.

Third, a small but important management change occurred at Sears: the company's refrigerator purchasing manager was replaced, giving LGE the opportunity to approach Sears afresh. LGE pledged to abide by dramatically faster cycle times than its established competitors and hoped that by doing so it would make stocking its refrigerators a risk worth taking.

Thus, in 2001 Sears agreed to give LGE a second chance. In preparation for the meeting, LGE conducted an extensive marketing survey in New York, which included interviews with experts from a design company. The Sears purchasing manager was impressed with the survey and with LGE's proposed innovations – a super fresh crisper with controls and an indoor compartment for rapid cooling of beverages – and finally agreed to stock its refrigerators for a one-year trial period in lieu of a standard three-year contract.

LGE subsequently supplied a top-mount refrigerator to Sears. To reduce its risk exposure, Sears did not run any advertisements or promotions when it launched the new product. It proved to be a wise decision, as the refrigerator had several quality defects and suffered from delivery delays. Sears terminated the contract at the end of the year.

Looking to the Future

Despite two failures, LGE was determined to try one more time. The market was extremely lucrative and successfully entering it would be a key step toward meeting Mr. Ahn's ambitious five-year digital appliance sales goal.

As LGE was considering its options for its third attempt at entering the North American refrigerator market, General Electric (GE) approached LGE with a proposition to invest in bottom-mount refrigerators. This offer stemmed from changes within GE that had led to a reduction in investment in its white goods division. Moreover, at the time, Maytag, the only manufacturer of bottom-mount refrigerators, had limited production capacity, and GE was not happy with Maytag's attitude and its failure to invest in new features for its bottom-mount model.

The prospect of a partnership with GE offered several potential benefits to LGE: GE had extensive knowledge American consumer preferences and the levels of fit, feel and finish that they desired. GE also had deep knowledge of both the materials and manufacturing processes needed to ensure a high and consistent quality level, which was essential to succeed in the in North American market.

In preparation for its third market entry attempt, the NAPP Team wanted to be absolutely certain that it understood the dynamics of the market. It needed to develop a clearer picture of North American consumers' changing tastes and preferences, with the goal of discovering latent needs that could be satisfied by new features or even a radically new design. The team spared no expense in acquiring this understanding. Thus, it assembled a group of expert advisers, including home builders, kitchen designers, food specialists, sociologists, economists and qualitative research specialists, and embarked on a massive consumer research project. The project included studies of several North American trends and interviews with and ethnographic research on North American consumers in their kitchens.

North American Trends

The NAPP Team's research included studies of demographic trends, social and consumer trends, home trends and food trends.

Demographic Trends

In its study of demographic trends, the NAPP Team examined survey data from the US census and other sources, and identified trends in age and family composition.

Aging Society

The census data revealed that the average age of consumers in North America was increasing rapidly, largely due to the aging of the baby boomers. These numbered 76 million, and accounted for approximately 39% of Americans over the age of 18, and 29% of the total US population. (Canada showed a similar trend). Census data showed that 12% of the US population was over the age of 65 in 2000, compared with 10% in 1990 and 8.5% in 1980. It suggested that 13% of the US population would be over 65 by 2010 (see Exhibit 9). These

aging consumers, the team concluded, would increasingly desire products that were easy to use and required little bending and stretching.

Changing Family Composition

Data from other sources revealed a related demographic trend in North America: changes in family composition. Specifically, whereas empty nesters (a couple whose children have grown up and left home) accounted for 15% and single persons accounted for 21% of households in 1995, by 2005 empty nesters accounted for 21% of households and single persons accounted for just 17% (see Exhibit 9). The NAPP Team concluded that the growing population of empty nesters would have more leisure time available for entertaining guests, and would thus be increasingly likely to purchase premium appliances that reflected their social status when remodeling their current homes or building a second home.

Social and Consumer Trends

In parallel, the NAPP Team commissioned a customized report on US social and consumer trends, based on four in-depth interviews with advertising executives and journalists in New Jersey and Los Angeles, each of whom had more than seven years of experience. The study identified four major trends.

Bringing Outside Experiences In

Consumers were bringing experiences that were once enjoyed in the public domain into the private domain of their homes. Whereas in the past they would go out to drink a beer, have a cappuccino or watch a movie, they were now more likely to engage in these activities at home, a trend that had intensified since the 9/11 terrorist attacks. Enjoying the security of their own homes, consumers were predicted to increase their investment in high-quality appliances with features previously reserved for professional equipment.

The Home as a Sanctuary

Consumers were modifying their homes to accommodate new types of products, driven by a growing sentiment that investment in one's home was the safest long-term investment. The study reported that North American consumers spent nearly \$158 billion remodeling their homes in 2001 and forecast that that they would spend \$177 billion in 2003. Interviews with several homebuilders indicated that most remodeling jobs focused on kitchens and bathrooms. It found that consumers with annual incomes between \$75,000 and \$150,000 typically budgeted between \$20,000 and \$43,000 when remodeling their kitchens, and planned to spend approximately 8% of this budget (\$1,600 to \$3,500) on appliances. Strikingly, the interviews also suggested that consumers with annual incomes above \$200,000 typically budgeted between \$150,000 and \$250,000 for remodeling their kitchens.

Additional investments included the expansion of kitchens, master bedrooms, living rooms and laundry rooms, the creation of multi-functional rooms and transitional spaces, and increased demand for fixtures and appliances with a premium look.

Interest in East Asian Styles

As the US had become more multicultural, East Asian foods, entertainment, alternative medicines, and religions had gained in popularity. Values such as harmony, balance and simplicity had permeated consumer lifestyles and influenced product design, particularly a growing belief that the biggest or most expensive is not always the best, and a preference for simple, sleekly-designed products with smooth lines.

Influence of Technology

Consumers were adopting an increasing number of innovative and highly technical products in order to simplify everyday tasks at home and at work. Technology was becoming a key part of their lifestyle. They preferred consolidated products that performed many functions, thereby allowing the user to multi-task – smarter products that could do more and allow consumers to use their time more efficiently.

Home Trends

In its study of home trends, the NAPP Team examined data from the US National Association of Home Builders (NAHB), and identified trends in house size and floor plans.

House Size

North American homes were getting bigger. In the 1970s, home buyers preferred small houses on large lots of land; now, large houses on relatively smaller lots of land were more popular.

According to the NAHB data, in the 1970s new US homes comprised an average area of 1,660 sq. ft. Of them, 67% had one storey, 23% had two storeys, and 10% were built in a split-level style.

In contrast, in 2003, new US homes comprised an average area of 2,330 sq. ft. Of them, 46% had one storey, 53% had two storeys, and 1% percent were built in a split level style.

Recent trends (bringing outside experiences in and using the home as a sanctuary) had contributed to the increase in home sizes. Consumers desired larger homes to accommodate their activities and ever larger numbers of guests. As one focus group participant noted, “The home is now the main playground.”

Floor Plans

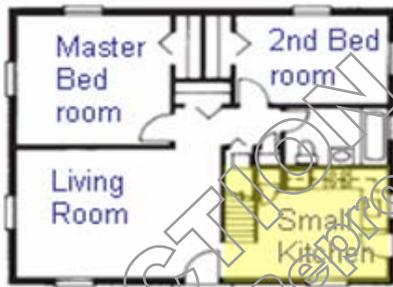
The changing ways in which North American consumers used their homes was reflected by the floor plans of new homes. The ground floor of a typical home built in the 1970s had two bedrooms, a living room and a small kitchen that was isolated from the other rooms. In



Typical 1970s Home



Typical Home Today



Typical 1970s Floor Plan

contrast, its 2003 counterpart contained a living room, a dining room and a large kitchen opening onto an adjacent family room, with the bedrooms relegated to the upper floor.

The expansion of the kitchen and its visual opening into the family and dining rooms reflected a fundamental change in the way consumers used their kitchens. The small, isolated kitchens of the 1970s were meant to be a place in which one person would cook;

today's large, open kitchens served as a gathering place for families and guests. The combination of a visually connected kitchen, family room, and dining room is often referred to as a "great room." In a 2003 consumer survey conducted by the NAHB, 78% of respondents indicated preference for a visually or completely open kitchen, compared to 54% in 1980. Furthermore, 71% of respondents in the 2003 survey indicated a preference for a kitchen island or peninsula with bar seating for simultaneously cooking and entertaining guests (see Exhibits 10 and 11).



Typical Floor Plan Today

Food Trends

Interviews with several food specialists revealed that US consumers' food choices were changing. Having previously based their food choices primarily on convenience, they were now also taking freshness and quality into consideration, which in turn had affected the foods they bought, their shopping habits and food preparation techniques.

During the 1990s, consumers favoured traditional American foods (e.g., meatloaf, lasagna, spaghetti, chicken and hamburgers) and highly-processed convenience foods (e.g., frozen meats, canned fruits and vegetables, dried mix soups and sauces, and microwaveable dinners). Given their long shelf lives, they could be purchased in bulk once or twice a month at one-stop-shop grocers. Frying, baking, and microwaving were the most common food preparation techniques.



Kitchen Island with Bar Seating

However, since 2000 growing concerns about obesity had prompted many consumers to turn away from a diet based exclusively on traditional American foods and towards healthier, international and fusion cuisine, especially Asian and Mexican. Similarly, many consumers had replaced highly-processed convenience foods with fresher, healthier alternatives, favouring fresh meats over frozen meats, fresh (and especially organic) fruits and vegetables over canned fruits and vegetables, and soups and sauces prepared from scratch over those made from a dried mix. Since fresh foods had shorter shelf lives, shopping habits had changed. Bulk buying at one-stop-shop grocers had given way to purchasing small quantities of fresh foods at specialty stores such as the Whole Foods Market and Trader Joe's, a shopping style dubbed "grocery hopping". Furthermore, frying, baking and microwaving had

largely been replaced by stir-frying, broiling and warming in small toaster ovens. The consumption of healthy, natural drinks such as water and tea had increased dramatically.

North American Consumers



In order to get a better feel for North American consumer needs, the NAPP Team conducted in-home interviews with 18 families in San Francisco and Boston. They also employed ethnographic techniques to study how these consumers used their kitchens. For example, the team studied how these families prepared and cooked meals, set the table and ate meals, disposed of leftovers, washed the dishes in a dishwasher, and put the dishes away. They videotaped each family's usage of its refrigerator and coded the number of times that family members accessed each section of the refrigerator (e.g., freezer, snack bin, crisper). Based on the

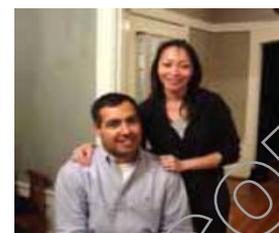
interviews and ethnographic research, the team identified consumer segments based on life stage, cooking habits and desired benefits.

Consumer Segments by Life Stage

The team identified four consumer segments differentiated by life stage: (1) cohabitation, (2) family with children, (3) family with teenagers, and (4) empty nesters.

Life Stage 1: Cohabitation

Couples in their 20s who were dating or recently married. Characterized as work-oriented, they were typically weight conscious and, due to work commitments, devoted little time to cooking. They ate out frequently and when at home ate foods that required little time to prepare. They consumed frozen foods regularly.



Life Stage 2: Family with Children

Couples in their 20s or 30s who had young children. Characterized as childcare-oriented, they were typically very conscious of their children's health and focused on spending quality time with them. Consumers in this segment often prepared separate meals for themselves and for their children in order to accommodate the latter's special dietary needs. Although childcare left them with little free time, they devoted a moderate amount of time to cooking and placed great value on food quality.



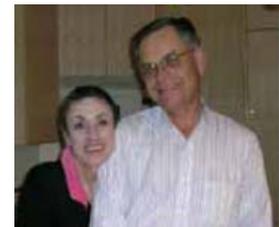
Life Stage 3: Family with Teenagers

Couples in their 40s or 50s who have teenage children. Characterized as child-dominated, they were typically busy with their children’s school and extra-curricular activities, and thus, although they typically ate at home, devoted little time to cooking. They consumed frozen foods regularly.



Life Stage 4: Empty Nesters

Couples in their 50s and beyond whose children had left home. Carefree and enjoying life, they were typically health and wellness conscious, and focused on spending quality time with each other. They typically had ample free time and considered cooking to be a fun activity. Thus, they often prepared special meals and devoted a large amount of time to cooking.



Consumer Segments by Cooking Habits

The research revealed that North American consumers could also be segmented into two groups – time savers and gourmards – based on their cooking habits (see Exhibit 12).

Time Savers

These consumers devoted little time to cooking and desired products to help them prepare foods faster. Best described as workhorse families with busy lives, consumers in the “cohabitation” and “family with teenagers” life stage segments were typically time savers.

Contrary to the general consumer trend toward “grocery hopping,” many consumers in the time saver segment still preferred to purchase convenience foods in bulk at one-stop-shop stores. Gallon drinks, large cases of canned drinks, and family size condiment jars typically took up most of the shelf space in their refrigerators, and their freezers were typically filled with stacks of “heat and serve” frozen foods (see Exhibit 13). Time savers also consumed large quantities of ice.



Videos of refrigerator usage in time saver households showed that time savers opened their refrigerators to access refrigerated items 80% of the time and frozen items 20% of the time. Beverages accounted for the largest percentage (40%), followed by foods in the snack bin (23%), coffee (23%), foods in the crisper (4%), sauces (3%), and all others for the remaining 7%. Among frozen items, ice accounted for the majority of access (77%), followed by frozen foods for the remaining 23% (see Exhibit 14). Many time savers reported having a second, old or used, refrigerator in their garage or basement, which they used frequently, primarily for storing extra beverages and frozen foods.

Gourmands

These consumers devoted moderate or large amounts of time to cooking, desired high-quality foods with little regard for preparation time, and tended to regard quality and performance as top priorities. Families with children and empty nesters were typically gourmands. They tended to grocery shop frequently, buying small quantities of fresh foods at specialty shops. Beverages in small cartons, bottles of wine, fresh produce and individually wrapped fish, meats and cheeses typically took up most of the shelf space in their refrigerators. Their freezers were typically filled with small, wrapped items such as leftovers and homemade sauces (see Exhibit 13). Unlike time savers, gourmands typically consumed little ice.

Videos showed that they opened their refrigerators to access refrigerated items 93% of the time and frozen items 7% of the time. Beverages accounted for the largest percentage of access (27%), followed by foods in the snack bin (23%), coffee (13%), foods in the crisper (8%), sauces (6%), and all others with the remaining 23%. Among frozen items, frozen foods accounted for the majority of access (87%), with ice accounting for the remaining 13% (see Exhibit 14). Few gourmands reported having a second refrigerator; those who did said they used it infrequently, mostly to store alcoholic beverages and homemade soups and sauces.

Benefit Segments

The NAPP Team also commissioned a benefit segmentation study, based on a national sample of consumers, which revealed four segments: the rational shopper, the style seeker, the bargain hunter and the premium seeker.

Rational Shoppers

Approximately half of those surveyed were classified as rational shoppers, a segment further divided into two sub-segments: value seekers and smart shoppers. The larger of the two, value seekers, included young, low income males. Value seekers based their refrigerator purchase decisions on extensive research and were interested in functionality. Efficiency in cooling, reliability, and durability were the key purchase drivers among value seekers. Smart shoppers were older (45-55 years of age) and interested in style, preferring a clean, simple look with a seamless exterior. Smart shoppers preferred 30-33 inch size refrigerators with basic features, and were concerned about usability. When purchasing a refrigerator, smart shoppers spent time searching for a bargain.

Style Seekers

Approximately one in five of those surveyed were classified as style seekers. Predominantly males aged 20-34, style seekers placed great emphasis on design, preferring the newest designs. They valued a wide format, looked for convenience, and preferred models with an external ice and water dispenser. Style seekers were brand loyal. When purchasing a refrigerator, they tended to trust the advice of shop floor sales assistants.

Bargain Hunters

This segment was approximately the same size as the style seeker segment. Bargain hunters were primarily older women (56+ years). They were highly price sensitive, had no preference for a particular brand, and wanted a simple and basic model at the lowest price possible.

Premium Seekers

Approximately one in seven of those surveyed were classified as premium seekers, a segment with two sub-segments: trend leaders and frontiers. Trend leaders, by far the larger of the two, were kitchen-centric consumers who were early adopters of innovative kitchen appliances, since they considered enjoying food and entertaining people to be important aspects of their lives. They valued design, were concerned about the interior organization of refrigerator styles, and strongly preferred multi-door units. The frontier sub-segment consisted of high income consumers, aged 25-39 years of age, highly status conscious and willing to pay for the specific brand that they had decided on before arriving at the store. They sought built-in features that would be talking points in their kitchens.

An Innovative New Design

In 2002, the NAPP Team learned that Maytag was developing a new style of refrigerator, which it planned to bring to market in 2003. Although the new style would resemble a typical bottom-mount refrigerator, the upper, refrigerated section would be accessible by two side-by-side, or “French,” doors separated by a sealing bar. Aside from its innovative three-door design, Maytag’s new refrigerator would possess few premium features. Given Maytag’s one-year exclusivity agreement for the refrigerator with Sears, which would sell it under the Kenmore brand name, the new refrigerator would not appear in other stores under the Maytag brand name until at least 2004.

The primary benefit of Maytag’s new three-door refrigerator was that it would combine the easy-to-open doors typical of side-by-side refrigerators with the convenient, eye-level refrigerator access typical of bottom-mount refrigerators. However, the NAPP Team thought that two aspects of Maytag’s design could be dramatically improved. First, the presence of a sealing bar between the side-by-side doors meant that Maytag’s refrigerator would have the same defect of traditional side-by-side refrigerators: an interior space that is too narrow to accommodate large items, such as pizza, turkey and lasagna. Second, like most bottom-mount refrigerators on the market, it lacked an ice and water dispenser.

The NAPP Team believed that there was great market potential for a three-door refrigerator that remedied these two design weaknesses. Furthermore, given Maytag’s one-year exclusivity agreement with Sears, any three-door model sold at other stores would not face direct competition from a Maytag branded three-door model until 2004. However, although the team felt reasonably sure that it could develop a design that would remedy the first weakness (the sealing bar between the side-by-side doors), overcoming the second (the lack of an in-door ice and water dispenser) would require significant technological advances. Placing an ice dispenser on the outside of a refrigerator door, rather than a freezer door, while

maintaining high quality and reliability standards would be very difficult to accomplish, especially within a short time frame.

Due to these concerns, some members of the NAPP Team advocated a less risky course of action. They argued that the team should introduce one or more new models based on traditional refrigerator styles, but featuring a combination of less radical innovations. For example, LGE had recently developed an intelligent refrigerator control center that could use seven digital sensors to monitor the temperature and humidity within individual fresh food and freezer compartments (e.g., crisper, snack bin) and could automatically adjust the conditions within these compartments to optimal levels or user settings. The intelligent control center could also allow users to digitally adjust ice and water dispenser settings and could feature a water filter status light that would indicate when the filter needs to be changed. The system could be controlled by an in-door digital LED display or, alternatively, by a more technologically advanced touch-sensitive back-lit LCD screen. Additional innovations that could be integrated into the new refrigerator included an in-door rapid beverage chiller built on LGE's patented AirCool technology, an ice and water dispenser with an 11.8 inch clearance that would be capable of filling pitchers and sports bottles, auto-close doors built on a hydraulic hinge system, and energy efficient power LED lighting that would give the inside of the refrigerator a distinctive sleek look, especially if combined with stainless steel trim. More risk-averse members of the NAPP Team argued that consumers would perceive a traditional refrigerator style with the right combination of such new features as being a radical innovation, even though developing it would be relatively straightforward compared to developing an entirely new refrigerator style.

The Decision

At the LG Digital Appliance Company's New Year's dinner a few nights before, Mr. Ahn, the President and Chief Executive Officer of LGE's North American Headquarters had set the radical goal of increasing digital appliance sales by over fourfold in the coming five years. To accomplish this goal, the team knew that it would need to finally gain entry to the lucrative North American refrigerator market. However, the company's two previous attempts at entering the market had been both costly and ultimately unsuccessful. The market was dominated by well-known brands, all of which were allied with the powerful, risk-averse distributors who were the gatekeepers of the North American white goods market.

Since its last market entry attempt, the NAPP Team had invested in a massive consumer research project through which it had learned a great deal about the North American market. Moreover, its association with GE had given it a better understanding of the materials and manufacturing processes that could be used to consistently produce machines with the fit, feel and finish that North American consumers desired.

Nevertheless, the best strategy for entering this market remained unclear. Should the team invest in developing an innovative, new three-door refrigerator that improved on a similar design developed by Maytag that would only be available under the Kenmore brand during the coming year? Would North American consumers be receptive to the new design? Should the NAPP Team risk introducing a radically new product when the stakes were so high? Or should it instead enter the market with one or more of its traditional styles, featuring a combination of new features that together might be perceived as a radical innovation?

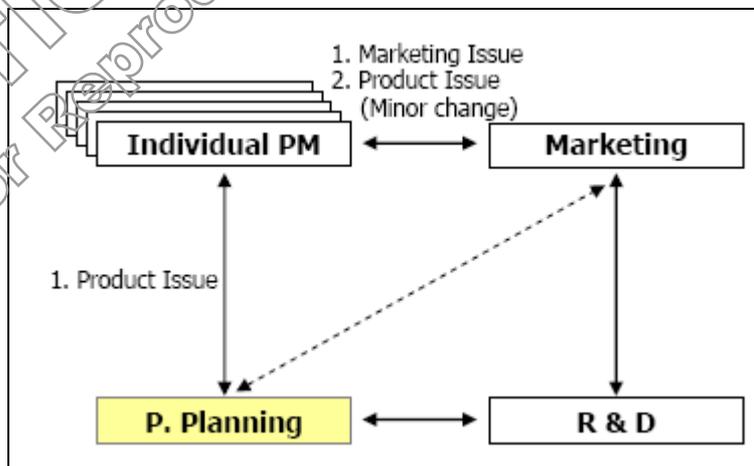
Furthermore, if the NAPP Team decided to introduce one or more traditional styles, should it invest in R&D for the three-door model with the goal of introducing it later?

In essence, the main question to be resolved was: What should LGE's North American refrigerator line-up look like? Once that had been determined there were additional challenges to be addressed: How should LGE seek to gain distribution for its new refrigerator(s) in the North American market? What should its marketing strategy entail? Before the team could present its recommendations to Mr. Ahn, it had to come up with some answers to these questions.

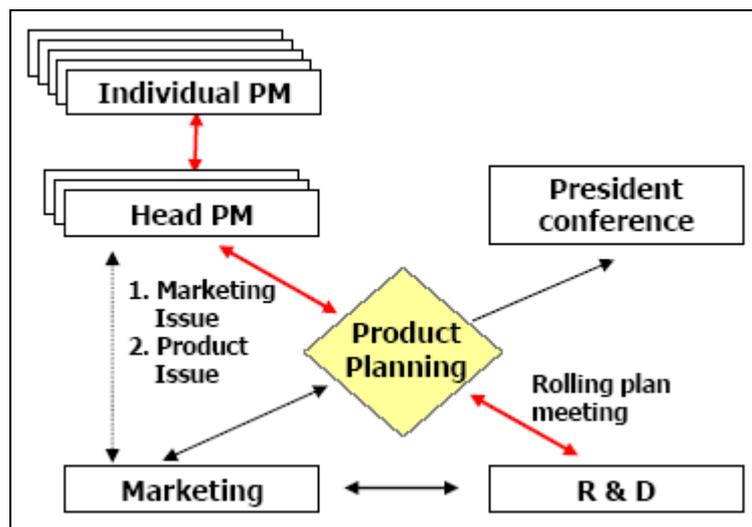
Exhibit 1

Old and New Relationships between Product Planning and Marketing

Old Relationship



New Relationship

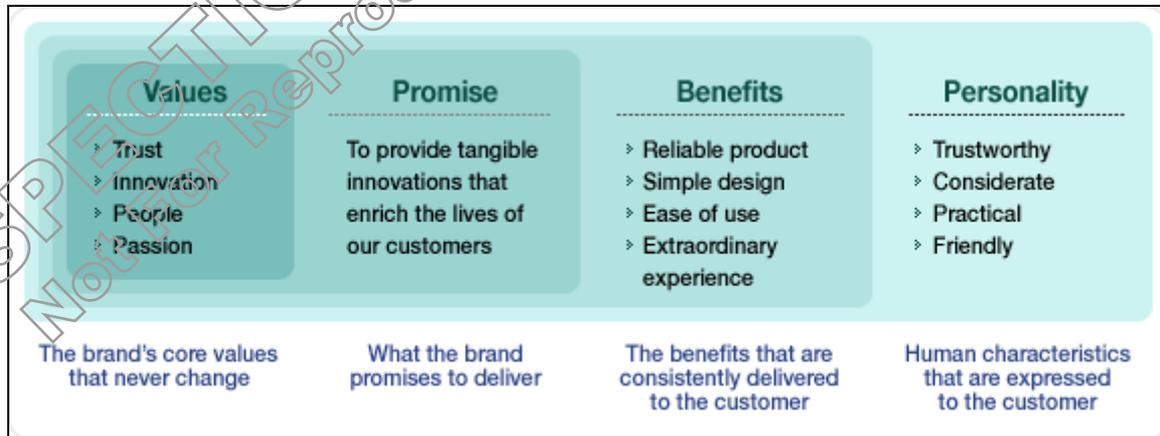


PM = Product Manager at LGE's overseas subsidiary, responsible for the product road map; Head PM = Head of a product group (e.g., refrigerators), usually a director; P. Planning = Product Planning. Under the old organizational structure, the Product Planning team received marketing information only indirectly through individual overseas subsidiary Product Managers and the R&D team. Under the new organizational structure, the Product Planning team received information directly from the Marketing team, and also had regular meetings with LGE's top level executives.

Source: LG Electronics Inc.

Exhibit 2
LGE Brand Overview, Values, and Promise

LGE Brand Overview



LGE Values

<p>Trust</p> <p>We are honest and responsible. We always keep the promises we make to our customers in our bid to become the world's most trusted brand.</p>	<p>Innovation</p> <p>We provide the most innovative products and services. Our innovations are made not for technology's sake, but for our customers' benefit. From the most basic features to the most sophisticated technology, our products are designed to give our customers substantial value. (Technology for customers, not for engineers).</p>
<p>People</p> <p>Respecting and caring for our customers is the driving force behind our philosophy in human-centric product development. Respecting and caring for our employees make this a reality.</p>	<p>Passion</p> <p>We are very passionate about providing products and services that satisfy the unmet needs of customers, as well as those potential needs they have yet to recognize.</p>

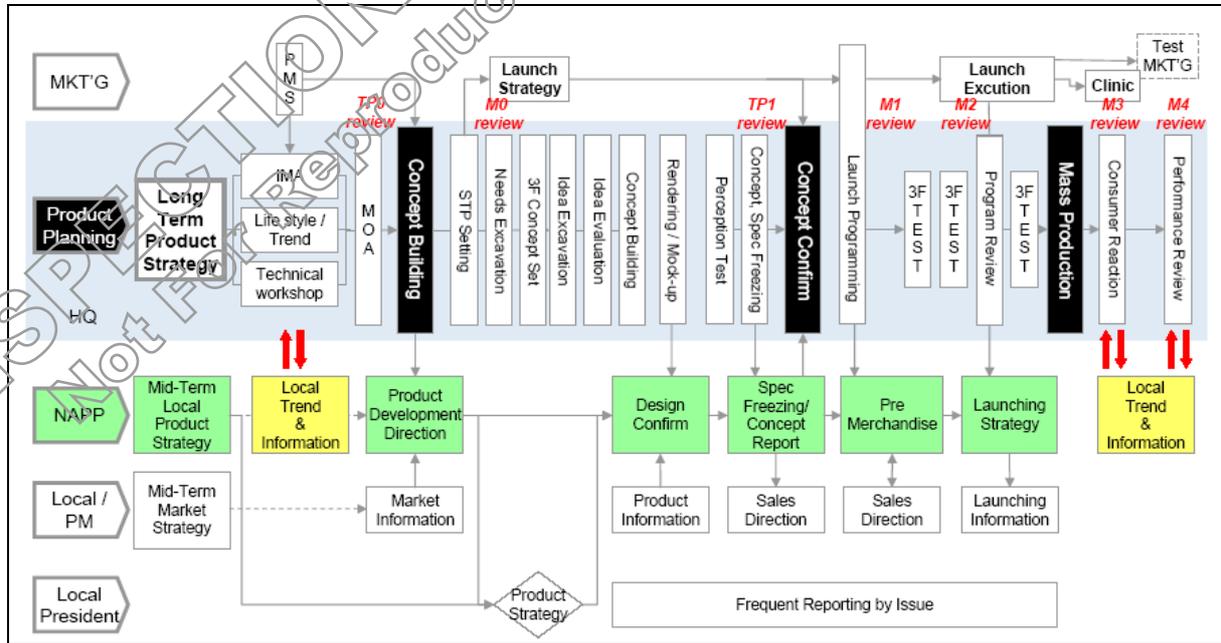
LGE Promise

"LG provides tangible innovations that enrich the lives of customers."

With our expertise in all areas of electronics, LG promises to deliver tangible benefits to our customers. Tangible benefits include our relentless attention to all aspects of our products, from the most basic features to the most sophisticated technology implemented to improve people's lives. We passionately dedicate all our resources in providing timely and consistent innovations to keep the trust we have earned from our customers and to continue giving them full satisfaction.

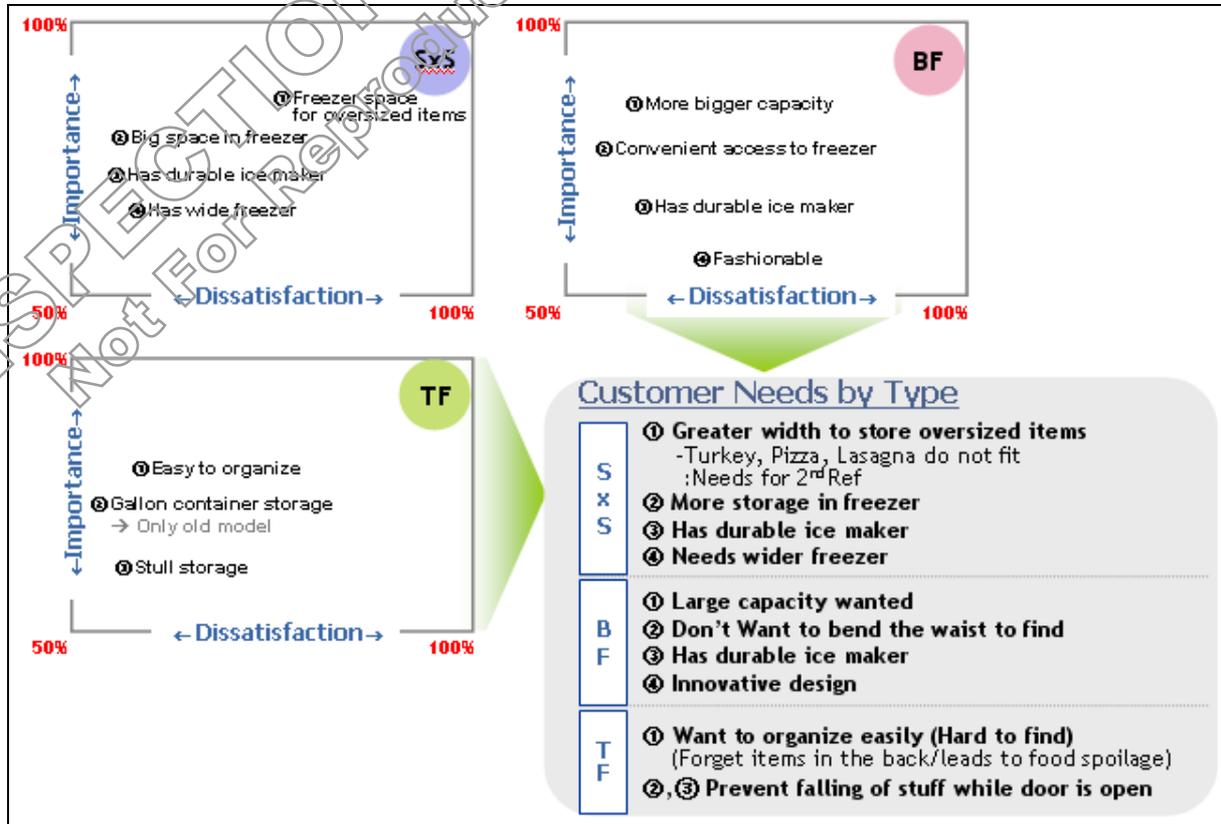
Source: LG Electronics Inc.

Exhibit 3
New Product Development Process



Source: LG Electronics Inc.

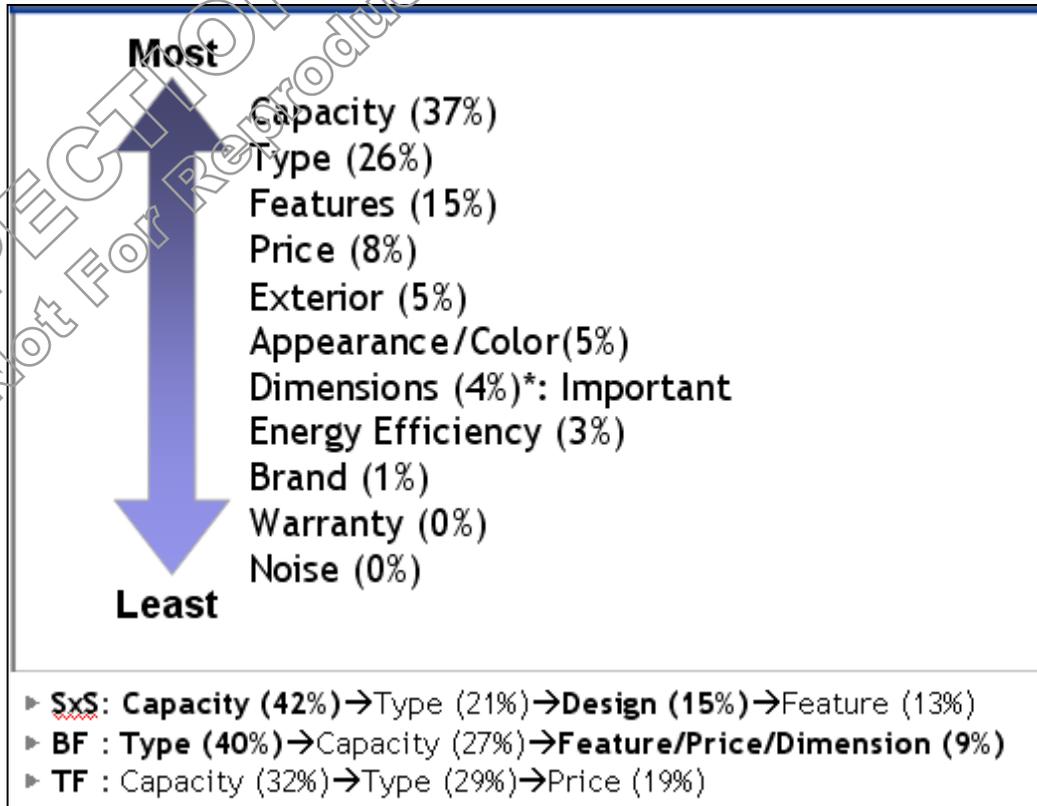
Exhibit 4
Consumer Dissatisfactions by Refrigerator Type



Source: LG Electronics Inc.

Exhibit 5

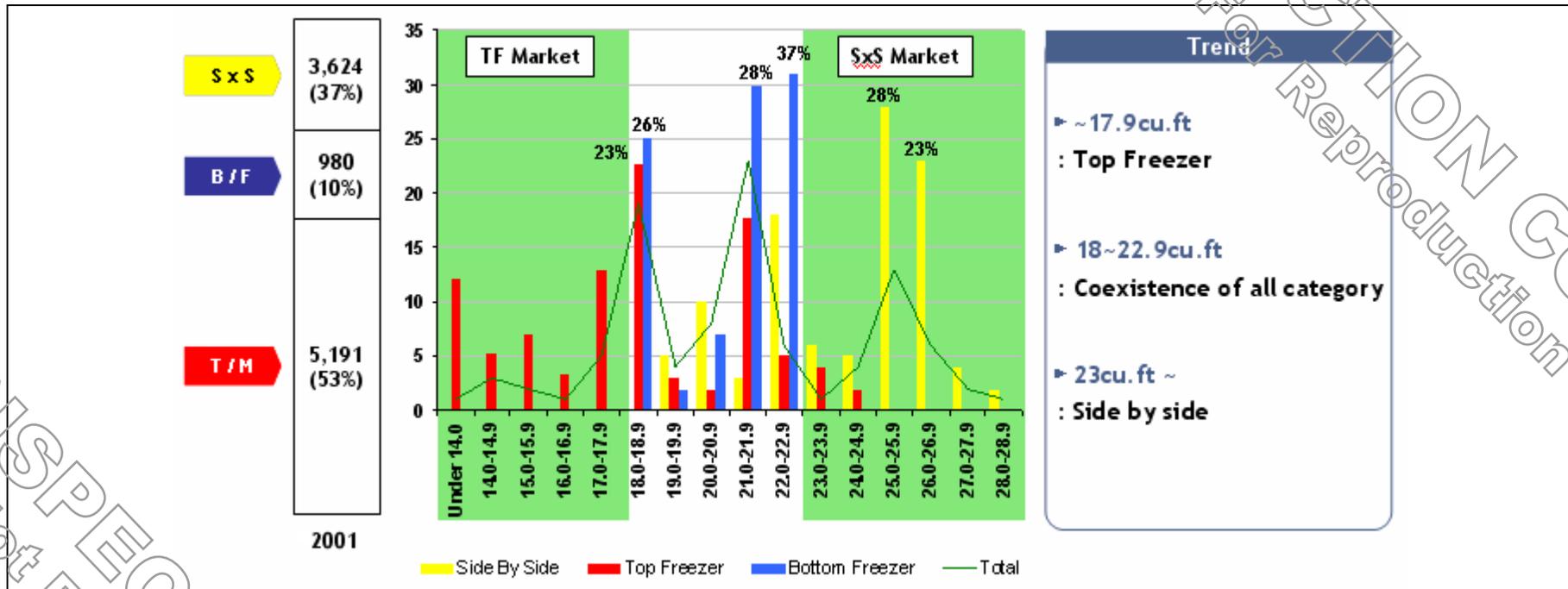
Most Influential Characteristics When Choosing a Refrigerator Brand



Percentages of survey respondents who listed characteristics as being most influential when choosing a refrigerator brand (e.g., 37% listed capacity as being most influential). Percentages do not add up to 100 because some respondents listed two characteristics as being most influential.

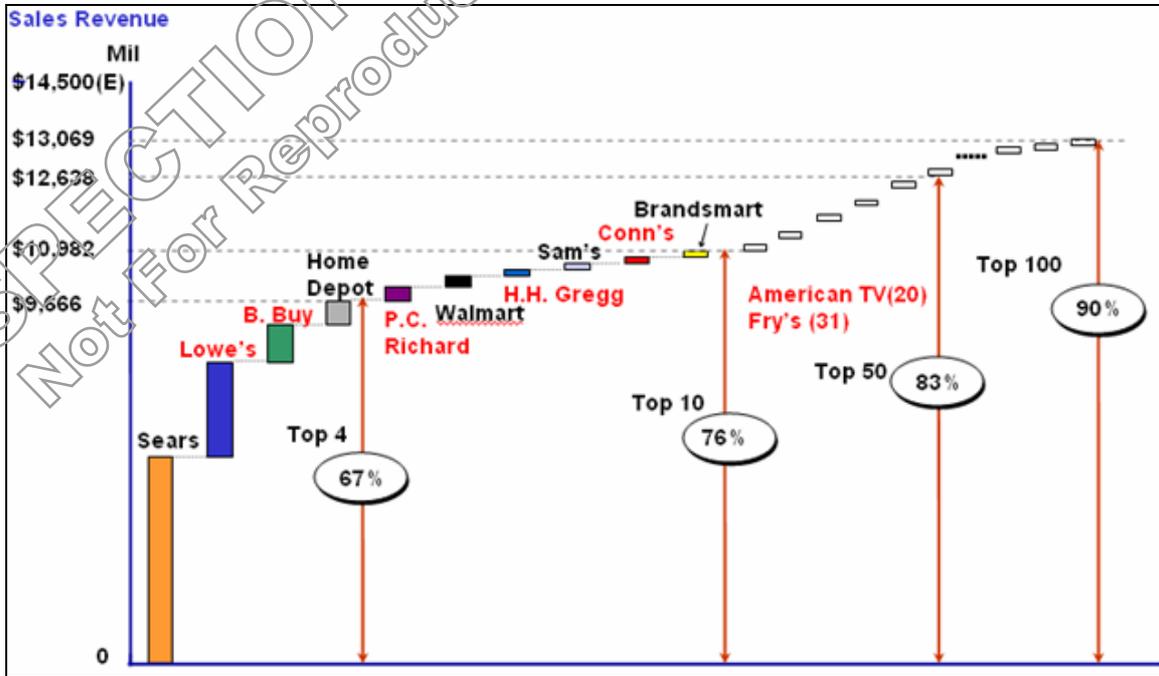
Source: LG Electronics Inc.

Exhibit 6
North American Volume Demand for Refrigerators by Capacity and Model



Source: LG Electronics Inc.

Exhibit 7
Major North American Home Appliance Distributors



Sales Revenue = revenue from sales of new refrigerators in North America in 2001. Note that the four largest distributors (Sears, Lowe's, Best Buy and Home Depot) collectively accounted for approximately \$9.7 billion, or 67%, of total sales. The next six largest distributors accounted for an additional \$1.3 billion, or 9%, of total sales.

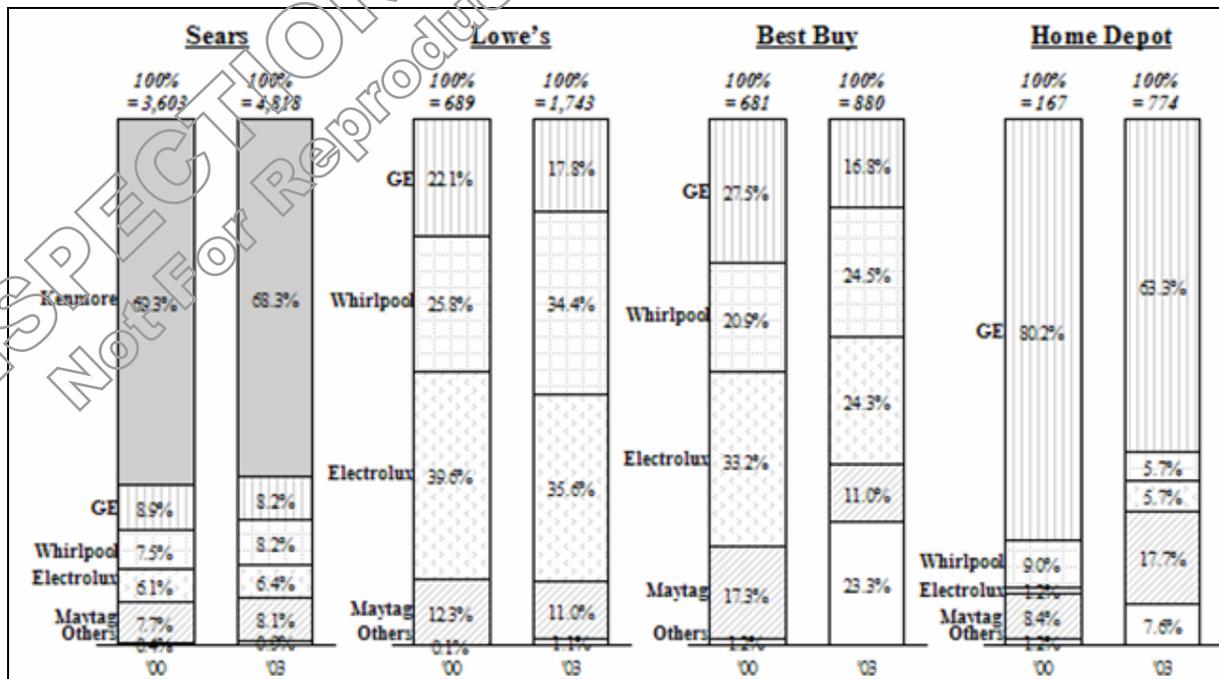
Channel	Example	Target Consumer	Growth (2001~2005)	No. of Store (2001)	Competition	Product Range
National Big-Box Retailers	Sears	▪ Mid to high	↗	872	Strong	5
	Best Buy	▪ Mid to Mid-high	↕	481	Strong	5
	Home Improvement (Home Depot, Lowe's)	▪ Low to mid ▪ Price-conscious	↕	H/D:1,201 Lowe's:744	Strong	3
	Mass Merchant/Warehouse Club	▪ Low to mid ▪ Practical, ▪ Price-conscious	↗	W/Mart:1,066	Moderate	3
Buying Group (TV/App. Stores)	Regional Chain PC Richard, HH Gregg, Conn's, Fry's, etc.	▪ Mid to high	↗	PC:44 HH:42 Conns:37 Fry's:20	Moderate	4
	Local Specialty Local Specialty	▪ Mid to high	↗		Moderate	3

Source: Laundry List, Merrill Lynch Report, 2002; industry retailer interviews; A.T. Kearney Analysis

1 Broad 1 Narrow

Source: LG Electronics Inc.

Exhibit 8
Refrigerator Brand Sales Volumes by Retailer



Source: LG Electronics Inc.

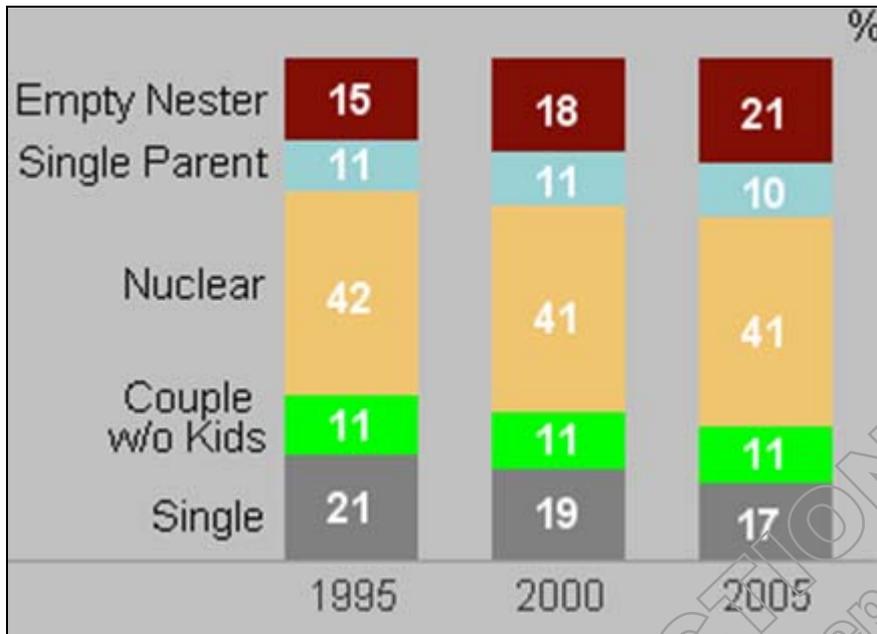
Exhibit 9
North American Demographic Trends

Ageing Society



Source: US Census.

Changing Family Composition



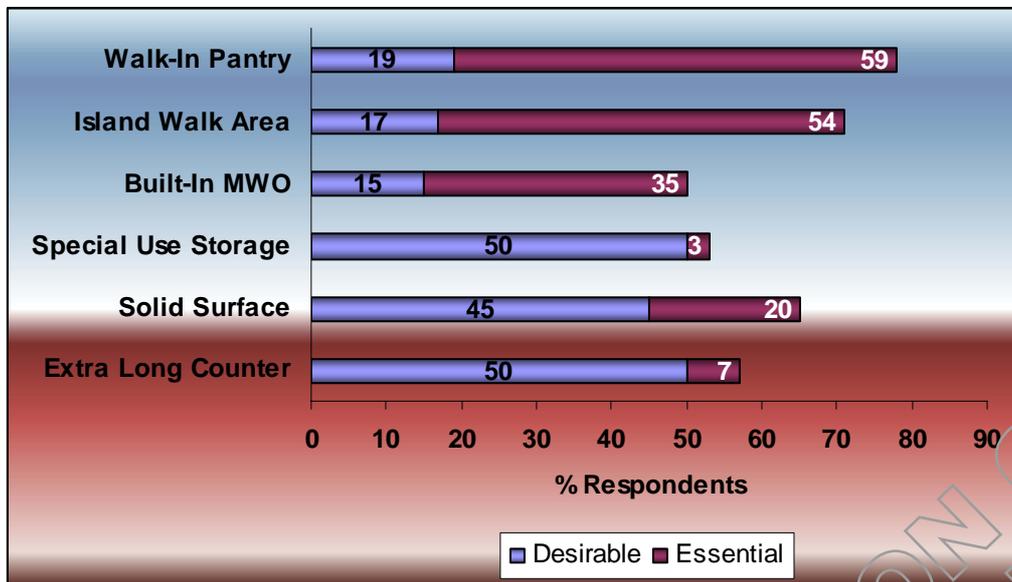
Source: DATAMONITOR.

Exhibit 10
Preferred Kitchen and Family Room Arrangement

	1980	1996	2003
Visually Open w/Half Wall	45%	47%	37%
Completely Open	9%	31%	33%
Completely Separated	21%	10%	16%
Side by Side w/Wall	24%	8%	7%
Oversize Kitchen & No Family Room	N/A	N/A	8%

Source: LG Electronics Inc.

Exhibit 11
Desirable and Essential Kitchen Features



Source: LG Electronics Inc.

Exhibit 12

Characteristics of the Time Saver and Gourmand Consumer Segments

	Time Saver	Gourmand
	<i>‘Workhorse’ families whose lives are busy and always on a fast track</i>	<i>Households whose top interests are quality and the best performance</i>
❖ Life Stage	Cohab / Family No Kids Family with teenagers	Family with infants ~ kids, Empty Nester
❖ Income/Year	\$ 75,000 ~ \$ 120,000	> \$ 120,000
❖ Cuisine	Traditional American	Ethnic-Influenced, International
❖ Ingredients	Few, Can & Boxed food	Many, Fresh & Refrigerated food
❖ Kitchenware	Commodity line range, 1-2 non-stick pots/pan	Top-of-the line range, cookware and utensils
❖ Appl. Brand	Premium~ Super Premium	Super Premium

Source: LG Electronics Inc.

Exhibit 13

Typical Contents of Time Savers and Gourmands' Refrigerators and Freezers

Time Savers



Gourmands

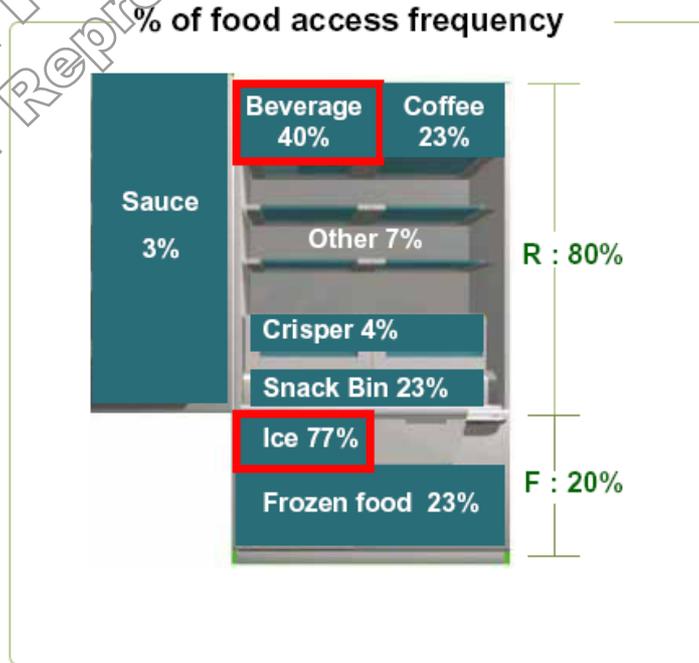


Source: LG Electronics Inc.

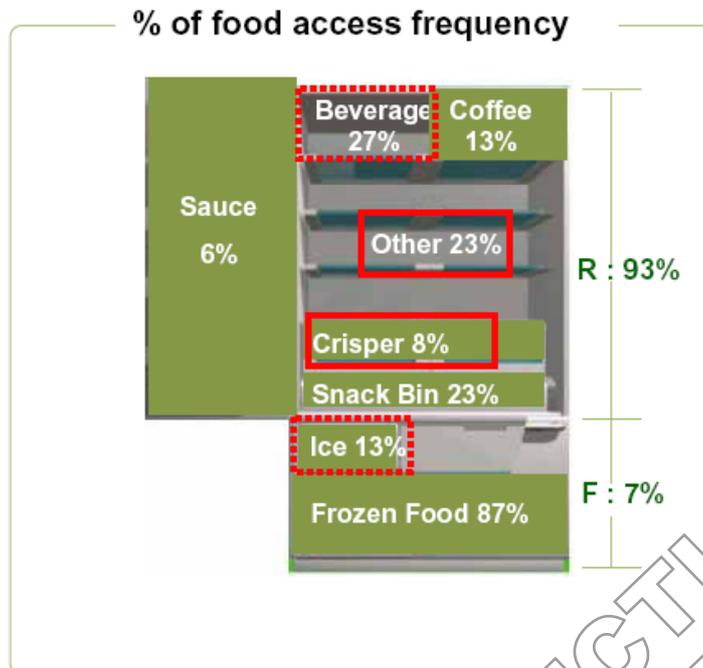
Exhibit 14

Refrigerator and Freezer Access Patterns of Time Savers and Gourmands

Time Savers



Gourmands



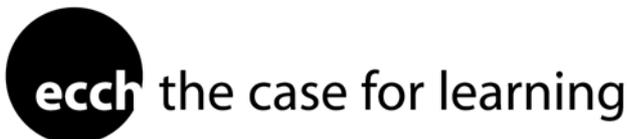
Source: LG Electronics Inc.

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