LINKS Services
Marketing Simulation

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Chapter 1: Introduction

"The secret of getting ahead is getting started. The secret of getting started is breaking your complex, overwhelming tasks into small manageable tasks, and then starting on the first one." – Mark Twain

In the LINKS Services Marketing Simulation, competing firms market and deliver “support services” (e.g., computing/IT support, financial management, health care, repair, or maintenance services) to household (consumer) and major accounts (business) customers through a direct sales channel in multiple market regions. Your management team competes against other firms in the support services marketplace. Working with your management team, your goal is to improve your firm's overall financial, operating, and market performance.

The LINKS Services Marketing Simulation engages participants in all aspects and challenges of services management:
- Human Resources Management (hiring/firing/retaining and service personnel).
- Marketing Management (segmentation, market selection, differential advantage, marketing mix decisions, and service design and portfolio management).
- Service Operations Management (technology, productivity, capacity management, forecasting, and service quality management).

Research resources are available to LINKS firms, including service quality metrics, employee and customer satisfaction surveys, and competitive benchmarking studies.

LINKS firms are challenged to effectively integrate business processes to create value for customers and shareholders. LINKS highlights the interrelationships among marketing activities, organizational capabilities, and service operations (human resource management and technology), while enhancing and challenging participants’ management, analysis, planning, and strategy skills. Your management team will also encounter challenges and opportunities arising in organizational and group settings. These management considerations will be as important as analysis and decision making skills in achieving success in LINKS.

The key to success in LINKS is a carefully developed long-run strategy with appropriate expertise being applied to sales forecasting, market monitoring, financial analysis of alternative strategies, planning, and marketing and operations decision making. A second major imperative is superior execution of strategy in a dynamic competitive environment. Large doses of common sense and managerial acumen will be needed throughout the LINKS exercise.

Why Use Simulations?

"I hear and I forget; I see and I remember; I do and I understand." – Confucius

Why use simulations in management education? Why not use traditional classroom lectures, perhaps combined with case studies? Adults learn best by doing. "Doing" involves taking responsibility for one’s actions, receiving feedback, and having an opportunity to improve through time. In management education and training settings, management simulations foster learning in a non-threatening but competitive environment of the kind that real managers face every day.
An “ideal” way to educate managers would involve taking over the management of a real company. Unfortunately, real life has real-life costs and consequences associated with it. Few companies would permit novices to run part or all of their business in real time. Perhaps more importantly, real life evolves slowly. It takes quite a while for management initiatives to be developed and implemented. Real life’s feedback is slow in coming and often difficult or impossible to interpret.

Like a flight simulator, a management simulator allows more rapid time compression, quick feedback to the learner, and is a low-risk process (except to one's ego). A well-designed management simulator can provide the student with a realistic education and training experience in the relative safety of the simulation's operating environment. And, perhaps more importantly, the lessons learned in a management simulation occur within hours or days, not the months, quarters, or years associated with real life.

Here are the classic reasons to favor management simulations in adult-learning environments. Compared to traditional lecture/case/discussion educational events, simulations:

- Reflect active rather than passive participation, enhancing learning motivation.
- Apply key management concepts, especially coordination and planning.
- Require analysis and decisions in the context of market-based feedback in the presence of thoughtful, vigilant competitors.
- Provide rapid feedback, encouraging participants to learn from their successes and failures within a relatively low-risk competitive dynamic environment.
- Provide learning variety through novel learning environments.

**What Will You Learn?**

"The ability to learn faster than competitors may be the only true sustainable competitive advantage." – Arie P. De Geus

The learning objectives implicit in the LINKS Services Marketing Simulation include:

- Developing and executing a strategy that creates value for customers and for shareholders.
- Crafting an effective marketing program to communicate value to customers.
- Matching demand and supply (capacity) in a competitive environment.
- Managing service quality and technology
- Managing service personnel (hiring/firing, training, and compensation)
- Interpreting business performance metrics (e.g., employee job satisfaction and customer satisfaction survey data)
- Enhancing and encouraging fact-based analysis and decision making
- Experiencing competitive dynamics in an evolving marketplace.

Beyond these learning objectives, other subtle learning goals include improving your ability to recognize, anticipate, and cope with uncertain market forces. For example, well-designed strategies, tactics, and plans can be thwarted by unanticipated environmental or competitive forces.

Since the LINKS management simulation learning environment is built around teams, small group functioning and decision making skills are emphasized in the background throughout this simulation exercise. Since most workplaces include project teams, the management simulation learning environment provides hands-on experience in identifying key principles and practices associated with high-performing teams.
LINKS Overview

“The best way to put distance between you and the crowd is to do an outstanding job with information. How you gather, manage, and use information will determine whether you win or lose.” – Bill Gates

Within LINKS, there are two support services categories (market segments): Household (i.e., individual consumers and family units) and Major Accounts (i.e., businesses and governments). While sharing many elements in common from an operational perspective, these two market segments represent completely different end-users. Household and Major Accounts support services categories in LINKS are separate vertical markets that do not overlap.

Marketing activities articulate “promises” to potential customers of LINKS support services. Support services are delivered by customer service representatives (CSRs). Firms support their CSRs somewhat differently depending on their organizational capabilities (derived from how services are designed) and technology investments.

Each LINKS firm in your support services industry has two services: one service targeted at the Household market segment (service 1) and one service targeted at the Major Accounts market segment (service 2). LINKS uses “f-s” terminology to describe specific firms and their service offerings. For example, service 3-2 is firm 3’s second service (a Major Accounts support service).

Each decision period in LINKS is one calendar quarter. Within LINKS, each calendar quarter in the year is assumed to have an equal number of calendar days. There is no known time-of-year seasonality in LINKS markets.

You assume control of your LINKS firm at the end of quarter 3. Thus, your first decisions will be for quarter 4. Although your firm has been operating for a number of years, detailed information is only available about the recent past.

All firms in your industry started quarter 1 identically. This is consistent with an industry that has evolved over time so that (ultimately) all competitors now emulate each other. Decisions in quarters 1-3 were constant throughout these three quarters. However, due to the normal random forces in the various markets in which your firm operates (e.g., employee attrition), the financial and market positions of the firms in your industry will vary somewhat at the end of quarter 3.

In each decision quarter, your management team accesses the previous quarter's results, analyzes and evaluates recent performance, and plans and implements on-going marketing programs and operations capabilities. The LINKS analysis-planning-implementation-evaluation cycle is shown in Exhibit 1. This cycle repeats throughout your LINKS exercise enabling your team to learn from experience.
Exhibit 1: LINKS Analysis-Planning-Implementation-Evaluation Cycle

(1) Analysis: Analyze current financial, operating, and market performance, which involves both individual and within-team analysis.

(2) Planning: Based on prior analyses and working with your teammates, make decisions for the next round. These decisions represent your plan.

(3) Implementation: Submit your decisions for the next round via the LINKS Simulations website.

(4) Evaluation: Compare your plan to your results. What were you trying to accomplish? How well did you do? What corrective action is needed? Iterate

The LINKS currency unit is the LCU, the "LINKS Currency Unit." The LCU is abbreviated "$" and pronounced Ldollar ("el-dollar"). The "LINKS Currency Unit" (LCU) is a Euro-like multi-country currency.

In your travels, you might have encountered the "$" symbol associated with currencies in Australia, the Bahamas, Barbados, Belize, Bermuda, Brunei Darussalam, Canada, Cayman Islands, Fiji, Guyana, Hong Kong, Jamaica, Liberia, Namibia, New Zealand, Singapore, Solomon Islands, Suriname, Taiwan, Trinidad/Tobago, the United States, and Zimbabwe. That's merely a coincidence. The "$" currency symbol is widely known to have originated with the Ldollar.

Market Demand Patterns

"Just because the river is quiet does not mean the crocodiles have left." – Malay Proverb

Customer demand in LINKS is measured in terms of (one-time) usage of a given service. In other words, firms measure demand by counting transactions or "units" of service. Contracts for support services that cover customers’ usage over a period of time do not exist in the LINKS support services industry. Customers may have single or multiple transactions with a given service firm within a given quarter. Some customers are more loyal than other customers, buying more and (potentially) upgrading to a higher level of service.

Demand for each support service is influenced by its marketing program. For example, lower prices and more marketing spending stimulate higher demand. In addition, various exogenous factors influence market demand. There is no known time-of-year seasonality within the market for LINKS support services. As with all goods or services, some customers are relatively heavy users of support services while others would never purchase support services even with a price of $0. Customers may choose to use your firm’s support services, purchase from a competitor, rely on internal (i.e., in-house or do-it-yourself) support service, or do without altogether.

Customer demand for support services in the Household and Major Accounts market segments may respond somewhat differently to the marketing variables at your firm’s disposal. Thus, what might work well for one service in one geographic market might not work well for other services in other geographic markets. For example, customers may be quite sensitive to price for a service
offered in a particular market, while they are somewhat insensitive to wide ranges of prices for services in other markets.

**LINKS Decisions**

"The fight is won or lost far away from witnesses, behind the lines in the gym and out on the road, long before I dance under those lights." – Muhammad Ali

You assume control of your LINKS firm at the end of Quarter #3. Your first decisions are for Quarter #4. Your predecessor management team left you no historical records other than the Quarter #1-#3 financial and operating reports.

At the beginning of LINKS, teams take over management responsibilities of existing firms with ongoing marketing, human resource, and operations decisions in place. Whether these current decisions are good, bad, or so-so is unknown. However, your firm is currently profitable, so things can't be completely awful. You will have to live with uncertainty when LINKS begins. You are expected to learn quickly. The strong current financial and market position of your firm means that continuous negative profitability would be viewed as an obvious sign of poor management.

In each quarter, LINKS firms make a range of marketing, human resource, and operations decisions that interact with each other, requiring close coordination between marketing programs and operations capabilities. A number of research studies are available in LINKS. Firms may choose to order these research studies in any quarter, incurring the associated research study costs described later in the LINKS participant’s manual.

It is important to note that LINKS has a special continuous decision framework built into it. All decisions from the previous quarter carry over intact into the present quarter, unless a firm issues orders to change a decision. All decisions in LINKS are, therefore, standing orders and they will continue to be in force until explicitly changed by a firm.

You'll submit your decision input changes and research study orders no later than the designated input submission deadlines specified by your LINKS instructor. You’ll access the LINKS Simulation Database (via the LINKS website, http://www.LINKS-simulations.com) and use your firm’s LINKS passcode to access your LINKS division’s data/decisions, retrieve past financial reports, and make decision input changes for each quarter in your LINKS exercise.

**General Advice**

"The journey is the reward." – Steve Jobs, Apple Computer Founder

Based on our observation of thousands of past LINKS participants, these general suggestions have well-proven value:

- Read and re-read this LINKS participant’s manual (there’s lots of good stuff in it).
- Regularly think about general business and management principles and how they might relate to and work within LINKS.
- You don't have to know everything about LINKS at the beginning of the exercise, but you must consistently increase your knowledge-base through time.
- "Share toys" (i.e., work hard at sharing your useful fact-based analyses and important insights
with all members of your LINKS team). "Knowing" something important personally is only a part of the LINKS management challenge. Exploiting that knowledge effectively throughout all of your LINKS team's deliberations, with and through your whole LINKS team, is the key to harvesting the maximum ROI from your data, facts, analysis methodologies, insights, and knowledge.

- Get the facts and base your decisions on the facts, not on wishes, hopes, and dreams.
- Work hard at anticipating and responding to changes in market-driving forces.
- Coordination of demand and supply is key.
- Remember the Ferengi proverb (for Star Trek fans): "There is no honor in volume without profit." Volume, sales, and market share are easy to obtain, if there are no constraints on profitability. Profitable volume is the "holy grail" in business and in LINKS.

Good luck and try to have fun in LINKS. It's all about learning and, in a "learning marathon" like LINKS, everyone can cross the finish line in a personal-best time.

**Excel Spreadsheet Access To This Manual’s Exhibits**

This participant’s manual for the LINKS Services Marketing Simulation includes a large number of tabular exhibits. To facilitate convenient access to these exhibits for on-going referencing during your LINKS exercise, these exhibits have been included in an Excel spreadsheet. To access/download this Excel spreadsheet, point your favorite browser to this case-sensitive URL:

http://www.LINKS-simulations.com/SMktg/ExhibitsSMktg.xls
Chapter 2: Service Design Decisions

"Someone's sitting in shade today because someone planted a tree a long time ago." – Warren Buffett

Your firm has two support services in two categories (segments). Service 1 is provided to Households and service 2 is provided to Major Accounts (i.e., business and government customers).

You may modify the design of these support services, within the limits described in this chapter. However, you may not change the support services category or target market (Household and Major Accounts) for services 1 and 2.

Each of your support services has a particular design (configuration) when you assume control of your LINKS firms. You may change the design of your support services as your LINKS event evolves over time. Design changes influence demand for a service and firm service productivity, leading to direct and indirect financial consequences. Service is provided by CSRs (customer service representatives) in each market region. Managing trade-offs between service design, cost, and CSR productivity will be important in LINKS.

Service Design and CSR Productivity

"You can have the Model T in any color, so long as it's black." - Henry Ford

LINKS support services have standardized designs across all market regions. There are no regional variations in LINKS support services design. For example, service 3-1 is the same Household support service design (configuration) in all market regions in which it is actively marketed.

Since customer preferences may vary across market regions, firms may have to make trade-offs in deciding how much to customize a service’s design (configuration) to create superior value for customers in a particular market region. Customization of a support service to maximize sales in one region might mean fewer sales to customers in other regions who prefer alternate support service designs (configurations).

In LINKS, service design (configuration) is described as a seven-character code with the following elements and interpretations:

1. Service Category: "H" for Household, "M" for Major Accounts
2. CSR Technical Training: 0-9 (hours per month)
3. CSR Service Skills Training: 0-9 (hours per month)
4. Service Appointment Scheduling: 1-7 (days)
5. Scheduling Style: 0-4 (appointment scheduling “window” in hours)
6. Service Call Duration: 1-3 (1=”minimum”, 2=”more than minimum”, 3=”maximum”)
7. Service Call Format: 0 or 1 (0=”telephone service”, 1=”on-site visit”).

For example, service “H243121” is a Household support service with 2 hours/month of Technical Training and 4 hours/month of Service Skills Training for CSRs assigned to this support service, Service Appointment Scheduling of 3 days (support service provided within 3 days of the service
request from customers), a Scheduling Style with a 1-hour appointment “window” for support service calls, a more-than-minimum Service Call Duration is provided to solve the customer's service request, and an “on-site visit” Service Call Format.

CSRs (customer service representatives) deliver support services. Each CSR has 22 8-hour days of service capacity per month (i.e., 176 hours of service capacity per month or 528 hours of service capacity per quarter). The design (configuration) of a support service influences the available service capacity of your CSRs assigned to that support service. For example, if a particular support service includes a service design of 4 hours/month of CSR Technical Training, then the available capacity of the CSRs associated with that support service would be reduced by 4 hours/month (12 hours/quarter) from the standard capacity of 176 hours of service capacity per month or 528 hours of service capacity per quarter.

The design of each service influences customers’ preferences for it, as well as the costs associated with providing the service. Generally speaking, customers prefer in-person/on-site, quicker, and predictably-scheduled service from skilled CSRs. Of course, customers also prefer lower-cost support service to higher-cost support service, all else being equal. Your management team will have to learn how much customers are willing to pay for particular service attributes and then develop and implement a plan to profitably serve them.

Service design (configuration) influences variable costs per support service call and CSR productivity as follows.

- **Service Category:** There are two service categories, “H” for support services targeted at Households and “M” for support services targeted at Major Accounts. Service 1 must always be a Household support service and service 2 must always be a Major Accounts support service. You cannot change the Service Category for these two support services. However, your support services can be differentiated to create value for customers in a variety of ways, described below.

- **CSR Technical Training:** Each support service may have 0-9 hours per month of CSR Technical Training for CSRs assigned to the support service. Indirect implications for CSR productivity arise with each hour of training reducing available CSR capacity by an hour.

- **CSR Service Skills Training:** Each support service may have 0-9 hours per month of CSR Service Skills Training for CSRs assigned to the support service. Indirect implications for CSR productivity arise with each hour of training reducing available CSR capacity by an hour.

- **Service Appointment Scheduling:** Service appointments are scheduled within 1-7 days of a customer’s request for support service. Customers prefer quicker scheduling of support service calls. However, there are direct and indirect cost implications associated with quicker service appointment scheduling.

  - **Direct Costs:** Variable costs per Major Accounts support service call equal $0.5(8-SAS)(8-SAS)$ where SAS is the level of Service Appointment Scheduling in days. For Major Accounts support service calls, the least expensive Service Appointment Scheduling
option (7-day service) incurs variable costs per service call of 0.5(8-7)(8-7) = $0.50; the most expensive Service Appointment Scheduling option (1-day service) incurs variable costs per service call of 0.5(8-1)(8-1) = $24.50. The variable costs associated with Household support service calls are one-half of the associated variable costs for Major Accounts support service calls.

- **Indirect Costs**: CSR productivity is influenced by Service Appointment Scheduling. To provide sufficient standby/reserve CSR capacity to service shorter Service Appointment Scheduling programs, available CSR service time is reduced by 1.5(7-SAS)(7-SAS) hours per quarter where “SAS” is the Service Appointment Scheduling level associated with a support service.

**Scheduling Style**: Support service calls are scheduled within appointment-time “windows” (e.g., between 100pm and 300pm on a particular day). Appointment-time “windows” of 0-4 hours are possible, with a 0-hour “window” corresponding to a specific appointment time (i.e., no appointment-time “window” but rather a specific appointment time). Customers prefer narrow appointment-time “windows” but there are cost implications associated with narrow-“window” scheduling. Variable costs per service call equal 3(4-SS) for Household support services and 4(4-SS) for Major Accounts support services, where SS is the level of Scheduling Style. Thus, a 2-hour appointment-window scheduling style has associated variable costs of $6 for Household support services while a 0-hour appointment-window scheduling style has associated variable costs of $16 for Major Accounts support services.

**Service Call Duration**: Support service calls average one hour in duration to handle customers’ support service requests. However, this minimum level of support service call (level 1) may not provide as much hands-on customer support and empathy as might be desired. More-than-minimum (level 2) and maximum (level 3) Service Call Durations are possible with associated consequences for CSR productivity. More-than-minimum (level 2) Service Call Duration increase support service calls by an average of 6 minutes and maximum (level 3) Service Call Durations increase support service calls by an average of 15 minutes. Variable costs for service call duration for Household support services are $5.00, $10.00, and $17.50 for levels 1-3, respectively. Corresponding variable costs for service call duration for Major Accounts support services are $5.00, $12.50, and $25.00 for levels 1-3, respectively.

**Service Call Format**: Support service calls may be conducted over the telephone (level 0) or via an on-site visit (level 1). Variable costs per service call associated with telephone support service are $10 while the corresponding variable costs per on-site service call are $20. CSR

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**Case Study: Waiting For The Cable Guy**

Some cable companies are decreasing wait times and improving service via technolog.

- **Comcast Cable**: Scheduling windows of four and two hours depending of technician and customer availability; rolling out mobile devices for all technicians to better communicate with dispatchers.
- **Time Warner Cable**: Normal scheduling windows of four hours, but two-hour windows are available depending on technician availability and type of service; equipping technicians with hand-held devices and experimenting with global positioning systems in some areas.
- **Charter Communications**: Four-hour scheduling windows; added tech support through internet “chat” system and is expanding on-line “self-help.”
- **Cox Communications**: Two-hour scheduling windows; testing new technician tracking software and automated customer alert calls.

productivity for on-site support service calls is reduced by the average travel time of 20 minutes between on-site support service calls.

**Reconfigurations**

"Get the product out there as soon as you can and let the market judge how good it is. You can fix it as you go along." – William R. Hambrecht, Founder/Chairman/CEO of WR Hambrecht & Co.

Changes in a service’s design are reconfigurations. A **reconfiguration involves a change in one or more of a service’s design (configuration) elements.** Any service configuration change incurs one-time costs of $50,000, plus an additional $10,000 per changed service configuration element, for associated redesign, testing, and administrative activities. For example, changing three design elements simultaneously results in a total associated reconfiguration cost of $80,000. **Reconfiguration occurs immediately, so sales in the next quarter involve the reconfigured service.**

**Due to the workload associated with reconfigurations, your firm is limited to reconfiguring a maximum of one service per quarter.** A reconfiguration may involve changing more than one element of a service’s existing design (configuration).

Don’t assume that everything stays the same forever in the support services industry. Customer preferences for support services may change through time in some/all regions. In addition, cost-structure changes that occur from time to time might require adjustments in lots of decisions, including service design configurations. Thus, it may be necessary to reconfigure support services more than one time.

**Service Design Decisions Form**

What's the right combination of service design elements for your firm’s support services? What's the most profitable support service design(s)? These are crucial questions to the successful management of your LINKS firm.

The answer to these questions depends on customers’ preferences for support services design elements, customers' willingness and ability to pay for these elements, and the direct and indirect costs associated with providing these elements. Surprisingly, the highest possible quality levels with the most cutting-edge technologies may not be the best choices when customers' willingness and ability to pay for service design elements are taken into account.

A blank "Service Design Decisions" form may be found on the next page. Complete this decision form during your team deliberations if you wish to reconfigure any service.
# Service Design Decisions

<table>
<thead>
<tr>
<th></th>
<th>Service 1</th>
<th>Service 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Category {“H”=Household, “M”=Major Accounts}</td>
<td>H</td>
</tr>
<tr>
<td>2</td>
<td>CSR Technical Training {0-9 hours/month}</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>CSR Service Skills Training {0-9 hours/month}</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Service Appointment Scheduling {1-7 days}</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Scheduling Style {0-4 hour appointment “window”}</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Service Call Duration {1=“min,” 2=“more,” 3=“most”}</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Service Call Format {0=“telephone,” 1=“on-site”}</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

1. Your firm may reconfigure, at most, one service per quarter.
2. To reconfigure a service, enter new values for one or more configuration elements (CSR Technical Training, CSR Service Skills Training, Service Appointment Scheduling, Scheduling Style, Service Call Duration, and/or Service Call Format).
3. Service 1 must always be a Household service and service 2 must always be a Major Accounts service.

**Reminders**

Only input changes. If you’re happy with the current values of these decisions, leave the appropriate decision entries blank.

All decision inputs change the existing values to the values that you specify. Do not enter "+" or "-" values. Rather, enter new values only (new values replace the existing value of the decision variable with your designated value).
Chapter 3: Service Operations Decisions

“It matters not whether a company creates ... a computer, a toaster, or a machine tool, or something you can only experience, such as insurance coverage, an airplane ride, or a telephone call. What counts most is the service built into that something - the way the product is designed and delivered, billed and handled, explained and installed, repaired and received.” – Ronald Henkoff, “Service Is Everybody's Business,” Fortune (June 27, 1994), p. 48

In LINKS, support services are delivered by CSRs (customer service representatives) in each market region. Service employee decisions include CSR salary, CSR hiring and firing, and CSR time allocations in each market region to your support services. Your firm maintains a separate CSR staff in each market region in which you operate.

A firm’s utilization level of its CSRs is the largest driver of its service quality. Higher CSR utilization is associated with lower perceived service quality due to service queuing, lack of time for CSRs to provide high-quality service, and related issues associated with high utilization levels (including CSR turnover).

There is a natural lag between perceived service quality and CSR usage (utilization) since perceived service quality is survey-based. Customers are surveyed about their service quality perceptions of support services for which they have personal recent experience. So, the current quarter’s perceived service quality is based on actual CSR usage (utilization) from the previous quarter. Balancing the trade-offs among CSR usage (utilization), cost, and service quality perceptions will be an on-going challenge for your management team.

CSR Salary Decisions

Firms may establish different CSR salary levels across regions. While cost-of-living considerations and competitive market forces might lead you to have CSR salaries that vary across regions, wide variations may lead to morale problems, and not just in the regions where salary levels are particularly low.

CSR salaries are expressed in terms of dollars per month. Thus, a $24,000 per year salary would be specified as a $2,000 salary per month. CSR base monthly salary may not be changed by more than $500 in any quarter from its previous value.

CSR salary levels influence the quality and quantity of the service effort. Through time, higher salary levels will attract and retain more able service representatives, ultimately yielding higher
service quality for customers.

CSR salaries are policy-level directives. The specified salary levels in each region are averages. Regional service managers implement these policies appropriately. This will mean, for example, that more experienced and more able service personnel will typically receive above-average salaries with others receiving correspondingly below-average salaries. These tactical issues are managed by your regional service managers.

**Service Hiring/Firing Decisions**

You manage CSR service staff size in each region by hiring and firing CSRs.

- You may hire new (inexperienced) CSRs in any region.
- Hiring costs for new (inexperienced) CSRs equal two month's salary, representing the costs associated with recruiting, screening, and training.
- Firing costs incur a charge equal to three month's salary.
- Hiring and firing costs are recorded as "Service HF" on your financial reports.
- Service personnel are hired immediately (i.e., at the start of the next quarter). However, they train in the first month (at full salary) so they don't begin to provide service calls until the following month. Thus, CSR hires in a quarter are only two-thirds as productive as experienced CSRs.

There is a single hiring and firing decision each market region in LINKS. Positive values of this decision variable in reflect hiring decisions while negative values reflect firing decisions. Obviously, you would never hire and fire CSRs in a particular region in the same quarter, so a single decision variable in each region is all that's necessary to permit you to make CSR hiring and firing decisions in the market regions.

Planned changes in service workforce size are accomplished by judicious hiring and firing decisions. Attrition reduces the number of CSRs through time, unless deliberate hiring and decisions are made. Thus, to maintain your existing CSR staffing levels, it will be necessary to hire service personnel regularly.

Recent experience in the support services industry indicates that CSRs resign at the rate of 7%-10% per quarter. Workload and compensation are thought to influence resignation rates, in positive and negative fashions respectively. If your CSRs are asked to work very hard, their productivity increases but resignations may also increase. As might be expected, higher-paid service representatives resign with less frequency than lower-paid service representatives.

For newly hired CSRs, a month's training is required before they are fully functional in their new positions. This month's training ensures that newly hired CSRs are knowledgeable and courteous employees. New hires receive their normal salaries in this training month, but they don't provide
any support service to customers during the first month of employment.

The maximum number of new CSRs that may be hired in any quarter in any region is 99. The CSR service force any region can be reduced via firing decisions.

Transferring CSRs from one region to another region is not possible in the LINKS Services Marketing Simulation.

If you decide to stop selling all support services in a particular region, you would need to fire all remaining CSR staff in that region.

**Service Time Allocation Decisions**

Two aspects of service quality, reliability and responsiveness, are heavily influenced by your decisions about service time allocation. You direct your regional service managers to allocate available CSRs to each of your support services via time allocation decisions (expressed in percentages) in each market region. These time allocations must sum to 100% across your support services in each market region. If your firm only has a single support service actively marketed in a region, you should have 100% of your CSRs’ time allocated to that single support service. With two support services actively marketed in a region, any combination of time allocation percentages (such as 50% and 50%, or 72% and 28%, or 10% and 90%) is possible as long as they sum to 100% across your support services.

Service time allocations within each region are exclusive responsibility assignments. CSRs implicitly assigned to one support service in a quarter are unavailable for “overflow” or “overcapacity” support for other support services in that region, even if they have unused capacity in a quarter. **In general, your service goal should be to align your CSR staff time allocations and CSR service force sizes to be consistent with service demand and your firm’s targeted CSR usage (utilization) level for each support service.**

**Service Capacity**

CSRs provide support services to your customers. **Each CSR has 22 8-hour days of service capability per month (i.e., 176 hours of service capacity per month or 528 hours of service capacity per quarter).** Support service design (configuration) influences the available service capacity of CSRs assigned to that support service. For example, if a particular support service includes a service design of 4 hours/month of CSR Technical Training, then the available capacity of the CSRs associated with that support service would be reduced by 4 hours/month (12 hours/quarter). Note, also, that Service Call Duration and Service Call Format influence service capacity, since these service design elements affect CSR call time per call.

Here’s a sample calculation of CSR capacity in a particular region for a particular support service. In this sample calculation, assume that

1. 4 hours of CSR Technical Training and 2 hours of CSR Service Skills Training are included in that particular service’s design;
2. Service Appointment Scheduling is 7 and Service Call Duration and Service Call Format are minimum (level 1), so that there are no indirect CSR productivity consequences.
Standard CSR Capacity (528 hours/quarter) | 528 hours/quarter
---|---
- CSR Technical Training (4 hours/month) | 12 hours/quarter
- CSR Service Skills Training (2 hours/month) | 6 hours/quarter
= Available Support Service Time Per CSR (hours/quarter) | 510 hours/quarter

| Support Service Call Capacity: Telephone Service Calls | 510 calls/quarter
| Support Service Call Capacity: On-Site Service Calls | 382.5 calls/quarter

This sample calculation is for “continuing” CSRs (non-hires). For CSR hires to this region, only two-thirds of the 510 hours are available (CSR hires train for one month).

CSR staffing levels and staff-movement timing in each region are defined as follows:
```
Beginning Staff - Firings - Resignations + Hirings = Available Staff
```

In this CSR staffing level calculation, note that:
- Available Staff includes a mixture of “continuing” CSRs and new hires (inexperienced CSRs). New hires have less-than-full-hours availability due to their one month of training.
- Forced CSR reductions through firing are assumed to occur at the beginning of a quarter.
- CSR resignations are assumed to occur at the beginning of a quarter.
- Available Staff in a quarter equals Beginning Staff in the subsequent quarter.
- In calculating total service personnel salary in any service in any quarter, the relevant number of service personnel equals Available Staff times the relevant region-specific salary level.

Each sale of a support service requires a service call. Thus, the number of service calls in a quarter always equals the sales volume in that quarter.

### Unfilled Orders

Similar to other services, support services are characterized by simultaneity of production and consumption and, of course, perishability. Consequently, unfilled orders occur when customer demand for any service in any market region exceeds the available CSR capacity for that service in that market region. In LINKS, the difference between potential customer sales (orders) and actual customer sales due to insufficient CSR capacity is "unfilled orders."

**Unfilled orders are not backlogged orders. Unfilled orders are not guaranteed (i.e., contracted, pre-paid) future sales.** Unfilled orders incur costs of $20/unit (recorded an Unfilled Handling costs on your corporate P&L statements).

Past experience suggests that unfilled orders reflect three customer types. Some customers immediately defect to another competitor’s (available) support service. Other customers decide not to buy any support service now or in the near future. Still other customers wait and attempt to repurchase the preferred support service having these unfilled orders again in the future when CSR capacity is more favorable. The size of these three types of unfilled-orders customers is unknown. In all cases, however, it should be expected that customers remember their experiences with unfilled orders and these unfavorable experiences influence their perceptions of your service offering, negatively influencing subsequent sales.

Unfilled orders represent demand that might have been realized beyond “filled orders” (i.e., sales) if sufficient service capacity had been available to meet all customer purchase requests. With
unfilled orders for multiple services offered to the same market segment in the same quarter, the same customers may have attempted to purchase from multiple firms, so firms must be wary of the potential for industry-wide double-counting in unfilled orders reporting. In such a situation, a single customer would be counted as an unfilled order by both services.

Service Overhead

Each CSR incurs direct and indirect overhead expenses in connection with providing support services. Direct expenses include CSR benefits (health insurance, government taxes of various kinds, and so on). Indirect costs to support service representatives include periodic service training activities, service management overhead, office support, and infrastructure support related to support services. In total, these service overhead expenses equal the CSR salary level. Thus, if you have a monthly service force salary level of $3,000 in a region, a further $3,000 of service overhead per month is also incurred to support each CSR.

Your firm is automatically billed for the direct and indirect costs associated with maintaining service representatives in each of the market regions. These service overhead expenses are recorded as “Service O/H” on your financial statements.

Managing CSR Capacity Utilization

Each market region may have a region-specific CSR maximum capacity limit, which is applied to all support services sold in that region. Such limits ensure that your CSRs will not be overworked beyond the specific limits that you specify. However, if this limit results in unfilled orders because more service demand exists than your specified capacity limits permit, then there might be loss of goodwill among customers who were unable to obtain support service this quarter. This loss of goodwill might reduce service demand in the future.

Rather than specifying CSR maximum capacity utilization limits, it is possible to adjust a service's marketing program to temporarily reduce demand, to better match demand and supply. For example, a temporary price increase will reduce service demand until such time as service capacity can be increased.

When spare (slack) service capacity time exists, you may assume that CSRs use the spare (slack) time productively to engage in

Case Study: Northwest Airlines

A planned capacity cut by Northwest Airlines may restore orderly service after a week of widespread cancellations, but Northwest pilots lament the inevitable loss of revenue.

“I think this is better than last-minute cancellations, but we would prefer that we have enough pilots to fly all the revenue flights,” said Monty Montgomery, spokesman for the Air Line Pilots Association. The No. 5 U.S. airline said last Friday that it would cancel one of its Detroit-to-Frankfurt flights from July 18 to free-up pilots, and in August would cut its domestic mainline capacity by 3%.

The carrier said the capacity cuts would correct a recent series of flight cancellations. From June 22 to June 28, Northwest said it canceled about 12% of its mainline flights, the route system it operates itself rather than through contract airlines.

Source: "Northwest Cuts Flights To Free Up Pilots, Avoid Last-Minute Cancellations," USA Today (July 3, 2007)
customer follow-up calls, self-improvement study, voluntary training, and related activities that may enhance their long-run capabilities for providing high-quality service. When their available time is fully used to service current demand, there is no time available for such productivity improvement activities.

In the long run, operating at or near full capacity may lead to degradation in service quality and to increases in CSR turnover. Thus, there is a delicate trade-off between maximizing short-run CSR capacity utilization and maximizing long-run service quality.

There are no financial or operational consequences associated with setting CSR maximum capacity limits above current sales volume realizations. CSR maximum capacity limits are interpreted as contingencies that only take effect if needed.

CSR maximum capacity limits for each region may be any number (integer) between 50% and 100%.

Service Operations Decisions Form

"Profit in business comes from repeat customers, customers that boast about your product or service, and that bring friends with them." – W. Edwards Deming

A blank "Service Decisions" form may be found on the next page. Complete this decision form during your team deliberations.
## Service Operations Decisions

<table>
<thead>
<tr>
<th>Service Operations Decisions</th>
<th>Region 1</th>
<th>Region 2</th>
<th>Region 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSR Salary $/Month</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSR Hiring (+) and Firing (-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSR Maximum Capacity Limit</td>
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</tbody>
</table>

### CSR Time Allocations

<table>
<thead>
<tr>
<th></th>
<th>Region 1</th>
<th>Region 2</th>
<th>Region 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service 2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total** 100% 100% 100%

*Note:* Service center time allocations must sum to 100% in each market region.

---

### Reminders

Only input changes. If you're happy with the current values of these decisions, leave the appropriate decision entries blank.

**Don't forget to zero-out prior hiring/firing decisions if you don't wish them to continue on into the next quarter.**

All decision inputs change the existing values to the values that you specify. Do not enter "+" or "-" values except for CSR firings which would, by definition, be a negative number. Rather, enter new values only (new values replace the existing value of the decision variable with your designated value).
Chapter 4: Marketing Decisions

Your LINKS firm is responsible for a range of marketing decisions for your support services: pricing, marketing spending, and marketing program details. These marketing decisions are an important part of your firm’s effort to create and communicate a consistent value proposition to the marketplace.

You sell your support services directly to final end-user customers in the Household and Major Accounts categories. Since your firm sells directly to final end-users, the price you set for each support service is the final price paid by end-users. $10 in order processing costs accrue for every support service sale.

Price Decisions

You set prices for each support service in each region. Prices affect demand in the usual fashion. Higher prices are normally associated with lower levels of customer demand in all categories and market regions. The specific price sensitivities in the support services categories and market regions in LINKS are unknown. You’ll need to learn about the markets’ responsiveness to price through your experience in LINKS and by exploiting available LINKS research studies.

In addition to the physical costs of producing and distributing updated price sheets, lists, and databases that accrue when a firm changes price (so-called “menu costs”), a range of indirect and non-obvious costs arise with price adjustments.¹

- **Managerial Costs:** A firm must gather information, analyze, assess, and ultimately communicate the logic associated with price changes throughout their organization. Managerial costs presumably increase with larger price changes, since there is more to assess/analyze and more organizational members become involved with larger price changes.

- **Customer-Facing Costs:** When implementing price changes, a communications program must be created and executed to portray a price change in the most favorable light to customers. In a B2B environment, price adjustments potentially involve (re)negotiation with those customers who are resistant to new (higher) prices.

In LINKS, each price change by your firm for a service in a market region results in $10,000 in costs plus $200 in costs per-dollar change in price (increase or decrease in price) plus costs of

¹ Recent published research documents the range of direct and indirect costs associated with price adjustments for a large U.S. industrial manufacturer (more than one billion USD$ revenues selling 8,000 products [used to maintain machinery] through OEMs and distributors). The authors found that managerial costs are more than 6 times, and customer-facing costs are more than 20 times, the so-called “menu costs” (physical costs) associated with price adjustments. In total, price adjustment costs comprise 1.22% of the company's revenue and 20.03% of the company's net margin. (Source: Mark J. Zbaracki, Mark Ritson, Daniel Levy, Shantanu Dutta, and Mark Bergen, “Managerial and Customer Costs of Price Adjustment: Direct Evidence From Industrial Markets,” *The Review of Economics and Statistics*, Volume 86, Number 2 (May 2004), pp. 514-533.)
0.25% of current-quarter revenues.\(^2\) For example, a $75 change in price for a service with revenues of $4,500,000 in a particular region incurs price change costs of $10,000 + ($200)(75) + (0.0025)($4,500,000) = $10,000 + $15,000 + $11,250 = $36,250. These price change costs are recorded as “Price Changes” in the “Fixed and Other Costs” section of your firm’s profit-and-loss statements in the quarter in which the price change occurs.

It’s very easy to drop price to attempt to increase demand. However, it’s always an interesting question whether that increased demand actually increases profits. Remember, the price drop that generates increased demand also reduces your margin on each unit sold. More importantly, it’s easy for competitors to see and feel threatened by a price change. Price wars are often initiated by thoughtless price manipulations by naive managers who assume that competitors won’t notice, won’t respond, or respond ineptly.

To provide a fact-based approach for making pricing decisions, please refer to the "Pricing Worksheet" on the following page. Complete this "Pricing Worksheet" anytime you’re planning to reduce prices. Review the worksheet details with your teammates. After this review, go ahead with the price decrease if you really think that it's appropriate. Review this "Pricing Worksheet" again after you receive next quarter’s financial results to verify whether your assumptions and predictions were reasonable.

**FYI: Price Cuts and Profits**

Here are some estimates of the impact on operating profit of a 1% reduction in price, assuming no change in volume or costs:

- Food and drug stores: -23.7%
- Airlines: -12.9%
- Computers, office equipment: -11.0%
- Tobacco: -4.9%
- Semiconductors: -3.0%

Across all industries, the average decrease in operating profit from a 1% price decrease was 8.0%, assuming no change in volume or costs.


**Marketing Spending Decisions**

A marketing spending budget is required for each support service in each region. This budget is managed by your firm’s region managers and is used for advertising, promotion, and sales force efforts associated with your support services. Allocate funds to marketing spending as you see fit. Spending doesn’t have to be equal for all support services and regions.

Significant percentages of advertising and promotion budgets are automatically spent on digital marketing, as is typical practice in other comparable industries. This includes allocations to Facebook, YouTube, and Google, for example, as well as location-based mobile marketing.

Marketing spending is thought to increase demand for support services in all market regions. Past industry practice has been to budget at least $50,000/quarter in marketing spending for all actively-marketed support services and market regions. It is thought that the impact of marketing spending on demand declines somewhat at higher expenditure levels, but the precise form of the relationship between marketing spending and sales is unknown. You will have to learn about the influence of marketing spending on sales through your experience within the LINKS support

\(^2\) Price change costs only accrue for services that are already actively being sold in a region. No price change costs accrue for a service as it is being introduced into a region (i.e., it was inactive in that region in the last quarter).
Pricing Worksheet

This pricing worksheet is designed to provide an analysis framework anytime you are contemplating decreasing prices within LINKS.

Complete the "Before" columns and review the "Before" columns with your team members. Complete the "After" column with actual data from the next quarter, after the results are available. Review the before-after comparison with your team members.

<table>
<thead>
<tr>
<th>Firm</th>
<th>Service</th>
<th>Region</th>
<th>Quarter</th>
</tr>
</thead>
</table>

| Industry Sales Volume [units] |
| * Volume Market Share [%s] |
| = Sales Volume [units] |
| * Price [$] |
| = Revenue [$] |
| - Variable Costs [$] |
| = Gross Margin [$] |
| - Fixed Costs [$] |
| = Operating Income [$] |

<table>
<thead>
<tr>
<th>Before Action Analysis, Review, and Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Quarter, Actual</td>
</tr>
<tr>
<td>Next Quarter, Predicted</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>After Action Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Next Quarter, Actual</td>
</tr>
</tbody>
</table>
services industry in which you are competing.

**Marketing Program Details**

"Marketing is not the art of finding clever ways to dispose of what you make. It is the art of creating genuine customer value. It is the art of helping your customers become better off. The marketer's watchwords are quality, service, and value." – Philip Kotler

For each support service and region, a complete marketing program consists of three components:

1. Marketing spending budget (the Ldollars allocated to marketing support of a service in a market region).
2. Marketing mix allocation, a 6-digit code corresponding to the 2-digit percentages (excluding "%" symbols) of the respective allocations of the total marketing spending budget to advertising, promotion, and sales force sub-programs.
3. Marketing positioning, a 2-digit code corresponding to competitive positioning ("how-you-say-it") and benefit proposition ("what-you-say").

Obviously, these marketing program elements should generally be consistent with your service offering’s actual standing in the support services industry. Customers will notice if your firm promises things that it doesn’t deliver! On the other hand, your firm may vary your marketing decisions over time as the marketplace changes.

If you make any inadvertent input error in marketing mix allocation or marketing positioning inputs, the previous quarter’s values will continue to be in effect in the current quarter. Examples of input errors include marketing mix allocations which don’t sum to 100%, marketing mix allocations of less than 10%, and invalid marketing positioning codes.

**Marketing Mix Allocation**

Marketing mix allocation refers to the distribution of your specified marketing spending budget across advertising, promotion, and sales force programs in support of each support service in each market region. Obviously, these three percentages must sum to 100% for each support service in each market region. You may vary your marketing mix allocations across your support services and market regions.

Advertising programs are implemented by your firm’s advertising agency in each region in which your firm operates. Your regional sales managers implement promotional and sales force programs in your regions. Sales force programs can include both internal sales representatives (company employees) and external sales representatives (independent sales representatives who work for several non-competing companies simultaneously).

Your 6-digit marketing mix allocation (excluding "%" symbols) specifies the 2-digit percentage allocations of your total marketing spending budget to advertising, promotion, and sales force programs, respectively. **You must allocate at least 10% of your marketing spending budget to each of advertising, promotion, and sales force.** For example, the 6-digit marketing mix allocation 113653 specifies that 11%, 36%, and 53% of the total marketing spending budget is to be allocated to advertising, promotion, and sales force programs, respectively.
Marketing Positioning

Each support service in each market region has a marketing positioning to guide advertising, promotion, and sales force efforts. Marketing positioning communicates the value proposition that a service offers to customers in a market.

Marketing positioning includes both “how to say it” (competitive positioning) and "what to say" (benefit proposition). LINKS firms select a two-digit marketing positioning code for each support service in each market region.

<table>
<thead>
<tr>
<th>First Digit: “How To Say It” (Competitive Positioning)</th>
<th>Second Digit: “What To Say” (Benefit Proposition)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examples of “how to say it” include marketing communications claims of more benefits for the same price as competitors or equivalent competitive benefits but at a lower price.</td>
<td>Examples of “what to say” include marketing communications claims of superiority in design quality, experience quality, or accessibility either individually or in combination.</td>
</tr>
</tbody>
</table>

Details follow about the specifics of “how to say it” (competitive positioning) and “what to say” (benefit proposition).

“How to say it” (competitive positioning), the first digit in a LINKS marketing positioning code, reflects a firm’s decision about whether to focus on benefit(s) exclusively, price exclusively, or explicitly compare benefit(s) to price within marketing positioning. Your firm may use the adjectives "more," "same," or "less" to describe your service offering relative to competing services targeted at a specific market segment in a particular market region.

Different combinations of these competitive positioning options (benefits and price) produce eight meaningful marketplace positions. These eight competitive positioning options, and their associated LINKS codes, are described in the following table. Dominated options, such as less benefits at a higher relative price, are "blacked out" (i.e., infeasible) because they are always inferior to other competitive positioning options.

<table>
<thead>
<tr>
<th>&quot;Benefit&quot;</th>
<th>More</th>
<th>Same</th>
<th>Less</th>
</tr>
</thead>
<tbody>
<tr>
<td>More</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Same</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Less</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>No Mention</td>
<td>8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

“What to say” (benefit proposition), the second digit in a LINKS marketing positioning code, is an articulation of the specific benefit(s) offered by a service. For example, a support service might provide benefits because it is better designed to match customer preferences, it delivers a superior service experience, or it is more accessible to customers. In LINKS, the specific benefit emphasis possibilities include design quality, experience quality, and accessibility.

- A "Design Quality" (service design quality) emphasis promises benefits derived from the support service’s design/configuration, such as convenient appointment scheduling and superior service call handling.
• An "Experience Quality" (service operations quality) emphasis promises benefits derived from the customer’s experiences with your firm’s CSRs (i.e., delivered service).
• An "Accessibility" emphasis generates top-of-mind awareness and promises benefits derived from ease of access, purchase convenience, and general presence/prominence in the marketplace.

A service’s marketing positioning may focus on one, two, or all three of these benefits. Note that price is not a benefit to customers, but rather reflects the economic cost incurred to obtain the offering’s benefit(s). Price positioning is included within the first part of the marketing positioning decision, "how you say it" (competitive positioning).

You may emphasize Design Quality (service design quality), Experience Quality (service operations quality), and/or Accessibility individually, in pairwise combination, or collectively in a service’s marketing positioning using these benefit(s) proposition codes.³

<table>
<thead>
<tr>
<th>Code</th>
<th>Proposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Design Quality</td>
</tr>
<tr>
<td>2</td>
<td>Experience Quality</td>
</tr>
<tr>
<td>3</td>
<td>Accessibility</td>
</tr>
<tr>
<td>4</td>
<td>Design Quality and Experience Quality</td>
</tr>
<tr>
<td>5</td>
<td>Design Quality and Accessibility</td>
</tr>
<tr>
<td>6</td>
<td>Experience Quality and Accessibility</td>
</tr>
<tr>
<td>7</td>
<td>Design Quality, Experience Quality, and Accessibility</td>
</tr>
</tbody>
</table>

Some examples of two-digit LINKS marketing positioning codes follow:
• A LINKS marketing positioning code of 81 is an exclusive benefit emphasis on design quality (service design quality), presumably related to particular distinctive design/configuration elements of importance to customers.
• A LINKS marketing positioning code of 24 is a "more-benefits-for-same-price" competitive positioning with "benefits" referencing design quality (service design quality) and experience quality (service operations quality).
• A LINKS marketing positioning code of 11 is a “more-benefits-for-more-price” competitive positioning with “benefits” referencing design quality (service design quality). This is a “more-benefits-for-more-price-but-worth-it” kind of marketing positioning.
• A LINKS marketing positioning code of 71 is an exclusive price emphasis, presumably referencing low price compared to competitive offerings.⁴

When marketing positioning changes, a variety of costs accrue to refresh and update all advertising, promotion, and sales force documents, materials, graphics, visuals, and media. In total, these marketing creative development costs equal the greater of $20,000 or 20% of marketing spending for a service in a market region. These marketing creative development costs are recorded as “Marketing Creative” costs on your firm’s profit-and-loss statements.

Introduction/Drop Decisions

You may introduce support services into market regions not currently active or cease to offer (drop) services in some market regions. Introduction incurs a one-time cost of $250,000 per region. Withdrawing (dropping) a service offering from a region incurs no special costs. Introduction costs are recorded under "Introductions" on your financial statements.

³ Exhibit 3 (Volume Drivers in LINKS) and Exhibit 4 (Accessibility Perception Drivers in LINKS) provide further details about the drivers of Design Quality, Experience Quality, and Accessibility.
⁴ If you choose an exclusive price emphasis for your competitive positioning (i.e., first digit of 7), then the second digit of the marketing positioning code (benefit proposition) is irrelevant.
If you wish to "activate" a support service in a market region, you must issue a specific introduction decision. Change the "Active Service?" status to "Yes" to introduce a support service into a specific market region. To drop a support service from active status in a market region, change its "Active Service?" status to "No."

You only introduce a support service into a market region once. **Once a support service is active in a market region, it continues to be active until you make an explicit withdrawal/drop ("No") decision.**

You must explicitly introduce a support service to a market region, regardless of your marketing spending and your sales volume forecasts. Setting marketing spending to zero does not result in the associated support service being dropped from that market region.

If you drop a support service from a market region, you must change marketing spending to $0. Otherwise, marketing spending continues to occur, in anticipation of a future relaunch.

**Your firm has a policy of limiting simultaneous new service-region launches to a maximum of three in any quarter.** So, for example, two services each launched (introduced) into one region in any quarter count as two launches. A reconfiguration isn't a launch if that service is already actively distributed in a region.

### Marketing Decisions Form

A blank "Marketing Decisions" form may be found on the next page. Complete this decision form during your team deliberations.
# Marketing Decisions

<table>
<thead>
<tr>
<th>Service 1</th>
<th>Region 1</th>
<th>Region 2</th>
<th>Region 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Service? {Yes</td>
<td>No}</td>
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<td></td>
</tr>
<tr>
<td>Price</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Marketing Spending</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing Mix Allocation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing Positioning</td>
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<td></td>
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</table>

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<thead>
<tr>
<th>Service 2</th>
<th>Region 1</th>
<th>Region 2</th>
<th>Region 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Service? {Yes</td>
<td>No}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing Spending</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing Mix Allocation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing Positioning</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Reminders

Only input changes. If you're happy with the current values of these decisions, leave the appropriate decision entries blank.

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Chapter 5: Forecasting Decisions

“Forecasting is like looking into a Kaleidoscope. The patterns are beautiful, but with a wrist flick, they change dramatically. The patterns all look clear today, but just a flick of fate, a competitor’s action, or a shift in customer preferences and everything changes.” – Claire Verweij, University of Michigan MBA (1995)

Service organizations are challenged to match demand and supply in a dynamic competitive marketplace. Consequently, sales forecasts are extremely important to effective management and business performance in service organizations. Forecasting accuracy requires an understanding of how a firm’s decisions influence sales. In LINKS, quarterly sales volume forecasts are required for each support service’s sales in every market region in which a support service is active.

Forecasting Accuracy

In LINKS, forecasting accuracy influences operations performance both directly (via adjustments in base administrative overhead for forecasting inaccuracies) and indirectly (via CSR capacity management considerations).

Administrative overhead costs increase by 1% for every 1% inaccuracy in your sales volume forecasts. For example, a forecast error of 10% (whether positive or negative) for a service in a region increases the administrative overhead costs for that service in that region by 10%.

- The maximum administrative overhead penalty associated with sales forecasting inaccuracy for each service in each region is a doubling of administrative overhead.
- Forecast error costs are recorded as “Forecast Inaccuracy” costs on your firm’s profit-and-loss statements, so the reported base administrative overhead costs are always $100,000 per quarter per service per region.

Forecasting accuracy is also one of the measures included in evaluating each firm’s business performance via the LINKS scorecard. See Chapter 10 for details of the LINKS scorecard.

Forecasting accuracy is equal to 100*(1-(abs(Forecast-Actual)/Actual)) expressed in percentage terms, where "abs" is the absolute value function. Thus, a forecast value of 11,000 and an actual value of 8,000 result in a forecast accuracy of 100*(1-abs(11,000-8,000)/8,000) = 100*(1-(3,000/8,000)) = 100*(1-0.375) = 62.5%. The minimum possible value of forecasting accuracy is 0.0%. For example, with an Actual sales volume of 8,000, a Forecast above 16,000 results in a forecasting accuracy score of 0.0%.

A Judgmental Sales Forecasting Template

The following page contains a judgmental sales forecasting worksheet that provides a template for systematically approaching the sales forecasting process. Judgmental adjustments are challenging, but at least you're explicitly taking into account that your and their (competitors') marketing (customer-facing) program changes influence your sales.
Judgmental Sales Forecasting Worksheet

Sales forecasting drives everything in demand-supply coordination and management. Unfortunately, sales forecasting is extraordinarily challenging due to the many factors influencing your sales (your current and recent marketing programs, current and recent competitors' marketing programs, and exogenous market forces).

Here's a judgmental sales forecasting process that, at a minimum, provides an organizational template to systematically approach the sales forecasting process. Judgmental adjustments are challenging, but at least you're explicitly taking into account that your marketing (customer-facing) program changes, and those of your competitors, influence your sales.

- **Step 1** (the "easy" part): Construct a trend-line extrapolation of past sales realizations based on a crucial assumption: future market and environmental forces will continue as they have existed in the recent past. Be watchful for structural considerations like unfilled orders.
- **Step 2** (the "hard" part): Make adjustments for planned changes in your marketing (customer-facing) programs. The potential impacts of changes in service design, price, communications, and service operations on your sales must be quantified.
- **Step 3** (the "subtle" part): Account for foreseeable competitors' changes in their marketing (customer-facing) programs. It's easy to overlook competitors in forecasting. Assume that competitors are vigilant and thoughtful and present.

<table>
<thead>
<tr>
<th></th>
<th>Trend-Line Extrapolation of Past Sales Realizations (Base-Line Forecast)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Adjustments For Planned Changes In Marketing Program</strong> (list specifics, with judgmental estimates of sales impacts [expressed in +/- %s])</td>
</tr>
<tr>
<td></td>
<td>Service Design Changes</td>
</tr>
<tr>
<td></td>
<td>Price Changes</td>
</tr>
<tr>
<td></td>
<td>Communications Changes</td>
</tr>
<tr>
<td></td>
<td>Service Operations Changes</td>
</tr>
<tr>
<td></td>
<td><strong>Adjusted Sales Forecast</strong></td>
</tr>
<tr>
<td>2</td>
<td><strong>Adjustments For Foreseeable Changes In Competitors' Marketing Programs</strong> (list specifics, with judgmental estimates of sales impacts [expressed in +/- %s])</td>
</tr>
<tr>
<td></td>
<td>Service Design Changes</td>
</tr>
<tr>
<td></td>
<td>Price Changes</td>
</tr>
<tr>
<td></td>
<td>Communications Changes</td>
</tr>
<tr>
<td></td>
<td>Service Operations Changes</td>
</tr>
</tbody>
</table>
About Forecasting and Forecasting Accuracy

Given the importance of forecasting in running your LINKS business, you might find that reading the following article has a positive return on your reading-time investment:

  
  http://www.forecastingprinciples.com/paperpdf/The_Forecasting_Canon.pdf

Forecasting Decisions Form

"Predicting rain doesn't count; building arks does." – Warren Buffett

A blank "Forecasting Decisions" form may be found on the following page. Complete this decision form during your team deliberations.
### Forecasting Decisions

**Short-Term (i.e., Next Quarter) Sales Volume Forecasts**

<table>
<thead>
<tr>
<th>Service</th>
<th>Region 1</th>
<th>Region 2</th>
<th>Region 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service 2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reminders**

Only input changes. If you're happy with the current values of these decisions, leave the appropriate decision entries blank.

All decision inputs change the existing values to the values that you specify. Do not enter "+" or "-" values. Rather, enter new values only (new values replace the existing value of the decision variable with your designated value).
Chapter 6: Information Technology Decisions

"Many of the most impactful ebusiness solutions are aimed at transforming less glamorous but extremely important processes like supply chain management, customer service and support, and distribution." – Louis V. Gerstner Jr., IBM CEO in Executive Excellence (October 1999)

Information technology (IT) options extend your firm’s current IT systems. Some IT options provide optional reports that can be made available to a firm. Other IT options are enhancements to existing hardware, software, systems, and infrastructure that entail a significant one-time expenditure to purchase/install a technology platform, as well as on-going expenses to operate the system in each subsequent quarter. The costs associated with your IT decisions are recorded on your "Corporate P&L Statement" under the heading "Information Technology."

In addition to the costs associated with the information technology (IT) options described in this chapter, your IT charges include a $1,000/page charge for all financial and operating reports. Each quarter’s charge is based on the previous quarter’s actual page counts (e.g., the quarter-32 charge is based on the quarter-31 page count).

Billing System Technology

Your firm may choose to purchase technology to support an improved billing system compared to the basic billing system in place as you and your team assume managerial control of your LINKS firm at the end of Quarter #3. An ideal billing system produces accurate bills that are easy for customers to understand, and also provides CSR support when they handle service requests or respond to billing-related questions.

Decision options and associated costs for this IT option are as follows:
- Decision Option “0”: Basic billing-system functionality with no associated incremental costs. Basic billing system costs are already included in your Corporate Overhead.
- Decision Option “1”: Enhanced billing-system functionality with associated one-time costs of $200,000 and on-going quarterly costs of $150,000/quarter.
- Decision Option “2”: Advanced billing-system functionality with associated one-time costs of $500,000 ($400,000 if the billing system is being converted from “enhanced functionality” to “advanced functionality”) and on-going quarterly costs of $225,000/quarter.

Enhanced and advanced billing-system functionality is thought by industry experts to increased design quality (service design quality) and experience quality (service operations quality) perceptions. However, the exact magnitude of the impacts on design quality (service design quality) and experience quality (service operations quality) has never been well documented. On the other hand, it is well accepted that such billing system improvements improve employee satisfaction by several percentage points on standard employee satisfaction surveys.
Industry-Wide CSR Employee Satisfaction Survey Participation

The Support Services Industry Trade Association conducts a regular, quarterly industry-wide CSR employee satisfaction survey. The results of this survey, Research Study #13 (“Employee Satisfaction”), are available for purchase by all industry members.

Your firm only has access to Research Study #13 (“Employee Satisfaction”) in any quarter that you choose to participate in that quarter’s industry-wide CSR employee satisfaction survey. Your firm may, of course, prefer to conduct your own internal CSR employee satisfaction survey, the results of which are only available to your firm.

Decision options and associated costs for this IT option are as follows:

- Decision Option “0”: Do not participate in this quarter’s industry-wide CSR employee satisfaction survey conducted by the Support Services Industry Trade Association. By declining to participate, your firm’s CSR employee satisfaction results this quarter are not reported in Research Study #13 (“Employee Satisfaction”) and your firm may not purchase Research Study #13 (“Employee Satisfaction”) this quarter.
- Decision Option “1”: For $1,000, your firm may participate in this quarter’s industry-wide CSR employee satisfaction survey conducted by the Support Services Industry Trade Association. Note that your firm’s participation in the regular, quarterly industry-wide CSR employee satisfaction survey doesn’t provide your firm with a research study report. Your firm must explicitly order Research Study #13 (“Employee Satisfaction”) if you wish to have industry-wide CSR employee satisfaction survey results.

Internal CSR Employee Satisfaction Survey

Firms may conduct their own internal CSR employee satisfaction survey in any quarter. Such a within-firm CSR employee satisfaction survey is proprietary to the sponsoring firm; the results are not shared with the Support Services Industry Trade Association.

This survey provides “top-box” service- and region-specific employee satisfaction results. CSR employees report current job satisfaction on four-point “poor”-“fair”-“good”-“excellent” rating scales and the reported “top-box” results reflect the percentage of survey respondents answering “excellent” on this four-point rating scale.

Decision options and associated costs for this IT option are as follows:

- Decision Option “0”: Do not conduct an internal CSR employee satisfaction survey.
- Decision Option “1”: For $10,000, conduct and report the results of an internal CSR employee satisfaction survey this quarter.

Internet-Delivered Ancillary Service

Your firm may invest in technology (hardware and software) to support Internet-delivered ancillary services to your customers. Your firm has a website, but additional funds are required if you wish to increase benefits to customers and leverage the productivity of your CSRs.

Three levels of Internet-delivered ancillary services are possible. Each service level is a subset of
the next higher service level.

- “Low-level” systems allow customers to view past bills online and download software.
- “Medium-level” systems enable customers to make simple service requests that are ultimately carried out by CSRs, as well as manage/change appointments for on-site visits. These systems are more expensive because they require dynamic updating of service operations records.
- “High-level” systems provide real-time, online access to employees who can help customers with their service requests. In the system support industry, high-level systems are called customer relationship management (CRM) systems because they provide an integrated way of managing how the customer interacts with service operations. Customers can move fluidly between CSR-supported services and technology-supported services.

Decision options and associated costs are as follows:

- Decision Option “0”: No internet-delivered ancillary service.
- Decision Option “1”: “Low-level” internet-delivered ancillary service (one-time development cost of $250,000 and on-going maintenance costs of $100,000/quarter).
- Decision Option “2”: “Medium-level” internet-delivered ancillary service (one-time development cost of $550,000 and on-going maintenance costs of $150,000/quarter).
- Decision Option “3”: “High-level” internet-delivered ancillary service (one-time development cost of $1,000,000 and on-going maintenance costs of $250,000/quarter).

In all cases, one-time development costs for a “level” are reduced by any previous one-time development costs incurred. For example, in moving from “low-level” to “high-level” Internet-Delivered Ancillary Service, the incremental one-time costs are $750,000.

Higher levels of internet-delivered ancillary services are thought by services management experts to increase service quality perceptions (service operations quality). Some experts think that indirect benefits to employee satisfaction also arise with internet-delivered ancillary services. Best available estimates are that “low-level,” “medium-level,” and “high-level” internet-delivered ancillary service improve service quality perceptions by 1%, 3%, and 6%, respectively.

### Telecommunications Systems Support

Your firm may choose to invest in telecommunications systems that directly support CSR service delivery. Such telecommunications systems can provide sophisticated call handling capabilities (efficiently distributing customer calls to CSRs at peak call volume periods) as well as automated voice response (AVR) for some simple, menu-driven customer requests.

You may choose telecommunications systems support in one or more of your market regions. There are separate telecommunications systems support IT decisions in each LINKS market region. When you first initiate telecommunications systems support in a region, you incur one-time charges of $100,000/region. On-going costs in each region are $25,000 in on-going maintenance costs plus $450/CSR in each subsequent quarter in which telecommunications systems support is active.

If engaged, telecommunications systems support applies to all CSRs assigned to all support services in a region. Telecommunications systems support has the potential to improve employee satisfaction, service quality perception, and customer satisfaction, although the precise magnitude of these improvements is unknown.
Information Technology Decision Form

"Debugging is twice as hard as writing the code in the first place. Therefore, if you write the code as cleverly as possible, you are, by definition, not smart enough to debug it." - Brian W. Kernighan

A blank "Information Technology Decisions" form may be found on the following page. Complete this decision form during your team deliberations.
## Information Technology Decisions

<table>
<thead>
<tr>
<th>Decision</th>
<th>Value(s)</th>
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<td>Industry-Wide CSR Employee Satisfaction Survey Participation?</td>
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<td>Internal CSR Employee Satisfaction Survey?</td>
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<td>Internet-Delivered Ancillary Service?</td>
<td>{0</td>
</tr>
<tr>
<td>Telecommunications Systems Support?</td>
<td>Region(s)?</td>
</tr>
</tbody>
</table>

**Note:** See the descriptions of these information technology options for the interpretation of each possible decision option.

### Reminders

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Chapter 7: Other Decisions

"A rose by any other name would smell as sweet." – William Shakespeare

Your firm may choose a firm name. Any firm name with up to 40 characters is acceptable. This firm name is printed on the top of all financial, operating, and research reports. Firm names have no cost or known demand-side implications, so you are free to choose (or change) your firm's name as you wish.

A blank "Other Decisions" form may be found on the following page. Complete this decision form during your team deliberations.
### Other Decisions

<table>
<thead>
<tr>
<th>Firm Name (max of 40 characters)</th>
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</thead>
</table>

### Reminders

Only input changes. If you're happy with the current values of these decisions, leave the appropriate decision entries blank.

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Chapter 8: Financial and Operating Reports

The LINKS financial and operating reports are described in this chapter. These are the standard reports that you receive after each quarter of the LINKS simulation.

Profitability Drivers

"A company can outperform rivals only if it can establish a difference that it can preserve. Competitive strategy is about being different, deliberately choosing a different set of activities to deliver a unique value mix." – Michael Porter

The financial and operating reports described in this chapter are lengthy and detailed. To provide an overall roadmap for thinking about the drivers of profitability, Exhibits 2-3 decompose net income into its underlying components. In Exhibit 2, the principal drivers of net income are revenues and costs. Taxes and non-operating income play lesser roles. Exhibit 3 provides a breakdown of the underlying drivers of volume, one of the two key drivers of revenues. In addition, Exhibit 4 provides a breakdown of the underlying drivers of accessibility perception. Collectively, these exhibits provide a sense of the DNA of net income in LINKS.

Performance Evaluation Report

"If you're riding ahead of the herd, take a look back every now and then to make sure it's still there." – Cowboy philosophy

Please consult Chapter 10 for a detailed discussion of the "Performance Evaluation Report" that forms the first page of your financial and operating reports.

Corporate P&L Statement

The "Corporate P&L Statement" aggregates all of the service-specific profit-and-loss statements into an overall corporate profit-and-loss statement. A variety of line items appear on the "Corporate P&L Statement" only, because it is not possible to unambiguously allocate those costs to specific services in specific regions.

Definitions of non-obvious line items on the "Corporate Current P&L Statement" follow:

- Administrative overhead ("Administrative O/H") is $100,000/quarter per service in all market regions.
- "Consulting Fees," adjustments to income or expenses, may be positive or negative. Conversations with your instructor are without charge, so don't worry about "Consulting Fees" associated with such consultations. In LINKS, the "Consulting Fees" line item represents a convenient mechanism for making adjustments to income or expenses. For example, a research billing problem can be corrected via an appropriate negative "Consulting Fee."
Exhibit 2: Net Income Drivers in LINKS

- Volume
- Price

> Revenues

- Variable Costs
- Fixed Costs

> Costs

> Net Income

Non-Operating Income

- Interest Rates
- Loans
- Marketable Securities

> Taxes
Exhibit 3: Volume Drivers in LINKS

Volume

Price
- Price Volatility (Over Time)

“Design Quality”
(Service Design Quality)
- Technical Training
- Service Skills Training
- Appointment Scheduling
- Scheduling Style
- Service Call Duration
- Service Call Format

“Experience Quality”
(Service Operations Quality)
- CSR Capacity and Usage
- CSR Compensation
- CSR Turnover
- CSR Employee Satisfaction
- Service Tangibles
- Support Service Technology

“Accessibility”

Unfilled Orders

Competitors’ Marketing Programs
- Exogenous Factors
  (Customers, Economy, Regulatory and Technology Environment)

Uncontrollables
Exhibit 4: “Accessibility” Perception Drivers in LINKS

Own Marketing Program
- Marketing Spending
- Marketing Mix Allocation
- Marketing Positioning

Competitors’ Marketing Programs

Fill Rate

“Awareness” Perception

“Accessibility” Perception

“Availability” Perception
Corporate overhead ("Corporate O/H") is $500,000 per support service per quarter. This per-service charge is incurred if a support service is active in one or more market regions.

"Forecast Inaccuracy" records the costs associated with forecasting errors.

"Information Technology" records all IT charges. Your IT charges include a $1,000/page charge for all financial and operating reports. This charge is per-firm and is not related to the number of members of your firm's management team. Each quarter's charge is based on the previous quarter's actual page counts (e.g., the quarter-32 charge is based on the quarter-31 page count).

"Introductions" reflects costs when services are introduced into market regions.

"Marketing" equals total marketing spending.

"Non-Operating Income" derives either from interest earned on "Marketable Securities" (from the previous quarter's "Balance Sheet") or from interest paid on "Loans" (from the previous quarter's "Balance Sheet").

"Operating Income" equals "Gross Margin" minus "Total Fixed Costs."

"Order Processing" records the $10/unit cost associated with processing all sales orders.

"Reconfiguration" equals the total costs associated with service design reconfigurations.

"Research Studies" reflects the total costs associated with last quarter's research study requests. Note that the current quarter's research studies are executed after the current quarter's financial reports are prepared. Thus, research study billings are lagged a quarter.

"Service Salaries" is the total salary cost associated with all CSRs.

"Service O/H" is the overhead cost levied on CSR salaries.

"Service Hire&Fire" costs are the service hiring and firing costs.

"Unfilled Handling" costs are the unfilled orders handling costs ($20/unit).

"Taxes" reflects corporate taxes payable. Your corporate tax rate is 50%.

"Total Fixed Costs" is the sum of all fixed costs. Note that "Total Fixed Costs" does not sum correctly down and across since some fixed costs are not allocated to specific services.

**Historical Corporate P&L Statement**

The "Historical Corporate P&L Statement" reports the previous and current quarter's corporate-level profit-and-loss data. In addition, all elements in the "Historical Corporate P&L Statement" are expressed in percentage-of-revenue terms.

**Service P&L Statement**

Each support service has a current profit-and-loss statement each quarter. The service "P&L Statement" includes the relevant data for all market regions.

**Balance Sheet**

Your balance sheet records the usual assets and liabilities associated with your firm at the end of each quarter.

On the "Balance Sheet":

- "Cash" in excess of 10% of revenues is automatically invested in short-term "Marketable Securities" which earn 1.5% per quarter in "Non-Operating Income" on the "Corporate P&L Statement".
Statement” in the following quarter. If cash falls below 5% of revenues, a loan is automatically arranged to increase cash to 5% of revenues. You pay interest of 3% per quarter on "Loans" and this interest payment is recorded as "Non-Operating Income" (a negative value of "Non-Operating Income") in the following quarter's "Corporate P&L Statement."

- "Corporate Capitalization" is the dollar-value of the original capital invested by your shareholders to start your firm.
- "Dividends" are cash payments to shareholders. In any quarter in which "Net Income" is positive, 30% of the "Net Income" is allocated to "Dividends."
- "Facilities and Equipment Investment" represents the dollar-value of your firm's investment in facilities and equipment.

You can't run out of cash within LINKS. As necessary, loans are automatically issued to bring your cash up to minimum requirements. Of course, you do have to pay interest on loans.

Whenever profits are positive, corporate policy is to allocate 30% of net income to dividends.

**Service Operations Report**

The “Service Operations Report” provides the details of your CSR staffing, productivity, and CSR management activities. These are “hard” (engineering and operations) metrics that provide insights into customer experiences and customer perceptions of service quality (reliability, responsiveness, assurance, and empathy). This report will undoubtedly be one of the most frequently-referenced reports among all of the LINKS financial and operating reports.

**Service Center Statistics Report**

“While many companies gather customer feedback and suggestions through focus groups and surveys, call centers capture customer input from a much broader customer base. At a typical call center, agents talk to thousands of customers every day and collect customer demographic information, purchasing preferences, complaints, suggestions, and competitive intelligence. This information can be used to spot trends.”

— Brad Cleveland, Chief Executive, Incoming Calls Management Institute, Annapolis MD

Current and potential customers interact with your firm’s call center to purchase support services, schedule service appointments, and to ask questions about all aspects of your firm’s support services. Your firm systematically tracks/counts callers’ questions.

The "Service Center Statistics Report" provides categorized service center call counts of callers’ questions for each of your firm’s services in each market region. Service center call counts are reported for these ten categories: billings, design configuration, design quality, first-time usage, introduction (service introductions to market regions), miscellaneous, service call duration, service experience, service scheduling, and unfilled orders. Where a single caller has several questions, the call is recorded in multiple categories. Thus, these “call counts” are really “question counts” rather than counts of caller calls.

Your firm outsources service center management to a reputable provider/vendor in each region in which your firm operates. Your firm pays your outsourced service center $6/call received. These costs are recorded as “Call Center Service” on your firm’s financial statements.
In the Excel results supplemental spreadsheet (accessible within the LINKS Simulation Database on the LINKS website), additional service center results are reported within the financial/operations results for the current quarter.

- A Service Center Statistics History Report follows immediately after the Service Center Statistics Report. Historical service center statistics (service center calls in each of the ten calling categories) are reported for each service and region for each of the last six quarters. This report permits convenient historical analysis of trends in service center calls.
- Sales volume for each service/region/quarter is included with the service center statistics and the service center statistics history (an additional row of data) to permit convenient data scaling. For example, dividing the raw service center calls data by sales volume expresses the service center calls in scale-adjusted “call per sales order” terms.

**Forecasting Accuracy Report**

The "Forecasting Accuracy Report" provides details of the forecasting accuracy associated with your short-term (next-quarter) sales volume forecasts. In addition, the sales history for all of your firm's services (sales by support service and region) for the last six quarters is displayed at the end of this report.

Forecasting accuracy is equal to $100 \times (1 - \text{abs}(\text{Forecast} - \text{Actual}) / \text{Actual})$ expressed in percentage terms, where "abs" is the absolute value function. Thus, a forecast value of 11,000 and an actual value of 8,000 results in a forecast accuracy of $100 \times (1 - \text{abs}(11,000 - 8,000) / 8,000) = 100 \times (1 - 3,000/8,000)) = 100 \times (1 - 0.375) = 62.5\%$. The minimum possible value of forecasting accuracy is 0.0%. For example, with an Actual sales volume of 8,000, a Forecast above 16,000 results in a forecasting accuracy score of 0.0%.

**Sample Reports**

"The meaning of life is to do the best you can with what you've got." – Anonymous

The following pages provide samples of the standard LINKS financial and operating reports. In addition to these reports, you'll receive the results of any research studies that you order on additional pages after the last page of your financial and operating reports.

These samples are provided to familiarize you with the style and format of the reports that are provided to your firm after each LINKS round. The data reported in these sample reports are only illustrative of reports formatting. These data aren't specific to your particular LINKS industry. Please do not interpret these samples as suggested guidelines or benchmarks for good decisions and performance within LINKS.
### For Your Information

You receive the LINKS scorecard (shown above) automatically each quarter as the first page of your financial and operating reports. This scorecard provides comparatives to assess how your firm's data compares to the industry averages and industry bests on every Key Performance Indicator (KPI).

Historical plots of all KPIs are provided in your firm's supplementary results Excel spreadsheet ("KPIcharts" worksheet), accessible within the LINKS Simulation Database on the LINKS website. Data from the past six quarters are displayed, to the extent available in your industry's historical archives, to create quarter-by-quarter plots for each of the LINKS performance evaluation metrics (KPIs) compared to the relevant quarter-specific industry best, industry average, and industry worst for your LINKS industry.
<table>
<thead>
<tr>
<th></th>
<th>All Services</th>
<th>Service 3-1</th>
<th>Service 3-2</th>
</tr>
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<tbody>
<tr>
<td><strong>Sales Volume</strong></td>
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<td>57,762</td>
<td>37,972</td>
</tr>
<tr>
<td><strong>Unfilled Orders</strong></td>
<td>0</td>
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<td>0</td>
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<tr>
<td><strong>Price</strong></td>
<td>239</td>
<td>150</td>
<td>375</td>
</tr>
<tr>
<td><strong>Revenues</strong></td>
<td>22,903,800</td>
<td>8,664,300</td>
<td>14,239,500</td>
</tr>
<tr>
<td>- <strong>Variable Costs</strong></td>
<td>4,025,341</td>
<td>1,386,288</td>
<td>2,639,053</td>
</tr>
<tr>
<td>- <strong>Order Processing</strong></td>
<td>957,340</td>
<td>577,620</td>
<td>379,720</td>
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<tr>
<td></td>
<td>--------------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>Gross Margin</strong></td>
<td>17,921,119</td>
<td>6,700,392</td>
<td>11,220,727</td>
</tr>
<tr>
<td><strong>Fixed &amp; Other Costs:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative O/H</td>
<td>600,000</td>
<td>300,000</td>
<td>300,000</td>
</tr>
<tr>
<td>Call Center Service</td>
<td>694,776</td>
<td>464,172</td>
<td>230,604</td>
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<tr>
<td>Consulting Fees</td>
<td>-300,000</td>
<td></td>
<td></td>
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<tr>
<td>Corporate O/H</td>
<td>1,000,000</td>
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<tr>
<td>Forecast Inaccuracy</td>
<td>104,179</td>
<td>49,517</td>
<td>54,662</td>
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<tr>
<td>Information Technology</td>
<td>17,000</td>
<td></td>
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<tr>
<td>Introductions</td>
<td>0</td>
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<tr>
<td>Marketing</td>
<td>2,400,000</td>
<td>1,200,000</td>
<td>1,200,000</td>
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<tr>
<td>Marketing Creative</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Price Changes</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Reconfiguration</td>
<td>0</td>
<td></td>
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<tr>
<td>Research Studies</td>
<td>0</td>
<td></td>
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<tr>
<td>Service Salaries</td>
<td>2,826,000</td>
<td>1,439,010</td>
<td>1,386,990</td>
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<tr>
<td>Service O/H</td>
<td>2,826,000</td>
<td>1,439,010</td>
<td>1,386,990</td>
</tr>
<tr>
<td>Service Hire&amp;Fire</td>
<td>162,000</td>
<td>63,180</td>
<td>98,820</td>
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<tr>
<td>Unfilled Handling</td>
<td>0</td>
<td></td>
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<tr>
<td><strong>Total Fixed &amp; Other</strong></td>
<td>10,329,955</td>
<td>4,954,889</td>
<td>4,658,066</td>
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<td></td>
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<td>-------------</td>
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<tr>
<td><strong>Operating Income</strong></td>
<td>7,591,164</td>
<td>1,745,503</td>
<td>6,562,661</td>
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<tr>
<td></td>
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<tr>
<td><strong>Non-Operating Income</strong></td>
<td>121,434</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Taxes</strong></td>
<td>-3,856,299</td>
<td></td>
<td></td>
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<tr>
<td><strong>Net Income</strong></td>
<td>3,856,299</td>
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<td></td>
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**FIRM 3: ??????????????????????????????????????????????????? INDUSTRY SMK**

**HISTORICAL CORPORATE P&L STATEMENT, QUARTER 6**

<table>
<thead>
<tr>
<th></th>
<th>Previous (Quarter 5)</th>
<th>Current (Quarter 6)</th>
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<tbody>
<tr>
<td><strong>Sales Volume</strong></td>
<td>99,611</td>
<td>95,734</td>
</tr>
<tr>
<td><strong>Unfilled Orders</strong></td>
<td>0</td>
<td>0</td>
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<tr>
<td><strong>Price</strong></td>
<td>243</td>
<td>239</td>
</tr>
<tr>
<td><strong>Revenues</strong></td>
<td>24,291,750 100.0%</td>
<td>22,903,800 100.0%</td>
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<tr>
<td>- <strong>Variable Costs</strong></td>
<td>4,281,461 17.6%</td>
<td>4,025,341 17.6%</td>
</tr>
<tr>
<td>- <strong>Order Processing</strong></td>
<td>996,110 4.1%</td>
<td>957,340 4.2%</td>
</tr>
<tr>
<td><strong>Gross Margin</strong></td>
<td>19,014,179 78.3%</td>
<td>17,921,119 78.2%</td>
</tr>
</tbody>
</table>

**Fixed & Other Costs:**

<table>
<thead>
<tr>
<th></th>
<th>Previous</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative O/H</td>
<td>600,000  2.5%</td>
<td>600,000  2.6%</td>
</tr>
<tr>
<td>Call Center Service</td>
<td>698,238  2.9%</td>
<td>694,776  3.0%</td>
</tr>
<tr>
<td>Consulting Fees</td>
<td>-300,000 -1.2%</td>
<td>-300,000 -1.3%</td>
</tr>
<tr>
<td>Corporate O/H</td>
<td>1,000,000 4.1%</td>
<td>1,000,000 4.4%</td>
</tr>
<tr>
<td>Forecast Inaccuracy</td>
<td>129,294  0.5%</td>
<td>104,179  0.5%</td>
</tr>
<tr>
<td>Information Technology</td>
<td>17,000  0.1%</td>
<td>17,000  0.1%</td>
</tr>
<tr>
<td>Introductions</td>
<td>0         0.0%</td>
<td>0         0.0%</td>
</tr>
<tr>
<td>Marketing</td>
<td>2,400,000 9.9%</td>
<td>2,400,000 10.5%</td>
</tr>
<tr>
<td>Marketing Creative</td>
<td>0         0.0%</td>
<td>0         0.0%</td>
</tr>
<tr>
<td>Price Changes</td>
<td>0         0.0%</td>
<td>0         0.0%</td>
</tr>
<tr>
<td>Reconfiguration</td>
<td>0         0.0%</td>
<td>0         0.0%</td>
</tr>
<tr>
<td>Research Studies</td>
<td>0         0.0%</td>
<td>0         0.0%</td>
</tr>
<tr>
<td>Service Salaries</td>
<td>2,844,000 11.7%</td>
<td>2,826,000 12.3%</td>
</tr>
<tr>
<td>Service O/H</td>
<td>2,844,000 11.7%</td>
<td>2,826,000 12.3%</td>
</tr>
<tr>
<td>Service Hire&amp;Fire</td>
<td>162,000  0.7%</td>
<td>162,000  0.7%</td>
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<tr>
<td>Unfilled Handling</td>
<td>0         0.0%</td>
<td>0         0.0%</td>
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<tr>
<td><strong>Total Fixed &amp; Other</strong></td>
<td>10,394,532 42.8%</td>
<td>10,329,955 45.1%</td>
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**Operating Income**

<table>
<thead>
<tr>
<th></th>
<th>Previous</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8,619,647 35.5%</td>
<td>7,591,164 33.1%</td>
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</table>

**Non-Operating Income**

<table>
<thead>
<tr>
<th></th>
<th>Previous</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>76,774 0.3%</td>
<td>121,434 0.5%</td>
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**Taxes**

<table>
<thead>
<tr>
<th></th>
<th>Previous</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-4,348,210 -17.9%</td>
<td>-3,856,299 -16.8%</td>
</tr>
</tbody>
</table>

**Net Income**

<table>
<thead>
<tr>
<th></th>
<th>Previous</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4,348,211 17.9%</td>
<td>3,856,299 16.8%</td>
</tr>
</tbody>
</table>
### FIRM 3: INDUSTRY SMK

**SERVICE 3-1 P&L STATEMENT, QUARTER 6**

---

<table>
<thead>
<tr>
<th></th>
<th>All Regions (TOTAL)</th>
<th>Region 1 (Central)</th>
<th>Region 2 (North)</th>
<th>Region 3 (East)</th>
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<tbody>
<tr>
<td>Active?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sales Volume</td>
<td>57,762</td>
<td>19,015</td>
<td>13,119</td>
<td>25,628</td>
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<tr>
<td>Unfilled Orders</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Price</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Revenues</td>
<td>8,664,300</td>
<td>2,852,250</td>
<td>1,967,850</td>
<td>3,844,200</td>
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<tr>
<td>- Variable Costs</td>
<td>1,386,288</td>
<td>456,360</td>
<td>314,856</td>
<td>615,072</td>
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<tr>
<td>- Order Processing</td>
<td>577,620</td>
<td>190,150</td>
<td>131,190</td>
<td>256,280</td>
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<tr>
<td>Gross Margin</td>
<td>6,700,392</td>
<td>2,205,740</td>
<td>1,521,804</td>
<td>2,972,848</td>
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<tr>
<td>Fixed Costs:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative O/H</td>
<td>300,000</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Call Center Service</td>
<td>464,172</td>
<td>149,922</td>
<td>103,506</td>
<td>210,744</td>
</tr>
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<td>Forecast Inaccuracy</td>
<td>49,517</td>
<td>13,852</td>
<td>10,724</td>
<td>24,941</td>
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<td>Marketing</td>
<td>1,200,000</td>
<td>400,000</td>
<td>400,000</td>
<td>400,000</td>
</tr>
<tr>
<td>Marketing Creative</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Price Changes</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Service Salaries</td>
<td>1,439,010</td>
<td>445,770</td>
<td>312,840</td>
<td>680,400</td>
</tr>
<tr>
<td>Service O/H</td>
<td>1,439,010</td>
<td>445,770</td>
<td>312,840</td>
<td>680,400</td>
</tr>
<tr>
<td>Service Hire&amp;Fire</td>
<td>63,180</td>
<td>63,180</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Fixed Costs</td>
<td>4,954,889</td>
<td>1,618,494</td>
<td>1,239,910</td>
<td>2,096,485</td>
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<tr>
<td>Operating Income</td>
<td>1,745,503</td>
<td>587,246</td>
<td>281,894</td>
<td>876,363</td>
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</tbody>
</table>

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**Sales Volume Forecast**

<p>| | | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>16,381</td>
<td>11,712</td>
<td>19,236</td>
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</tbody>
</table>

**Service:**

- CSR Salary $/Month: 3,000
- CSR Hiring&Firing: 27
- CSR Maximum Capacity Limit: 95
- CSR Time Allocation: 39

**Marketing Mix Allocation**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>403030</td>
<td>403030</td>
<td>403030</td>
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**Marketing Positioning**

<p>| | | | |</p>
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</thead>
<tbody>
<tr>
<td></td>
<td>37</td>
<td>37</td>
<td>37</td>
</tr>
</tbody>
</table>

**Service 1-1 Configuration:** H446320

---

**For Your Information**

The standard LINKS quarterly reports include separate P&L statements for each of your support services. In this sample display, only the report for service 1 is included.
FIRM 3: ??????????????????????????????????????????????????????????????? INDUSTRY SMK
BALANCE SHEET, QUARTER 6
PAGE 6

ASSETS
-------
Cash 1,772,795
Marketable Securities 8,697,216
Facilities and Equipment Investment 50,000,000
Total Assets 60,470,011

LIABILITIES AND EQUITIES
------------------------
Corporate Capitalization 50,000,000
Dividends, Current Quarter -854,748
Dividends, Cumulative Prior To This Quarter -3,632,395
Loans 0
Retained Earnings, Current Quarter 2,849,163
Retained Earnings, Cumulative Prior To This Quarter 12,107,991
Total Liabilities and Equities 60,470,011

FIRM 3: ??????????????????????????????????????????????????????????????? INDUSTRY SMK
SERVICE VARIABLE COST REPORT, QUARTER 6
PAGE 6

<table>
<thead>
<tr>
<th>Service Category</th>
<th>Service 3-1</th>
<th>Service 3-2</th>
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<tbody>
<tr>
<td>Support Service Category</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>CSR Technical Training</td>
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<tr>
<td>CSR Service Skills Training</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Service Appointment Scheduling</td>
<td>0.25</td>
<td>12.50</td>
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<tr>
<td>Scheduling Style</td>
<td>0.00</td>
<td>12.00</td>
</tr>
<tr>
<td>Service Call Duration</td>
<td>10.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Service Call Format</td>
<td>10.00</td>
<td>20.00</td>
</tr>
<tr>
<td>Total</td>
<td>20.25</td>
<td>49.50</td>
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</table>
**STAFFING REPORT**

- Beginning CSRs: 277, 127, 42, 108
- CSR Resignations: 26, 9, 3, 14
- CSR Firing: 0, 0, 0, 0
- CSR Hiring: 26, 18, 0, 8
- Available CSRs: 277, 136, 39, 102

**PRODUCTIVITY REPORT**

**SERVICE 1-1 [H446320]**

<table>
<thead>
<tr>
<th>Net CSR Productivity</th>
<th>CSRs</th>
<th>Hires Productivity</th>
<th>Hires</th>
<th>Time Allocation</th>
<th>Potential CSR Capacity</th>
<th>Actual CSR Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>528.0 528.0 528.0</td>
<td>118</td>
<td>39</td>
<td>0</td>
<td>40%</td>
<td>23,754 7,482 29,495</td>
<td>22,091 7,107 26,840</td>
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</tbody>
</table>

**SERVICE 1-2 [M663131]**

<table>
<thead>
<tr>
<th>Net CSR Productivity</th>
<th>CSRs</th>
<th>Hires Productivity</th>
<th>Hires</th>
<th>Time Allocation</th>
<th>Potential CSR Capacity</th>
<th>Actual CSR Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>528.0 528.0 528.0</td>
<td>118</td>
<td>39</td>
<td>0</td>
<td>40%</td>
<td>23,055 6,685 10,276</td>
<td>21,441 6,350 9,351</td>
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</table>
ACTIVITY REPORT

SERVICE 1-1
Service Calls  48,902  18,605  5,242  25,055
CSR Capacity   60,731  23,754  7,482  29,495
CSR Utilization [Q#18] 78% 70% 85%
CSR Utilization [Q#17] 78% 85% 83%
CSR Cost/Call    54.40  55.76  62.59  51.68
CSR Turnover 2% 6% 16%

SERVICE 1-2
Service Calls  34,909  21,133  6,350  7,426
CSR Capacity   40,016  23,055  6,685 10,276
CSR Utilization [Q#18] 92% 95% 72%
CSR Utilization [Q#17] 93% 94% 71%
CSR Cost/Call    77.53  73.63  71.35  93.89
CSR Turnover 11% 8% 8%
FIRM 3:  AAA Support Services

SERVICE CENTER STATISTICS REPORT, QUARTER 8

*****************************************************************************

<table>
<thead>
<tr>
<th></th>
<th>All Regions</th>
<th>Region 1</th>
<th>Region 2</th>
<th>Region 3</th>
</tr>
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<tbody>
<tr>
<td>SERVICE 1-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Billings</td>
<td>3,743</td>
<td>1,381</td>
<td>836</td>
<td>1,526</td>
</tr>
<tr>
<td>Design Configuration</td>
<td>3,772</td>
<td>1,172</td>
<td>845</td>
<td>1,755</td>
</tr>
<tr>
<td>Design Quality</td>
<td>16,351</td>
<td>5,588</td>
<td>3,388</td>
<td>7,375</td>
</tr>
<tr>
<td>First-Time Usage</td>
<td>8,823</td>
<td>2,903</td>
<td>2,081</td>
<td>3,839</td>
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<td>Introduction</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>7,708</td>
<td>2,859</td>
<td>1,584</td>
<td>3,265</td>
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<tr>
<td>Service Call Duration</td>
<td>3,547</td>
<td>1,142</td>
<td>766</td>
<td>1,639</td>
</tr>
<tr>
<td>Service Experience</td>
<td>8,414</td>
<td>1,978</td>
<td>3,078</td>
<td>3,358</td>
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<td>Service Scheduling</td>
<td>31,840</td>
<td>11,166</td>
<td>7,596</td>
<td>13,078</td>
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<tr>
<td>Unfilled Orders</td>
<td>832</td>
<td>0</td>
<td>636</td>
<td>196</td>
</tr>
</tbody>
</table>

|                      |             |          |          |          |
| SERVICE 1-2          |             |          |          |          |
| Billings             | 2,587       | 1,156    | 841      | 590      |
| Design Configuration | 2,422       | 1,075    | 845      | 502      |
| Design Quality       | 9,378       | 4,432    | 3,114    | 1,832    |
| First-Time Usage     | 5,758       | 2,623    | 2,008    | 1,127    |
| Introduction         | 0           | 0        | 0        | 0        |
| Miscellaneous        | 5,705       | 2,485    | 1,966    | 1,254    |
| Service Call Duration| 1,247       | 603      | 401      | 243      |
| Service Experience   | 6,929       | 2,157    | 3,034    | 1,738    |
| Service Scheduling   | 8,905       | 4,163    | 2,906    | 1,836    |
| Unfilled Orders      | 832         | 0        | 636      | 196      |

ALL SERVICES

|                      |             |          |          |          |
| Billings             | 6,330       | 2,537    | 1,677    | 2,116    |
| Design Configuration | 6,194       | 2,247    | 1,690    | 2,257    |
| Design Quality       | 25,729      | 10,020   | 6,502    | 9,207    |
| First-Time Usage     | 14,581      | 5,526    | 4,089    | 4,966    |
| Introduction         | 0           | 0        | 0        | 0        |
| Miscellaneous        | 13,413      | 5,344    | 3,550    | 4,519    |
| Service Call Duration| 4,794       | 1,745    | 1,167    | 1,882    |
| Service Experience   | 15,343      | 4,135    | 6,112    | 5,096    |
| Service Scheduling   | 40,745      | 15,329   | 10,502   | 14,914   |
| Unfilled Orders      | 1,433       | 425      | 812      | 196      |

... Total ... 128,562
FIRM 3: Worldwide Support Services Unlimited
INDUSTRY IMC
FORECASTING ACCURACY REPORT, QUARTER 1

<table>
<thead>
<tr>
<th>Region</th>
<th>Forecast</th>
<th>Actual</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service 3-1</td>
<td>1</td>
<td>16,452</td>
<td>17,731</td>
</tr>
<tr>
<td>Service 3-1</td>
<td>2</td>
<td>11,840</td>
<td>12,203</td>
</tr>
<tr>
<td>Service 3-1</td>
<td>3</td>
<td>19,277</td>
<td>22,301</td>
</tr>
<tr>
<td>Service 3-2</td>
<td>1</td>
<td>12,904</td>
<td>15,016</td>
</tr>
<tr>
<td>Service 3-2</td>
<td>2</td>
<td>9,811</td>
<td>10,383</td>
</tr>
<tr>
<td>Service 3-2</td>
<td>3</td>
<td>6,805</td>
<td>8,675</td>
</tr>
</tbody>
</table>

SUMMARY: For 6 forecasts, average forecasting accuracy is 89.2%

Note: Forecasts count within the calculation of forecasting accuracy only if the "actual" value being forecast is greater than 100 for sales volumes (to not penalize you for "small" forecasts). Otherwise, the relevant values of "forecast" and "actual" are only reported for reference purposes, but such forecasts are not counted for forecasting accuracy scoring. This is the reason why the number of forecasts referenced in "SUMMARY" may be less than the detailed line-by-line reporting of forecasts.

SALES HISTORY

<table>
<thead>
<tr>
<th>Region</th>
<th>Quarter 11</th>
<th>Quarter 12</th>
<th>Quarter 13</th>
<th>Quarter 14</th>
<th>Quarter 15</th>
<th>Quarter 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGION 1</td>
<td>Service 3-1H</td>
<td>16,452</td>
<td>16,305</td>
<td>20,604</td>
<td>16,171</td>
<td>16,582</td>
</tr>
<tr>
<td>Service 3-2M</td>
<td>12,904</td>
<td>15,040</td>
<td>14,561</td>
<td>12,826</td>
<td>17,143</td>
<td>15,016</td>
</tr>
<tr>
<td>REGION 2</td>
<td>Service 3-1H</td>
<td>11,840</td>
<td>12,485</td>
<td>11,957</td>
<td>11,952</td>
<td>11,970</td>
</tr>
<tr>
<td>Service 3-2M</td>
<td>9,811</td>
<td>11,527</td>
<td>11,246</td>
<td>9,791</td>
<td>10,071</td>
<td>10,383</td>
</tr>
<tr>
<td>REGION 3</td>
<td>Service 3-1H</td>
<td>19,277</td>
<td>23,861</td>
<td>27,637</td>
<td>24,909</td>
<td>25,848</td>
</tr>
<tr>
<td>Service 3-2M</td>
<td>6,805</td>
<td>8,593</td>
<td>9,642</td>
<td>7,744</td>
<td>8,690</td>
<td>8,675</td>
</tr>
</tbody>
</table>
Chapter 9: Research Studies

"Research is the process of going up alleys to see if they are blind." - Marston Bates

This chapter describes the research studies that are available in the LINKS Services Marketing Simulation. These research studies provide information about competitors and about your firm, competing firms, and about the support services industry and markets. These research studies are typical of the kinds of research resources that exist in service industries, and the associated costs are typical of the approximate magnitude of the costs associated with such research studies in "real" industries. However, there's no reason to believe that every one of these research studies is appropriate and useful at all times or worth the associated costs. You'll have to decide whether these research studies are worth their stated costs.

Research studies requests are submitted along with your other decision variable changes. Although LINKS research studies are ordered prior to the beginning of the next quarter, research studies are executed during and after the next quarter, as appropriate. Thus, research studies reports always reflect the just-completed quarter's experience.

An overview of the available LINKS research study resources is provided in Exhibit 5.

In the following research study descriptions, sample output illustrates the style and formatting of research study output. These samples are only for illustrative purposes. The output should not be viewed as providing any specific insight into your particular support services industry.

Research Studies Strategy

"Time spent in reconnaissance is seldom wasted." – Sun Tzu, 4BC

Which research studies should you purchase? When should you purchase these research studies? Two snappy but uninformative responses would be "purchase exactly the research studies that you need and no others" and "it depends." Unfortunately, these responses are not very constructive counsel. Heavy-duty anticipatory thinking is needed before deciding on research study purchases.

Bruce Henderson, noted strategist, author, and management consultant, offers the following insightful process-based suggestion for conducting research: "Define the problem and hypothesize the approach to a solution intuitively before wasting time on data collection and analysis. Do the first analysis lightly. Then, and only then, redefine the problem more rigorously and reanalyze in depth. Don't go to the library and read all the books before you know what you want to learn." The problem "reanalysis" stage is particularly relevant since that is where research studies may play a role, once you have determined that the information provided in the research may provide useful insight into the problem.
Exhibit 5: Overview of LINKS Research Studies

<table>
<thead>
<tr>
<th>#</th>
<th>Research Study</th>
<th>Cost</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Benchmarking - Earnings</td>
<td>$500</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Benchmarking - Service Design</td>
<td>$500 per service</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Benchmarking - Service (CSR Usage)</td>
<td>$5,000</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Benchmarking - Marketing</td>
<td>$5,000</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Benchmarking - Info Tech &amp; Research Studies</td>
<td>$1,000</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Benchmarking - Operating Statistics</td>
<td>$2,500</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Market Statistics</td>
<td>$2,500</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Employee Satisfaction</td>
<td>$15,000</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Regional Summary Analysis</td>
<td>$5,000 per region</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Experience Quality Perceptions</td>
<td>$10,000</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Customer Satisfaction</td>
<td>$10,000</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Concept Test</td>
<td>$15,000 per concept per region</td>
<td>8</td>
</tr>
<tr>
<td>24</td>
<td>Price Sensitivity Analysis</td>
<td>$20,000 per service per region</td>
<td>4</td>
</tr>
<tr>
<td>26</td>
<td>Importance-Performance Analysis</td>
<td>$7,500 per region</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Marketing Program Benchmarking</td>
<td>$500 per category per region plus $500 per active service in each category and region</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Marketing Program Experiment</td>
<td>$12,500 per experiment</td>
<td>7</td>
</tr>
<tr>
<td>31</td>
<td>Self-Reported Preferences</td>
<td>$20,000</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Accessibility Perception Drivers</td>
<td>$20,000</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Retention Statistics</td>
<td>$10,000</td>
<td></td>
</tr>
</tbody>
</table>

In thinking about research studies strategy and tactics, some generalizations are possible:

- Excellent strategy can only be developed based on excellent analysis. Since research provides the raw data for excellent analysis, research should be an important component of your LINKS decision-making process. Do not relegate your research studies pre-ordering decisions to the last five minutes of team meetings. Rather, treat research studies ordering decisions as a fundamental part of your whole LINKS decision-making process.
- Plan ahead. To identify patterns and trends, you will probably need to order some research studies on a more-or-less regular basis. A formal research studies plan should be a part of your management planning process.
- Systematize the post-analysis of research studies. This might involve, for example, the continual updating of databases, charts, or graphs to reformat the raw LINKS research studies.
results into more meaningful and useful forms.

- Share insights derived from particular research studies with all of your team members. These may require research studies' "experts" to assume coaching roles with research studies "novices." This is a natural state of affairs. Given the complexity of LINKS, it is not possible to be an "expert" on everything.

### Research Study #1: Benchmarking - Earnings

"Every accomplishment starts with the decision to try." – Anonymous

**Purpose:** This research study provides earnings benchmarks for your industry. The current-quarter earnings, cumulative-to-date earnings, and current-quarter dividends of each firm in your industry are reported. In addition, a variety of financial market statistics are reported.

**Information Source:** These data are based on public information.

**Cost:** $500.

<table>
<thead>
<tr>
<th>Firm 1</th>
<th>Firm 2</th>
<th>Firm 3</th>
<th>Firm 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumulative Net Income</td>
<td>5,788,265</td>
<td>6,234,171</td>
<td>5,788,265</td>
</tr>
<tr>
<td>Current Dividends</td>
<td>892,287</td>
<td>1,041,738</td>
<td>892,287</td>
</tr>
</tbody>
</table>

**Financial Market Statistics**

- Stock Price: 120.00, 131.80, 117.63, 123.96
- Shares: 2.0M, 2.0M, 2.0M, 2.0M
- EPS: 1.49, 1.74, 1.44, 1.57
- DPS: .45, .52, .43, .47

### Research Study #3: Benchmarking - Service Design

**Purpose:** Current configurations are reported for all services actively sold in at least one region. The last quarter in which each service was reconfigured is reported, with quarter "0" referencing reconfigurations which occurred prior to quarter 1.

**Information Source:** These research study results are based on reverse engineering efforts by your research supplier and on information sharing arrangements administered by the Support Services Industry Trade Association.

**Cost:** $500 per competitor service.
Research Study #8: Benchmarking - Service (CSR Usage)

**Purpose:** This research study provides service benchmarks in the forms of CSR usage rates (utilization) for each of the last four quarters are reported by service and region.

**Information Source:** This research study is based on information sharing and pooling agreements administered by the Support Services Industry Trade Association.

**Cost:** $5,000.

<table>
<thead>
<tr>
<th>REGION 1</th>
<th>Quarter 93</th>
<th>Quarter 94</th>
<th>Quarter 95</th>
<th>Quarter 96</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service 1-1H</td>
<td>61</td>
<td>70</td>
<td>80</td>
<td>73</td>
</tr>
<tr>
<td>Service 1-2M</td>
<td>61</td>
<td>56</td>
<td>65</td>
<td>62</td>
</tr>
<tr>
<td>Service 2-2M</td>
<td>66</td>
<td>71</td>
<td>67</td>
<td>69</td>
</tr>
</tbody>
</table>

---

Research Study #9: Benchmarking - Marketing

**Purpose:** This research study provides marketing benchmarks for your industry. Price and marketing statistics (minimum, average, and maximum) for each service category and market region are provided for each of the last four quarters.

**Information Source:** This research study is based on information sharing and pooling agreements administered by the Support Services Industry Trade Association.

**Cost:** $5,000.

<table>
<thead>
<tr>
<th>REGION 1</th>
<th>Quarter 55</th>
<th>Quarter 56</th>
<th>Quarter 57</th>
<th>Quarter 58</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUSEHOLD</td>
<td>435 520 657</td>
<td>431 554 689</td>
<td>437 542 662</td>
<td>429 542 662</td>
</tr>
<tr>
<td>Mktg [$$K]</td>
<td>100 161 300</td>
<td>0 183 300</td>
<td>0 157 300</td>
<td>0 181 326</td>
</tr>
<tr>
<td>REGION 1</td>
<td>465 515 603</td>
<td>477 573 692</td>
<td>489 594 687</td>
<td>579 676 839</td>
</tr>
<tr>
<td>Mktg [$$K]</td>
<td>100 130 200</td>
<td>94 138 200</td>
<td>100 149 200</td>
<td>100 157 218</td>
</tr>
</tbody>
</table>
Research Study #10: Benchmarking - Info Tech & Research Studies

**Purpose:** This research study provides information technology and research studies ordering benchmarks for your industry.

**Information Source:** This research study is based on information sharing and pooling agreements administered by the Support Services Industry Trade Association.

**Cost:** $1,000.

**Additional Information:** The research study ordering frequencies are based on the last two quarters, to the extent that such historical data are available in the archives for your industry. Only research studies with non-zero ordering frequencies are reported.

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Research Study #11: Benchmarking - Operating Statistics

"There is no finish line." – Nike Corporation motto

**Purpose:** This research study provides a variety of operating statistics benchmarks for your industry. Various "Corporate P&L Statement" figures are reported as percentages of revenues for your firm and for three industry aggregates (minimum, average, and maximum). Average CSR monthly salary in all regions is reported. In addition, industry-wide service statistics are reported.

**Information Source:** This research study is based on information sharing and pooling agreements administered by the Support Services Industry Trade Association.

**Cost:** $2,500.
Research Study #12: Market Statistics

"Those who cannot remember the past are condemned to repeat it." - George Santayana

Purpose: This research study provides a variety of market statistics for the last four quarters:
- Industry demand (final customer purchases) and unfilled orders are reported for Household and Major Accounts service categories.
- Overall market shares for each firm are provided for each of the last four quarters. These market shares are based on end-user customer purchase volumes.

Information Source: This research study is compiled by your research vendor using a variety of sources.

Cost: $2,500.

Research Study #13: Employee Satisfaction

Purpose: This research study provides employee satisfaction estimates of all firms' services in all regions for the last four quarters.

Information Source: Employee satisfaction is estimated via a regular, quarterly industry-wide CSR employee satisfaction survey. CSR employee satisfaction is the percentage of survey respondents rating their overall job satisfaction with as "excellent" on a 4-point "poor"-“fair”-“good”-"excellent" rating scale.

Cost: $15,000.

Limitations: The results of any quarter's employee satisfaction survey only exist for firms who agree to participate in the industry-wide CSR employee satisfaction survey. "Blanks" are reported for firms declining to participate. Note also that this research study is only available to firms who are currently participating in the industry-wide CSR employee satisfaction survey conducted by the Support Services Industry Trade Association.
**Research Study #14: Regional Summary Analysis**

"If you torture the data long enough, it will confess." – Anonymous

**Purpose:** This research study provides a regional summary analysis for each specified market region, including current-quarter market shares, prices, and perceptions of design quality (service design quality), experience quality (service operations quality), and accessibility of all actively-marketing support services.

- "Design Quality" (service design quality) is perceived service offering design quality which follows from the service’s configuration.
- "Experience Quality" (service operations quality) reflects customers’ perceptions of the service operations quality associated with their support service experience. Service quality derives from experiences with each firm’s CSRs. High utilization levels of CSRs presumably leads to lower service levels, since customers must queue for service and be served by over-worked CSRs.
- "Accessibility" is perceived service accessibility, reflecting customers’ perceptions of top-of-mind awareness, inaccessibility due to unfilled orders, ease of access, purchase convenience, and general presence/prominence in the market place.

**Information Source:** Perceived design quality (service design quality), perceived experience quality (service operations quality), and perceived accessibility are based on a survey of support services customers. These perceptual ratings are the percentages of survey respondents rating design quality (service design quality), experience quality (service operations quality), and accessibility as "excellent" on a 4-point "poor"-"fair"-"good"-"excellent" rating scale.

**Cost:** $5,000 per region.
Research Study #18: Experience Quality Perceptions

Purpose: This research study provides the experience quality perceptions of all services in the Household and Major Accounts categories in all regions for the last three quarters. This research study plots current-quarter experience quality perception against last-quarter's CSR usage (utilization) rates using data from the last three quarters for all services in your industry. Charts are provided for the Household and Major Accounts support service categories in each region.

"Experience Quality" is perceived service operations quality which reflects customers' perceptions of the delivery of the support services experience. Service operations quality derives from customers' experiences with each firm's CSRs. High CSR usage (utilization) presumably lead to lower service operations quality levels, since customers must be queued for service and may be served by more harried CSRs. CSR usage rate (lower is better from the customer's viewpoint), CSR salary (higher salary attracts, retains, and motivates more-able service personnel), and turnover (training of new CSRs takes time and energy away from providing customer service) all influence service operations quality perception.

Information Source: Service quality perception is based on a customer survey of current users. Service quality perception is the percentage of survey respondents rating the service's operations quality as "excellent" on a 4-point "poor"-"fair"-"good"-"excellent" rating scale. CSR service capacity usage rates are based on information sharing and pooling agreements among all firms in support services industry. This information sharing and pooling agreement is administered by the Support Services Industry Trade Association.

Cost: $10,000.

---

5 The historical time span for Research Study #18 is the current and preceding three quarters. But, only three quarters of historical data pairs are available for analysis since current-quarter experience quality perceptions are plotted against last-quarter service capacity usage rate. For example, in Quarter #10:
- The first of the three quarter’s of available historical data are Q#10 experience quality perceptions vs. Q#9 service capacity usage rates.
- The second of the three quarter’s of available historical data are Q#9 experience quality perceptions vs. Q#8 service capacity usage rates.
- The third of the three quarter’s of available historical data are Q#8 experience quality perceptions vs. Q#7 service capacity usage rates.
### RESEARCH STUDY #18 (Experience Quality Perceptions)

<table>
<thead>
<tr>
<th>Quarter 14</th>
<th>Quarter 15</th>
<th>Quarter 16</th>
<th>Quarter 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGION 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service 1-1H</td>
<td>50.2</td>
<td>47.4</td>
<td>55.2</td>
</tr>
<tr>
<td>Service 1-2M</td>
<td>43.9</td>
<td>44.6</td>
<td>35.9</td>
</tr>
<tr>
<td>Service 2-1H</td>
<td>61.1</td>
<td>54.1</td>
<td>42.9</td>
</tr>
<tr>
<td>Service 2-2M</td>
<td>47.7</td>
<td>40.5</td>
<td>40.0</td>
</tr>
<tr>
<td>Service 3-1H</td>
<td>36.2</td>
<td>9.9</td>
<td>10.2</td>
</tr>
<tr>
<td>Service 3-2M</td>
<td>36.6</td>
<td>20.0</td>
<td>26.5</td>
</tr>
</tbody>
</table>

**Note:** Active services for the last three quarters are plotted with multiple data points in the same grid location coded by numbers (e.g., if three data points occupy the same grid location, then the number "3" is reported). Ten or more data points at one grid location are denoted by "*".
Research Study #20: Customer Satisfaction

**Purpose:** This research study provides customer satisfaction estimates of all services in the Household and Major Accounts categories in all regions for the last four quarters.

**Information Source:** Customer satisfaction is based on a customer survey. Customer satisfaction is the percentage of survey respondents rating their overall satisfaction with a support service as "excellent" on a 4-point "poor"-"fair"-"good"-"excellent" rating scale.

**Cost:** $10,000.

Research Study #23: Concept Test

“The final question needed to come to grips with the business purpose and business mission is: ‘What is value to the customer?’ It may be the most important question. Yet it is the one least often asked. One reason is that managers are quite sure that they know the answer. Value is what they, in their business, define as quality. But this is almost always the wrong definition. The customer never buys a product. By definition, the customer buys the satisfaction of a want. He buys value. What a company’s different customers consider value is so complicated that it can be answered only by the customers themselves. Management should not even try to guess at the answers. It should always go to the customers in a systematic quest for them.” – Peter Drucker

**Purpose:** This research study provides concept test scores for a range of service configurations “around” a designated configuration in a specified market region.

**Information Source:** This research study is based on end-user customer surveys.

**Study Details:** These concept test scores are "top-box" scores. They represent the percentage of end-user customers surveyed assessing the hypothetical support services concept as being "excellent" on a 4-point "poor"-"fair"-"good"-"excellent" rating scale. This rating scale is equivalent to design quality perception reported in other LINKS research studies.

Concept test scan searches are conducted "around" the specified configuration. Here, "around" means that 243 concept tests are executed (subject to prevailing support services technology limits), one for each of the configuration attributes that are tested in concept tests, varying the values up and down one from the specified configuration for each attribute. **Concept test scores are reported for all scanned concepts whose scores exceed that of the designated configuration by at least 1%.**
As may be noted from the sample output, the concept test score for the specified configuration is reported, along with all of the results for the concept test scanning search around that specified configuration. Only those scanned concept scores exceeding the specified configuration by at least 1% are reported. In this sample output, the configuration M886320 is apparently an unattractive configuration in region 1, thus accounting for the generally low concept test scores for the specified configuration and for its scanned variants.

**Cost:** $15,000 per concept test per region for up to four concept tests in a quarter. Concept tests beyond four in a single quarter cost double the standard cost of $15,000 (per concept test per region).

**Limitations:** A maximum of eight (8) research studies of this type may be executed each quarter. Each of these research study requests must reference a specific region; this research study cannot be executed for "all" regions, but only for a single region. **Concept test scans ordered for all regions (region "0") will not be executed.**

**Additional Information:** You need baseline concept test scores to interpret concept test scores. A concept test score of 40% is interesting, but there is no way to tell if that score is associated with a configuration that offers competitive advantage unless you have corresponding concept test scores for existing support services that are already on the market. Current configurations or the configurations of leading support services are obvious baselines. Of course, you would have to execute concept tests on such baseline configurations (in addition to the hypothetical concepts of interest) if you want access to such baseline-configuration concept test scores.

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**Research Study #24: Price Sensitivity Analysis**

"Any sufficiently advanced technology is indistinguishable from magic." – Arthur C. Clarke

**Purpose:** This research study provides a price sensitivity analysis for a specific support service in a specific region (or all regions). This research study permits the simultaneous testing of a reconfiguration of an existing, active service and an associated price level of the user’s choosing. Thus, Research Study #24 is a focused test marketing experiment with user-specified configurations and prices.

**Information Source:** This research study is based on surveys of customers, using advanced marketing research techniques.

**Study Details:** These price sensitivity analyses isolate the impact of price on market share, while holding other market share drivers constant (design quality, experience quality, and accessibility perceptions).

Nine price levels are used in this research study. With no user-specified price input, these price levels are automatically centered around the current price (the "Reference Price") of the service in each region for which this research study is executed. Values of -40%, -30%, -20%, -10%, 0% (i.e., current price), +10%, +20%, 30%, and +40%, relative to the service’s “Reference Price,” are used.

If configuration and price are left at their default values ("?…?" and 0, respectively), then Research Study #24 is executed with the existing service centered around the current price of the specified service. Otherwise, the user-specified configurations and prices (with the specified price being the “Reference Price”) are used. Market share predictions are provided for
all tested prices in Research Study #24.

Research study output includes market share and gross margin estimates in research study requests with no configuration change. With a configuration change, research study output only includes estimated market shares. Users will need to calculate/estimate their own variable costs (and, therefore, gross margin) associated with any configuration change.

Cost: $20,000 per price sensitivity analysis (per service per region). If you execute this research study for regions in a 3-region LINKS environment, the total cost would be $60,000.

Sample Output With No Configuration Change:

| SERVICE 9-1H PREDICTED GROSS MARGINS IN REGION 8 [HOUSEHOLD] Reference Price: 185 |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Price $111 $130 $148 $167 $185 $203 $222 $240 $259 |
| Cost $65 $65 $65 $65 $65 $65 $65 $65 $65 |
| Margin $45 $64 $82 $101 $119 $137 $156 $174 $193 |
| Sales Volume 61,320 47,178 37,327 29,233 23,308 18,701 14,935 12,305 10,138 |
| Market Share 94.7% 72.9% 57.7% 45.2% 36.0% 28.9% 23.1% 19.0% 15.7% |
| Margin Chang -62.2% -46.2% -31.1% -15.1% 0.0% 15.1% 31.1% 46.2% 62.2% |
| MS Change 163.1% 102.4% 60.1% 25.4% 0.0% -19.8% -35.9% -47.2% -56.2% |
| Net Change -0.5% 8.9% 10.4% 6.4% 0.0% -7.6% -16.0% -22.8% -29.5% |
| Gross Margin ($000s) $2,759 $3,019 $3,060 $2,952 $2,773 $2,562 $2,329 $2,141 $1,956 |
| Service Cost ($000s) 4,470 3,439 2,721 2,131 1,699 1,363 1,088 897 739 |
| Adjusted Gross Margin ($000s) -1,711 -420 339 821 1,074 1,199 1,241 1,244 1,217 |

In estimating "Service Cost," it is assumed that the current cost-per-call for service 1 in region 8 applies for all sales volumes included in this price sensitivity analysis. CSR staffing for service 1 in region 8 is assumed to adjust to the predicted sales volumes, to maintain the current service capacity usage level at all prices included in this price sensitivity analysis. For your reference, the current cost-per-call for service 1 in region 8 is 72.91 and the current CSR utilization is 90.0%.

Unfilled orders are assumed to be zero in this price sensitivity analysis.

These estimated per-unit costs of $ 65.50 include these cost components:

- Variable Costs $ 55.50
- Order Processing Costs $ 10.00

Special Interpretation Reminder: In interpreting these Gross Margin estimates for different price levels tested, service-related costs are assumed to be fixed. That is, it is assumed that there is no change in CSR staffing assignments (and service costs) for this support service in this region across any of the price levels tested in this Price Sensitivity Analysis. In addition, it is assumed that there is sufficient CSR capacity available for this support service in this region so that no unfilled orders exist across any of the price levels tested. Since these assumptions may be inappropriate, the Adjusted Gross Margin estimates are provided at the bottom of the
price sensitivity analysis results.

Sample Output With A Reconfiguration:

<table>
<thead>
<tr>
<th>Price</th>
<th>$240</th>
<th>$280</th>
<th>$320</th>
<th>$360</th>
<th>$400</th>
<th>$440</th>
<th>$480</th>
<th>$520</th>
<th>$560</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Volume</td>
<td>6,508</td>
<td>4,603</td>
<td>4,398</td>
<td>3,319</td>
<td>2,778</td>
<td>2,564</td>
<td>2,432</td>
<td>2,487</td>
<td>1,781</td>
</tr>
<tr>
<td>Market Share</td>
<td>10.1%</td>
<td>7.2%</td>
<td>6.8%</td>
<td>5.2%</td>
<td>4.3%</td>
<td>4.0%</td>
<td>3.8%</td>
<td>3.9%</td>
<td>2.8%</td>
</tr>
</tbody>
</table>

This price sensitivity analysis involves a service reconfiguration. Margin estimates are not provided due to the many cost-related assumptions required to estimate variable costs associated with a reconfigured service.

Limitations: A maximum of four (4) research studies of this type may be executed each quarter. Each of these price sensitivity analysis research study requests must reference a single service and one or all regions. This research study may only be conducted for services that are already actively distributed in a region. This research study may not be used for services prior to their introduction into a region.

Additional Information: These market share predictions and subsequent estimates of gross margins are based on the assumption that competing support services don't change their generate demand programs. Obviously, large price changes will tend to evoke competitive responses.

The reported market shares in Research Study #24 are long-run estimates of market shares if you continue with all of your current customer-facing initiatives (configurations, marketing spending, service levels, etc.) as they are now and so do competitors. Market infrastructure issues (like unfilled order status) are not considered. Only your price is "manipulated" in Research Study #24. Thus, these Research Study #24 estimates of market share will not correspond exactly to your current actual market shares (as reported, for example, in Research Study #14).
Research Study #26: Importance-Performance Analysis

**Purpose:** This research study provides importance-performance analyses for active services in a specified market region. These charts assess a service's relative competitive standing on all relevant customer drivers (relative importance weights). The importance-performance chart's quadrants have these implications:

### Competitive Importance-Performance Analysis

<table>
<thead>
<tr>
<th>Relative Customer Importance</th>
<th>Competitive Disadvantage</th>
<th>Competitive Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High</strong></td>
<td>Concentrate performance improvement efforts here. These are your major problem areas. Fix these problems, if you can.</td>
<td>Keep up the good work and emphasize these things in your communications programs (reinforce the importance of these buying factors as well as your own relative competitive standing).</td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td>False Alarm: Don't sweat the small stuff. Leave bad enough alone. These are low priority things, unless you and your competitors are more-or-less &quot;tied&quot; on the more important considerations.</td>
<td>Misleading Advantage: This is apparently a case of &quot;overkill.&quot; Should the resources deployed here be redirected toward your customers' higher priority concerns?</td>
</tr>
</tbody>
</table>

#### Relative Competitive Performance

<table>
<thead>
<tr>
<th>Below Average</th>
<th>1.0</th>
<th>Above Average</th>
</tr>
</thead>
</table>

**Information Source:** Self-reported importance weights are based on customer surveys conducted by your research supplier. Performance elements are derived from other research conducted by your research supplier.

**Cost:** $7,500 per region.

**Other Comments:** The "Notes" in this study output provide important definitions and qualifications. Please do carefully read these "Notes."
Determining the true importance of market share drivers (such as price, perceived [service] design quality, perceived [service] experience quality, and perceived accessibility) to customers is one of the great continuing challenges in marketing. And, of course, to further complicate the matter, these importances presumably vary across customer segments. The stakes are very high here. If you were sure that perceived (service) design quality was the major driver in a particular market segment, the right managerial response would be to work to improve (service) design quality. This would have the most significant impact on market share. On the other hand, if price was crucial, then efforts to lower prices would be paramount (perhaps via efforts to reconfigure costs out of a service. Note that these are two entirely different strategies, and they depend crucially on the true underlying importance of the drivers of market share.

Self-reported importance weights are fragile things, subject to a variety of possible biases. Survey respondents may report that they want it all ("everything is important"), that the convenient-to-answer price-effect is quite important when it really isn't, or may be unable or unwilling to make reliable trade-offs among price, perceived (service) design quality, perceived (service) experience quality, and perceived accessibility.

### Research Study #27: Marketing Program Benchmarking

**Purpose:** This research study provides marketing program benchmarking information for all active services in specified regions. You may execute this research study for one region, any combination of regions, or all regions.

**Information Source:** This research study is based on analyses conducted by your research supplier.

**Cost:** $500 per category per region plus $500 per active service in each category and region.

**Study Details:** For each active service in
each category in each specified market region, marketing program benchmarks are provided: total marketing spending; advertising spending ("Advertis"); promotion spending ("SalesFor"); and, marketing communications positioning ("Pos").

Research Study #28: Marketing Program Experiment

"I know that half of my marketing budget is wasted, but I just don't know which half." - Unknown

**Purpose:** This research study conducts a marketing program experiment. Inputs include a full marketing program (marketing spending, marketing mix allocation, and positioning) for a service in one or all regions. Outputs include customer perceptions of design quality, experience quality, and accessibility.

**Information Source:** This marketing program experiment is executed in a small but representative part of the specified market region. This marketing program experiment is executed using your specified marketing program and all other current marketing mix variables of your service and all competitors' services. Your competitors will not be aware of the existence of this marketing program experiment and they have no opportunity to intervene to attempt to influence the results of this experiment. Competitors' marketing decision variables are held constant at their values in the previous quarter.

**Cost:** $12,500 per marketing program experiment.

**Execution Details:** To specify "all" regions within a single marketing program experiment, enter "0" (zero) as the region selection. This, of course, would involve multiple executions of marketing program experiments with consequent cost implications. Marketing program experiments must be executed for a specific service. If you wish to execute multiple marketing program experiments, you must specify them separately for each service.

Research Study #28 (Marketing Program Experiment) automatically includes three experiments for each RS#28 input set. Research Study #28 includes experiments with the specified marketing spending input plus additional experiments with 50% more and 50% less than the specified marketing spending input. These three experiments are included at the standard cost of Research Study #28.
Sample Output:

<table>
<thead>
<tr>
<th>R</th>
<th>MktsSp</th>
<th>MktgMx</th>
<th>Adve</th>
<th>Prom</th>
<th>SFor</th>
<th>MP</th>
<th>DQ</th>
<th>EQ</th>
<th>Ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>200K</td>
<td>502525</td>
<td>100K</td>
<td>50K</td>
<td>50K</td>
<td>73</td>
<td>27.1%</td>
<td>20.1%</td>
<td>23.5%</td>
</tr>
<tr>
<td>2</td>
<td>100K</td>
<td>543333</td>
<td>34K</td>
<td>33K</td>
<td>33K</td>
<td>12</td>
<td>34.2%</td>
<td>15.9%</td>
<td>25.1%</td>
</tr>
<tr>
<td>2</td>
<td>150K</td>
<td>202060</td>
<td>30K</td>
<td>30K</td>
<td>90K</td>
<td>37</td>
<td>14.3%</td>
<td>18.3%</td>
<td>43.9%</td>
</tr>
</tbody>
</table>

Notes:
(1) In the heading, "R" refers to region, "MktsSp" refers to total marketing spending (in L$000s), "MktgMx" refers to marketing mix allocations (2-digit % of total marketing spending allocated to advertising, promotion, and sales force), "Adve" refers to implied advertising spending (in L$000s), "Prom" refers to implied promotion spending (in L$000s), "SFor" refers to implied sales force spending (in L$000s), and "MP" refers to marketing positioning.
(2) This research study may only be executed for services already actively marketed in a region. Blank results are reported for perceptions for services not actively marketed.

Limitations: A maximum of seven (7) marketing program experiments may be conducted in any quarter. Each marketing program experiment may reference one or all regions. Marketing program experiments may only be executed for services already actively distributed in a region. Blank results are reported for perceptions for services not already actively distributed in a region.

Other Comments: Marketing program experiments permit an assessment of the impact of marketing spending, marketing mix allocation, and positioning on key perceptual outputs (design quality perceptions, experience quality perceptions, and accessibility perceptions). Although not a final outcome measure like market share, sales volume, or profitability, customer perceptions have the advantage of being the direct consequences of a service's marketing program. Final outcome measures like market share, sales volume, and profitability are influenced by many forces, not just a service's marketing program.

Benchmarks are needed to assess the perceptual results in marketing experiments. You can create your own benchmark by testing the marketing program along with variations of interest. While such benchmarking requires the execution of a base marketing experiment (with current marketing spending, marketing mix allocation, and positioning) in addition to the test variations of interest, such benchmarking provides the standard against which marketing program variations may be compared.

Marketing experiments have some randomness inherent in their results. This implies that you would only change your marketing program (marketing spending, marketing mix allocation, and positioning) if a particular marketing program variation yielded a noteworthy change in customer perceptions.
Research Study #31: Self-Reported Preferences

**Purpose:** This research study provides self-reported importance weights for a variety of customer-facing elements for the Household and Major Accounts categories of support services for each market region.

**Information Source:** This research study is based on end-user customer surveys.

**Study Details:** These self-reported importance weights are the averages across all survey respondents. Seven-point rating scales are used in this end-user customer surveying, where "1" is anchored by "Not Important" and "7" is anchored by "Very Important."

**Cost:** $20,000.

**Other Comments:** Self-reported importance weights are easy things to ask survey respondents. There is, however, considerable debate about the usefulness of such measures. Customers may have trouble distinguishing low-importance and high-importance elements. Customers may report that everything is important, failing to provide the differentiation of interest to marketing managers. It's also not clear how to use self-reported importance weights to predict future buying behavior, since self-reported importance weights aren't developed from actual behavior. Perhaps they're only meant to be directional in nature, identifying only really low and really high importance factors.

Self-reported importance weights are of uncertain quality. It's easy for customers to report "what they want" on such survey instruments, but the statistical veracity of these self-reported weights has been questioned by many professional marketing researchers.

Research Study #34: Accessibility Perception Drivers

**Purpose:** This research study provides a summary analysis of some potential drivers of accessibility perception for all regions and categories (household and major accounts) in the support services industry.

**Information Source:** This research study is based on the analysis of historical data in your support services industry.

**Study Details:** The summary results reported in this research study are based on statistical correlations between accessibility perception and some of its potential drivers based on data from each market region and category from your industry's historical database (i.e., for the last four quarters).

In the sample output, "H"/"M"/"L"/?" refer to high, medium, low, and uncertain (or impossible-to-assess) correlations while "h"/"m"/"l" refer to high, medium, and low correlations with less statistical certainty due to small sample sizes in the historical database used to estimate
these market-driver correlates of accessibility. Missing correlations ("?"?) represent potential drivers with insufficient historical data to permit reliable measurement of correlations.

Cost: $20,000.

Other Comments: The "Notes" in this study output provide important definitions and qualifications. Please do carefully read these "Notes."

Correlations measure the strength of linear association between two variables. Correlations run from -1.0 (exact negative relationship) to +1.0 (exact positive relationship). A zero correlation implies that two variables are statistically unrelated to one another. Pairwise correlations can be influenced by other forces which are highly correlated with the two variables for which correlations are calculated. Correlation does not mean causation. These correlations, like all correlations, should be interpreted with a measure of caution.

Correlations have the obvious strength of not being based on survey respondents' self-reports but rather on actual purchasing behavior. Most academic marketing researchers now believe that inferred importances (such as correlations) are demonstrably superior to stated importances (such as self-reported weights). However, correlations can easily be uninformative. For example, if all services use the same positioning, then there will be near-zero correlation between accessibility perception and that particular positioning. This does not mean that particular positioning is irrelevant or unimportant in general. Rather within the range of the sample data (with little or no variation in positioning), positioning is not a major correlate of accessibility perceptions. However, don't make the mistake of extrapolating broadly and presuming that other positionings will have no impact on accessibility perceptions.

The statistical correlations summarized in this research study are based on all active services in each market region. These correlations are, therefore, aggregate in nature reflecting overall market place patterns and relationships across, for example, large-share and small-share services, "new" and "old" services, and "high-priced" and "low-priced" services. This is the reason why no correlates are reported in this research study for the "how you say it" part of marketing positioning. The impact of "how you say it" marketing positioning on accessibility perceptions depends, in part, on a service's current competitive positioning as well as the saliency to customers of particular "how you say it" benefits positionings.

The influence of marketing programs on accessibility perceptions may depend on a service's relative competitive standing in general or in some specific marketing element. Relative competitive standing can, of course, change through time due to the activities of competitors. Thus, these summary correlations should be interpreted as suggestive (as "guidelines") rather than being completely conclusive under all relative competitive standing conditions.
Research Study #38: Retention Statistics

Purpose: This research study provides retention rates for all actively marketed services in all markets for the last four quarters.

Information Source: Retention rates are estimated based on a customer survey of current purchasers of support services. Retention rates are customers’ stated intentions of probability of future purchase of the just-purchased support service.

Cost: $10,000.

Other Comments: Retention rates are measures of long-run average customer loyalty to a just-purchased support service. They are estimates of the average current purchaser’s stated intention of probability of repeat purchase. Retention rates are also used by marketing analysts to estimate customer lifetime value (CLV).
Interpreting Retention Statistics and Customer Lifetime Value: A Tutorial

Customer lifetime value (CLV) is calculated as the net present value of expected future cash flows over the lifetime of an individual customer. The equation (shown below) explicitly accounts for customer churn or turnover by adjusting the cash flow for each time period by the probability that the customer will be retained \((r)\):

\[
CLV = \sum_{t=1}^{T} \frac{(GM_t)r^t}{(1+d)^t}
\]

- **GM** \(_t\) = gross contribution margin per customer in time period \(t\)
- \(r\) = retention rate
- \(d\) = discount rate
- \(t\) = a time index (e.g., a quarterly time index)

Calculating Customer Lifetime Value

The steps in calculating CLV are as follows:
1. Determine annual profit (or cash) flow pattern for customers over time.
2. Establish customer defection/retention pattern.
3. Calculate customer NPV using firm’s discount rate.

It is preferable to calculate CLV using gross contribution margin per customer in the numerator. However, in some instances, firms have difficulty assigning their costs to specific customers, so gross contribution margin per customer is replaced by revenue per customer.

Different market segments may have very different cash flow characteristics (that is, different gross contribution margins and retention rates). Hence, it is useful to calculate CLV separately for the typical customer in each market segment.

Interpreting Customer Lifetime Value

The CLV framework is a useful way of thinking about managing customer relationships to maximize shareholder value. From a managerial standpoint, there are three ways for a company to increase aggregate CLV (and consequently shareholder value) next year: (1) Acquire new customers; (2) Increase retention of existing customers; or, (3) Increase gross margin (through cross-selling or changes in cost-structure, for example).

Firms generally consider customers with a high CLV to be most attractive and – if these customers perceive the firm’s product to have a high value – it will be profitable for the firm to invest in marketing to them. Firms generally undertake defensive strategies to retain customers with a high CLV who do not perceive the firm’s product to have a high value because they are vulnerable and may be lost to competitors.

Recent research has shown that the CLV framework (i.e., using forecasts of acquisition, retention, and margins) can be used to calculate the value of the firm’s current and future customer base. Gupta, Lehmann and Stuart (2004) used publicly available information from annual reports and other financial statements to calculate a customer-based valuation of five companies. They compared their estimates of customer value (post-tax) with the reported market value for each of
the companies. Their estimates were reasonably close to the market values for three firms, and significantly lower for two firms (Amazon and eBay). They inferred that these two firms are either likely to achieve higher growth rates in customers or margins than they forecast, or they have some other large option value that the CLV framework doesn’t capture.

Sample Customer Lifetime Value Calculation

An auto dealership tracks customers who use its service facility. New customers represent $50 in 1st-year margins, $100 in 2nd-year margins, $125 in 3rd-year margins, and $100 in margins in subsequent years. The dealership estimates that customers defect at a rate of 20% per year. That is, only 80% of new customers continue to use the automobile dealership’s services in the second year, only 60% of new customers continue to use the automobile dealership’s services in the third year, etc. Assume the firm’s discount rate is 20%. We can calculate the CLV for the average customer as follows:

\[
CLV = \frac{50}{1.20} + \frac{100 \times 0.80}{(1.20)^2} + \frac{125 \times 0.60}{(1.20)^3} + \frac{100 \times 0.40}{(1.20)^4} + \frac{100 \times 0.20}{(1.20)^5}
\]

\[
= \$167.96.
\]

Suppose the auto dealership was able to reduce customer defections from 20% to 15% per year. Then, CLV for the average customer would be $205.10. Thus, a 5% reduction in the rate of customer defections (a 5% increase in the customer retention rate) increases profitability by 22.1%. Note that, in this example, we discount cash flows back to “year 0” and assume there was no acquisition cost at year 0.
Research Studies Table of Contents

Research studies are output in numerical order so you always know the general location of any research study in your output (e.g., lower numbered research studies are printed closer to the front of your research studies output). However, since the research studies ordered vary through time and the space required for research studies also varies, the specific page number of any particular research study is not precisely known ahead of time. For your convenience, a Research Studies Table of Contents is included as the last page of your research studies output.

Research Studies Decision Forms

Blank "Research Studies Decisions" forms may be found on the next three pages. Complete these decision forms during your team deliberations.
# Research Studies Decisions (1)

<table>
<thead>
<tr>
<th></th>
<th>Research Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Benchmarking - Earnings</td>
</tr>
<tr>
<td>3</td>
<td>Benchmarking - Service Design</td>
</tr>
<tr>
<td>8</td>
<td>Benchmarking - Service (CSR Usage)</td>
</tr>
<tr>
<td>9</td>
<td>Benchmarking - Marketing</td>
</tr>
<tr>
<td>10</td>
<td>Benchmarking - Info Tech &amp; Research Studies</td>
</tr>
<tr>
<td>11</td>
<td>Benchmarking - Operating Statistics</td>
</tr>
<tr>
<td>12</td>
<td>Market Statistics</td>
</tr>
<tr>
<td>13</td>
<td>Employee Satisfaction</td>
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<tr>
<td>14</td>
<td>Regional Summary Analysis</td>
</tr>
<tr>
<td>18</td>
<td>Experience Quality Perceptions</td>
</tr>
<tr>
<td>20</td>
<td>Customer Satisfaction</td>
</tr>
</tbody>
</table>

**Notes:**

(1) Circle the number of each research study that you wish to order. If additional information is required for a research study, provide that information in the designated space(s).

(2) When region numbers are required, enter a single region number. Use region "0" as a designation to run a research study for all regions. See the research study descriptions for details about the associated multi-region costs.

---

**Reminders**

Research study requests are for one quarter only. If you wish to reorder a research study in a subsequent quarter, you must reenter that research study request.
## Research Studies Decisions (2)

<table>
<thead>
<tr>
<th>23</th>
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<th>Configuration?</th>
</tr>
</thead>
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<td>Configuration?</td>
</tr>
</tbody>
</table>

| 26  | Importance-Performance Analysis | Region(s)? |
| 27  | Marketing Program Benchmarking | Region(s)? |
| 31  | Self-Reported Preferences |
| 34  | Accessibility Perception Drivers |
| 38  | Retention Statistics |

### Notes:

1. Circle the number of each research study that you wish to order. If additional information is required for a research study, provide that information in the designated space(s).
2. When region numbers are required, enter a single region number. Use region "0" as a designation to run a research study for all regions. See the research study descriptions for details about the associated multi-region costs.

### Reminders

Research study requests are for one quarter only. If you wish to reorder a research study in a subsequent quarter, you must reenter that research study request.
## Research Studies Decisions (3)

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</table>

<table>
<thead>
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<th>Service?</th>
<th>Region?</th>
<th>Marketing$?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MarketingMix?</td>
<td></td>
<td></td>
<td>Positioning?</td>
</tr>
<tr>
<td></td>
<td>Service?</td>
<td></td>
<td></td>
<td>Marketing$?</td>
</tr>
<tr>
<td></td>
<td>Region?</td>
<td></td>
<td></td>
<td>Positioning?</td>
</tr>
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<td>MarketingMix?</td>
<td></td>
<td></td>
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<tr>
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<td>Service?</td>
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<td></td>
<td>Marketing$?</td>
</tr>
<tr>
<td></td>
<td>Region?</td>
<td></td>
<td></td>
<td>Positioning?</td>
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<td>MarketingMix?</td>
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<td></td>
<td>Positioning?</td>
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<td></td>
<td>Service?</td>
<td></td>
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<td>Marketing$?</td>
</tr>
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<td>Region?</td>
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<td>Positioning?</td>
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<tr>
<td></td>
<td>MarketingMix?</td>
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<td></td>
<td>Positioning?</td>
</tr>
</tbody>
</table>

### Reminders

Research study requests are for one quarter only. If you wish to reorder a research study in a subsequent quarter, you must reenter that research study request.
Chapter 10: Performance Evaluation

"If you're riding ahead of the herd, take a look back every now and then to make sure it's still there." – Cowboy philosophy

Profitability measures obviously matter in assessing the long-run performance of a business. However, "other things" are leading indicators of future profitability and root causes of profitability. As you’ll note from the details that follow, current performance and change in performance are considered in the LINKS multi-dimensional performance evaluation scorecard.

The LINKS scorecard is a boardroom-level scorecard. It focuses on top-line financial, operational, and customer performance measures and sub-measures. The LINKS scorecard includes the measures and weights described in Exhibit 6. Each firm in your support services industry submits their raw data to the Support Services Industry Trade Association, which provides your firm's scorecard every quarter.

The LINKS scorecard is based on a ranking of performance on each sub-measure. These rank-order comparisons across all competing firms within your industry avoid the undue influence of particularly extreme values of individual sub-measures. This LINKS scorecard is a within-industry performance evaluation system. Comparisons across industries are problematic due to variations in environmental and competitive milieu. Your firm receives weighted points for each competitor for whom your performance on a sub-measure is better. For example, if your firm's ratio of "Net Profits" to "Revenues" is better than three other firms' ratios, your firm receives 9 points. (Of course, the top-performing firm on "Net Income" to "Revenues" ratio in a 6-firm industry would receive 15 points.) In general, the maximum available points on any sub-measure are \( W \times (N-1) \) where "W" is the sub-measure's weight and "N" is the number of firms in the industry. Points accumulate each quarter throughout the LINKS exercise.

To avoid an overemphasis on minor quarter-to-quarter variations in the calculation of the ranking of firms on the performance sub-measures in the LINKS scorecard, minor differences in the sub-measures are treated as ties in the calculation of ranking points. The thresholds for differences to be treated as meaningful are listed in Exhibit 6 for each sub-measure. For example, differences of 0.2% or less for "Ratio of Net Income to Revenues" are considered to be statistically insignificant, and firms within 0.2% of each other would be treated as being tied. Thus, two firms with ratios of Net Income to Revenues of 4.5% and 4.6% would be treated as being tied in the calculation of ranking position and associated points received in any quarter.

You receive the LINKS scorecard automatically each quarter as the first page of your financial and operating reports. This scorecard provides comparatives to assess how your firm's data compares to the industry averages on every KPI.

In addition, historical plots of past performance are provided. Data from the past six quarters are used, to the extent available in your industry's historical archives, to create quarter-by-quarter plots for each of the LINKS performance evaluation metrics. For each metric and quarter, the range of values the range of values across all firms in your LINKS industry is shown and your firm's position in these ranges is identified.
Exhibit 6: LINKS Scorecard Measures

<table>
<thead>
<tr>
<th>Financial Sub-Measures</th>
<th>Weight</th>
<th>Sub-Measure Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of Net Income to Revenues</td>
<td>3</td>
<td>Current profitability is the best overall signal of business performance, hence its high weight. Firms are &quot;tied&quot; if their scores are within 0.2% of each other.</td>
</tr>
<tr>
<td>Change in Ratio of Net Income to Revenues</td>
<td>1</td>
<td>Improvement in profitability is important but less important than current profitability. Firms are &quot;tied&quot; if their scores are within 0.2% of each other.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operational Sub-Measures</th>
<th>Weight</th>
<th>Sub-Measure Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fill Rate</td>
<td>1</td>
<td>The percentage of orders that are filled. &quot;Unfilled orders&quot; occur when available capacity is less than orders in a quarter. Firms are &quot;tied&quot; if their scores are within 0.5% of each other.</td>
</tr>
<tr>
<td>Forecasting Accuracy</td>
<td>2</td>
<td>Forecasting accuracy is a relatively pure signal of management skill and expertise (in this case, in the area of understanding customers and customer demand generating forces). Firms are &quot;tied&quot; if their scores are within 0.5% of each other.</td>
</tr>
<tr>
<td>CSR Turnover</td>
<td>-1</td>
<td>Equal to the ratio of within-quarter CSR resignations to CSR staff size at the beginning of a quarter. Firms are &quot;tied&quot; if their scores are within 0.10 of each other.</td>
</tr>
<tr>
<td>CSR Cost/Call</td>
<td>-1</td>
<td>Equal to service spending (of all kinds) divided by total service center calls. Lower CSR cost/call is desirable. Firms are &quot;tied&quot; if their scores are within 0.20 of each other.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer Sub-Measures</th>
<th>Weight</th>
<th>Sub-Measure Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in Market Share</td>
<td>1</td>
<td>Change in market share is an overall measure of customer reaction to the firm's offerings. Firms are &quot;tied&quot; if their scores are within 0.1% of each other.</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>2</td>
<td>Customer satisfaction measures the overall performance of the service from the perspective of purchasers. Thus, it's a clear measure of customer performance and a long-run leading indicator of repeat purchasing behavior and customer retention. Average customer satisfaction across all services and regions is used here. Firms are &quot;tied&quot; if their scores are within 0.5% of each other.</td>
</tr>
</tbody>
</table>

**Notes:** Positive "weights" are associated with sub-measures where "more is better" and negative "weights" are associated with sub-measures where "less is better." "Change" measures are based on quarter-to-quarter changes.
Chapter 11: Firm Management and Advice

“Success doesn't come to you. You go to it.” – Marva Collins

This chapter discusses a range of topics related to successfully managing your LINKS firm throughout your LINKS event.

Planning

"Direct, simple plans, and clear concise orders are essential to reduce the chances of misunderstanding and confusion. Other factors being equal, the simplest plan executed promptly is to be preferred over the complex plan executed later.” – U.S. Army Field Manual 100-5

Planning occurs throughout LINKS. Your decisions are your plans. But that's not the whole story. How are plans developed? And, much more importantly, how are good plans developed?

Planning and plans are the consequence of careful analysis and formulation of appropriate strategies and tactics. Your plan is, therefore, the natural consequence of considerable prior analysis and thinking. This analysis-planning-implementation-evaluation sequence iterates through time as the results of your plans are revealed in the market place (and in your financial and operating statements).

The essence of planning involves answering these questions (and in this order):
(1) What is happening?
(2) How are we doing?
(3) How and what are "they" (our major competitors) doing?
(4) What factors are important for success?
(5) What are we going to do? Why? With what effect? At what cost?
(6) Who - specifically - is to do what to make the plan work?

The SWOT Analysis Worksheet, on the next page, is the classic strengths-weaknesses-opportunities-threats template for organizing your thoughts under the "What is happening?" and "How are we doing?" questions.

Team Management and Organization

"Great leaders are almost always great simplifiers, who can cut through argument, debate and doubt, to offer a solution everybody can understand.” – General Colin Powell

You're a member of a team in LINKS. Managing your team to obtain the best efforts of all team members is a continuing management challenge.
• Your most limited resource is your team's available time. Well-performing teams inevitably manage their management time carefully and thoughtfully. You will need to think carefully about how to allocate your management time to necessary tasks that exist within LINKS.
## SWOT Analysis Worksheet

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What are your firm’s strengths relative to your competitors?</strong> What are your most important strengths? Why?</td>
<td><strong>What are your firm’s weaknesses relative to your competitors?</strong> What is impeding you from achieving your desired results? Prioritize your weaknesses.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How can you convert these strengths, weaknesses, and threats into opportunities for your firm?</strong> What considerations are most important for your success?</td>
<td><strong>What organizational, competitive, and environmental threats do you face now and in the near future?</strong></td>
</tr>
</tbody>
</table>
As you gain experience with LINKS, it may well appear that a review is needed of an earlier group decision about how to allocate tasks, responsibilities, and available management time. Don't be shy within your LINKS team about asking the question: "Are we organized in the best way for the tasks ahead?" This is always a good question.

There are predictable signals of well-performing teams in simulations (and in real life!). Pamela Van Rees (Boston University MBA student), provided the following list of characteristics of well-functioning simulation teams:

- The firm's long-term well-being is the top priority of all members.
- Relevant issues are fully and adequately explored.
- Proposals and objectives are clearly explained.
- Members feel comfortable and spontaneous.
- Feedback is given freely and directly.
- Members feel respected, supported, and listened to.
- Disagreements are tactfully stated without being offensive.
- Differences and misunderstandings are resolved in such a way as to strengthen and deepen rather than weaken relationships (by exploring the origins and implication of ideas).
- Everyone's judgment is acknowledged and explored.
- Interruptions are minimal.
- Everyone's schedule is accommodated as fully as possible.
- At any given time in a group meeting, each firm member is either engaged in holding the focus (proposing an idea or decision), listening to another's focus, giving feedback about the focus, or facilitating (creating the structure or leading) the discussion.

The principal causes of poor team performance in the simulation are a combination of the following factors:

1. uncoordinated demand-supply management;
2. not really meeting customer requirements for support services (i.e., failure to establish any meaningful differential advantage, particularly regarding service design);
3. lack of focus (capacity, reconfiguration, time, and human resource constraints combine to favor concentrated effort in fewer than "all" market regions);
4. limited research and/or limited efforts to interpret the research studies that are available;
5. limited attention to competitive developments (i.e., lack of in-depth competitor analysis to discover the underlying drivers of market behavior);
6. financial mismanagement related to cost structure management (variable and fixed costs management, covering corporate-wide overheads, etc.), and capacity management;
7. not understanding the simulation's structure/environment (i.e., treating the participant's manual in a cursory, fashion rather than something to be studied and referenced regularly);
8. poor work ethic (not spending enough time on the simulation); and,
9. team mismanagement (not spending enough time thinking about and discussing team management issues and related human resource deployment strategies and tactics).

**End-Gaming Strategies and Tactics**

"It's time to break camp." – Dwight Dowdell, Accenture

Should you do anything special or unusual at or near the end of your LINKS exercise? Behave as if the simulation will not end at any specific pre-announced quarter. Keep a long-run view and continuously try to improve your firm's performance. Attempts to end-game the simulation can
easily be counter-productive, resulting in substantial last-minute deteriorations in hard-earned market share, margins, and profits. Also, how do you know for sure that the simulation will really end after a particular quarter? Perhaps there will be an unexpected and unannounced change at the last minute, resulting in a longer or shorter simulation exercise. All in all, taking a long-run view seems like the only sensible and prudent thing to do.

The best counsel about end-gaming is simply to manage your firm to improve its profitability through time. You don't have to get it perfect (i.e., achieve "optimal" profits, whatever that is), but you must improve through time. You take over a LINKS firm that is profitable as of quarter 1. Seek to improve your firm's profitability through time ... and that time extends to and beyond the actual end of your particular LINKS exercise.

Postscript

"The journey is the reward." – Steve Jobs, Apple Computer Founder

Good luck and try to have fun in LINKS. It's all about learning and, in a "learning marathon" like LINKS, everyone can cross the finish line in a personal-best time.
Appendix: Web-Based LINKS Access

LINKS has no software to download/upload/install. Point your favorite web browser at the LINKS Simulations website to interact with LINKS

http://www.LINKS-simulations.com

and then access the LINKS Simulation Database using your firm’s case-sensitive passcode. You'll be e-mailed your LINKS firm's passcode just before your LINKS event begins.

LINKS uses e-mail to communicate with all LINKS participants. Please ensure that your preferred e-mail software is configured to receive e-mail messages from domains ending with:

@ChapmanRG.com   @LINKS-simulations.com   @LINKS-simulations.info

Your may wish to consult your personal information technology advisor to ensure that your e-mail software is configured appropriately to receive LINKS e-mail from these domains.

While the LINKS Simulation Database works with all web browsers, Microsoft’s Internet Explorer is recommended. LINKS website access requires a Java-enabled browser.

Output Retrieval After a LINKS Round: You'll be advised via e-mail when LINKS game-run results are available on the LINKS Simulations website. Links within the LINKS Simulation Database permit you to access your Word doc and Excel results after a game run.

Inputs For the Next LINKS Round: When you're ready to input decisions for the next LINKS round, access the LINKS Simulation Database and make your input changes.

- While any number of members of a LINKS firm may access the LINKS Simulation Database simultaneously to “browse,” only one team member at a time can input new decisions. If multiple members of a LINKS firm attempt to make inputs simultaneously, problems can arise; all decision inputs might not be saved successfully on the LINKS server with simultaneous inputs from multiple members of a LINKS firm.

- You may make some inputs now and others later. Only your final LINKS inputs at the input submission deadline for your LINKS industry are included in the next LINKS round.

- Within the LINKS Simulation Database, current decision values are displayed on the input screens. You only need to make changes. All LINKS decision variables are "standing orders" and remain in effect until changed. However, you must input specific instructions each LINKS round for ordering research studies. Otherwise, research studies will be executed only once since "standing orders" don't exist for research studies.

- Inputs are checked for input integrity, including upper and lower bounds on permissible numeric inputs. Invalid entries result in an error message reporting valid minimums and maximums. And, informative messages are reported at the bottom of each web screen.

  - Save Input Changes on a LINKS input web screen before moving to another input screen in the LINKS Simulation Database. Review reminder, warning, and error messages reported at the bottom of the regenerated web screen after the inputs are processed by the LINKS web server.
• **Decision Inputs Audit**: To provide decision inputs auditing support, the LINKS Simulation Database includes a Decision Inputs Audit. Accessible on the initial login and Exit web screens in the LINKS Simulation Database, the Decision Inputs Audit checks a firm’s current decision inputs for potential problems and inconsistencies. This LINKS Simulation Database audit function is not an audit of the individual quality of each decision input (e.g., there’s no attempt to assess whether a price of $345 is good or bad). But, possible problems are flagged for attention. For example, forecasts that haven’t been changed since the last decision round are noted in the audit display because forecasts are normally updated every decision round.

**Accessing LINKS Results Files Via a Browser on a Public Computer**: Web browsers leave “tracks” to previously accessed web-pages in browser history files. If you access LINKS results files on a public computer (e.g., in a public PC lab), others could access your results too via the browser history.

Instructions for cleaning the cache in Internet Explorer follow. Other web browsers have similar browser-cache cleaning protocols.

If you access LINKS results files on a public computer, follow these steps to clear Internet Explorer’s browser history (cache):

1. Exit/close Internet Explorer after accessing your LINKS results file.
2. Re-start Internet Explorer.
   a. Click on “Tools” and then “Internet Options.”
   b. On the “Internet Options” screen, look for the “Browsing History” sub-section. Check “Delete browsing history on exit” (it may already be checked).
   c. Click the “Delete” button in the “Browsing History” sub-section.
   d. Check the “History” box on the “Delete Browsing History” screen (it may already be check).
   e. Click the “Delete” button at the bottom of the “Delete Browsing History” screen.
   f. Wait until the “Internet Options” screen re-appears.
   g. Click the “OK” button.
3. Exit/close Internet Explorer.

These steps clear the browsing history from Internet Explorer on any computer and preserve the security and privacy of your LINKS results files.
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