

## **An application of the marketing concept in health-care services planning: a case report**

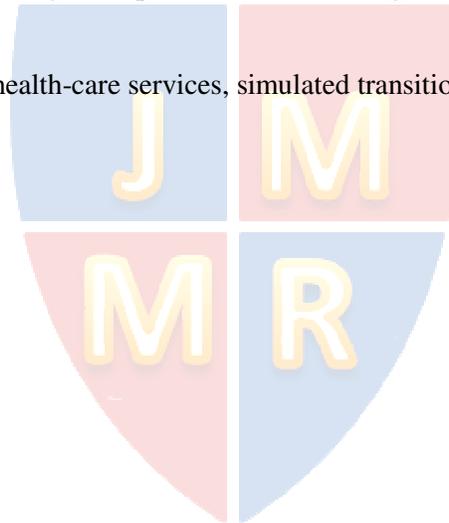
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### **ABSTRACT**

In this report, efforts of one hospital to utilize market share estimates as market planning parameters for their emergency room services are detailed to demonstrate (1) the difficulties and shortcomings associated with the use of their traditionally used method, (2) the value of a transition probability matrix defined empirical terms to help simulate future market positions, and (3) how the perspective afforded by the marketing concept can revitalize an organization and help it to focus on its primary target – the patient.

Keywords: marketing concept, health-care services, simulated transition probabilities



## **INTRODUCTION**

Health-care services represent the biggest and fastest growing segment of the United States' economy. For some perspective, the U.S. spends about double that of other advanced nations as a share of GDP (>10%) (Conrad, 2009). Nevertheless, our system is in a serious financial crisis and "expected to get worse as the population ages and costs continue to rise." (Carter, 2007). The current health-care debate related to marketplace reform is only one outgrowth (i.e. who will be covered and how will that coverage be subsidized?).

Contributing to the larger crisis is the ever-changing marketplace, from rapidly advancing technology and medical science with its corresponding new treatment options, to the persistent erosion of the tertiary-level hospital, to changing demography (aging "Boomers"). These and other shifts have affected virtually every area of health-care delivery. The increasing stressors will continue to challenge marketing planners and decision-makers who interface directly with patients as service providers, as never before. The purpose of this paper is to share the experience of one hospital's efforts to enhance their marketing performance through their continuing efforts to monitor their patient service area and deliver value consistent with their continuing consumer-oriented research program (i.e. implementation of the marketing concept).

## **HOSPITAL MARKET PLANNING**

Market planning in general refers to considering those marketing activities which serve to identify and help develop specific courses of action necessary to achieve future marketing goals. In terms of hospital market planning, a variety of organizational goals have traditionally been involved such as achievement of a specific and/or stable census, or achieving prescribed benchmarks on various financial metrics such as a specific ROI, or achieving external recognitions resulting from performance effectiveness and associated rankings.

The problems with these types of goals is that they (1) tend to de-value the role of individual patients and their impact on marketing-related goals (e.g. patient satisfaction (CRM), long-term patient loyalty (LTV), capturing new and opportune market positions, and various promotional outcomes such as name recognition, awareness of basic services, and points of distinction, etc., and (2) they have given rise to the view of a highly fragmented healthcare marketplace. For instance, among the competing "markets" typically associated with hospital performance in addition to patients themselves, are physicians, community agencies, regulatory bodies from various levels of government, third-party payers, philanthropists, and institutional suppliers, and even Boards of Trustees. Unfortunately, current evidence supports the conclusion that while more healthcare providers talk about the patient market as the most important primary objective, few actively measure their success through patient satisfaction (Kurrasch, 2009; Andrews, 2008; Zuckerman, 2006; White, et al, 2001; Arnold, et al, 1997).

## **THE MARKETING CONCEPT**

Simply put, the marketing concept is the most widely endorsed, contemporary philosophy for practicing marketing. As defined in most marketing texts, the basic notion is that an organization will best achieve long-term marketing goals through an awareness of the specific wants and needs of the parties with whom it exchanges value, and a dedication of the entire organization's efforts toward fulfilling those wants and needs better than competitors. Every

opportunity for exchange must be carefully analyzed, understood, and managed to ensure each party's maximum satisfaction. Integrated marketing is typically used to describe the primary organizational challenge of the marketing concept that every member of the organization, from the CEO to the custodial staff must be authorized and expected to deliver maximum satisfaction to meet specific needs in the right way, at the right price, in the right location. Wherever and whenever the need arises relevant to the organization's mission, the organization must be prepared and equipped to turn the unmet need into a satisfying exchange of value for their customer(s) and thereby achieve their own organizational goals. Research has shown in general that a "one percent increase in satisfaction can produce up to a three percent increase in capitalization" (Friar, 2001). Further, as healthcare providers rely more heavily on serving patient's expectations, the chances of achieving patient satisfaction also increases (Bedi, et al, 2004).

### **PATIENT SERVICE AREA**

Brottman Hospital is located in a relatively insulated city with a population of approximately 100,000. It is one of three, roughly equal-sized tertiary hospitals in the city which have competed against one another for several years. Each is geographically located essentially equidistant from one another and each has access to approximately equal population densities within its immediate patient service areas. Thus, among their competitive advantages, each claimed a geographic portion of the city as their own by virtue of their locations. Administrators at all three typically viewed this separation as their competitive fait accompli, and their primary market areas were fairly stable and rarely challenged. The typical operating assumptions and often the primary impetus to market planning was the need/ability to successfully retain their respective fair-share, one-third of the city-wide demand for hospital services. The competitive atmosphere was often characterized as cooperative. Correspondingly, marketing planning activities at Brottman often appeared half-hearted and generally unimportant.

### **THE SHAKE-UP**

Despite the rather benign and harmonious competitive environment and apathy toward planning, administrators at Brottman had nonetheless retained the services of a marketing research consulting firm for many years. The firm was charged with delivering an annual report on community-wide attitudes, opinions, and beliefs about the entire patient service area. From an outsider's perspective, it appeared to serve more as a report-card than a basis for diagnosing key opportunities or threats. Every year, a telephone survey of 400-500 randomly-selected households with numbers listed in the local phone directory was conducted resulting in usable samples generally ranging between 300-350 usable responses. All respondents were asked to confirm their addresses with the local directory. The questionnaire was suitable for telephone delivery and asked several qualifying questions about each hospital. Brottman was never disclosed as the sponsor. Profiles of city resident's opinions and general attitudes of the hospitals were compiled and compared longitudinally to previous studies. These profiles were then distributed to key administrators, discussed in administrative meetings, and portions were shared with employees through formal departmental meetings.

But as the role of the marketing concept in healthcare and hospital services grew in popularity and more research highlighted the potential of marketing activities to improve the

performance of the healthcare industry, administrators at Brottman began to turn their attention toward their delivery of emergency services. The nearest trauma center was over 70 miles away, and none of the three local hospitals was fully equipped to handle extensive, critical trauma, services. In addition, Brottman increasingly recognized the E-R as a gateway for those all important institutional first-impressions and the foundation for a lifetime of healthcare delivery opportunities. They had long been aware that proximity to an E-R was the foremost decision factor for most patients in a time of need.

Coincidentally, at about this same time, a major-name hospital from a neighboring, but larger city, announced plans to develop a satellite, convenient and emergi-care clinic in the city. The long-held assumption that proximity provided sanctuary, was about to be challenged as never before. Thus, quickly rising on the list of their developing research priorities was the need to identify consumer preferences for all the city's emergency rooms, and to more fully assess the potential of the E-R to provide competitive advantage against the invaders.

## MARKET PLANNING

Among the many models available to aid in the diagnosis and measurement of impact of changes in key marketing parameters, Markov analysis (MA) has proven useful in a variety of applications (Garg & McClean, 2009; Bala & Mauskopf, 2006; Barton, et al 2004; Portela & Simpson, 1996). It has its roots in basic probability theory and has been useful for projecting the effect or impact of present policies on future market positions. By extrapolating current market shares through the use of transition probabilities, estimates (or simulations) of equilibrium market shares can be generated.

If a firm were to determine that its future market share was jeopardized by changing consumer preferences, it could conceivably take counter-measures to correct the undesirable trend. Similarly, if the opposite were true, it could engage reinforcing activity to enhance favorable trends. MA not only has the potential to assist in the identification of tomorrow's outcomes from today's marketing actions/inactions, but it also has the advantage of resembling the basic tenets of unit analysis (Cravens, 1982), or the disaggregation of competitive data for planning purposes. Since these units might generally represent distinctive sets of products, market segments, or organizational centers, the changing E-R situation at Brottman seemed well suited for a test of its applicability. Both the long-term assumptions about the stability of three hospital's market shares as well as the impending and dramatic competitive intrusion, added further appeal for its application.

Two elements of the survey instrument which presented the opportunity to apply MA were (1) a measure of the physical proximity of each respondent to their nearest E-R, and (2) a measures of each respondent's preference for an E-R in the city, in the event an emergency situation occurred. Each respondent's residence was identified on a city map and the distance to the nearest hospital was determined based on straight-line measures. There were a few cases where respondents were located equidistant from two hospitals and they were omitted from this study.

Table 1 presents the results of categorizing respondents by virtue of their actual proximities to the nearest hospital E-R and compares these market share estimates with the historically popular assumption of equal shares based on geographic location. West Ridge was shown to have a slight competitive advantage based on proximity, where 35% of the respondents were located most closely to West Ridge. St. Johns was shown to have the fewest respondents

located nearby with 30.3%. As expected, market shares based on physical proximity were essentially equivalent, although no statistical test was performed to confirm this finding. Based on this outcome it is reasonable to conclude that the market share estimates produced by the historical assumptions model actually have some credibility.

Table 2 begins to illustrate a more complex and dynamic situation. Based on the stated preference data, market share estimates shift dramatically. St. Johns and Brotzman shares jumped significantly while West Ridge appears to give up considerable shares to both. Where West Ridge was shown to have the competitive advantage based on proximity, its market share under the preference data model dropped to the lowest of all three at 23%. Alternatively, St John's and Brotzman's market shares jumped to 37% and 40% respectively.

Based on these disparate results from assumedly equivalent estimations of market share, the next logical question was how to explain the shift in market share away from West Ridge toward both St. John's and Brotzman in roughly equal magnitudes. Recognizing that each hospital could be expected to gain and lose share to each other, the idea of incorporating a transition probability matrix to portray these potential flows seemed a natural and logical outgrowth. Absent the behavioral and longitudinal data necessary to provide literal measurements of the various flows, the question was how to derive reasonable estimates? The solution chosen and that drives the remainder of this paper was to cross-tabulate respondents by the hospital they were physically most proximate to, by the hospital for which they had stated a preference. Table 3 presents the "simulated" transition matrix resulting from this cross-tabulation.

The transition matrix provides new planning insights for any of the three hospitals. The "flows" of patients from geographic areas once considered stable and insulated from competitors and the potential volumes of the flows provide a useful depiction of potential patient behaviors. In this case, St John's and Brotzman would retain practically identical shares of their most proximate patients, and lose almost identical shares to each other and to West Ridge. On the other hand, West Ridge would lose considerable shares to the others while retaining less than half its most proximate patients. Thus, the basic structure of MA permits a simulated portrayal of the dynamic exchange of patients between these hospitals.

In addition, this matrix also permits the extrapolation of these flows into a future, albeit hypothetical, equilibrium or steady-state depiction of market shares, provided the current dynamics continue unabated. In other words, if the current patient trade-offs continued without interruption, MA generates the corresponding market share estimates. The third column of Table 2 presents the steady state market shares for each hospital, where St. John's obtains the single largest share, but only slightly higher than Brotzman's. Meanwhile, West Ridge's steady state market share drops precipitously to 16.9%, or less than half of the available, most proximate patients. For this demonstration, the current market shares were those traditionally assumed at the outset – each had a captive 1/3<sup>rd</sup> of the city's patients. Other possibilities could be substituted, and for the sake of accuracy, the most recent actual market share data should be used.

The disparities in market share estimates generated by the four approaches highlights the impending failure of West Ridge if remedial efforts are not forthcoming. That West Ridge's market share plunged precipitously when consumer preferences were considered (from 35% to 23%), and again when the trend was magnified by the passage of time (down to ~17%), is evidence of MA's capacity to generate managerial insights from the creative use of patient feedback and simple proximity data. Consider the value to Brotzman, for instance, of envisioning the potential capture of a significant share of a traditional competitor's market and

its impact on future marketing planning. Once energized by this new perspective, and coupled with a greater focus on patient's needs, Brottman's capacity to withstand the incursions from neighboring hospitals would hopefully be greatly enhanced.

## SUMMARY

Three independent bases for estimating E-R market share were shown to produce results difficult for administrators at Brottman to reconcile. Each in the chronology offered, was intended to demonstrate increasing value to hospital planners as the measures involved more patient-specific and personal inputs. Starting with a historical and intuitive approach that merely assumed traditional levels of market share, to ones that brought into consideration the patient's physical proximity to the hospital E-R and actual stated preference respectively, each shifted the potential outcomes to demonstrate the competitive strengths of two of the three hospitals. The fourth basis for estimating market share used the MA framework and combined the two previous bases. The transition matrix permitted a view of the potential outcome of specific, albeit simulated, switching behaviors. Interestingly, to some extent the results challenge previous assumptions about the role of proximity in the selection of a hospital E-R.

Despite questions regarding the tenability of an equilibrium state or the assumption of marketing activity status quo, MA provides future market share projections as probable consequences of today's marketing activities. At the very least, MA provides the means for systematically anticipating potential consumer trends and requires hospital marketing planners to consider multiple influences affecting tomorrow's market positions.

Admittedly, the capacity of preference data to withstand the test of association with actual choice-behavior was not investigated in this paper. It must be recognized as a necessary pursuit for future research, as must the appropriateness of combining proximity and preference data to generate realistic transition probabilities. Perhaps other surrogates can be incorporated more effectively as share determinants, such as historical E-R choice behavior, and the scope of future investigations should be expanded to include additional hospital units (e.g. ambulatory care, orthopedics, etc.), and other health care scenarios.

Finally, although the case study which served as the backdrop for this paper may oversimplify the challenges associated with hospital marketing planning and use of MA, the objective was to illustrate both the success and the various approaches of one hospital's efforts to integrate a much-needed marketing concept into their planning activities. There can be little doubt that insights gained through their exposure to the various estimates of market share, and most notably through the steady state scenario, Brottman's administration adopted a whole new perspective on the challenges they were facing.

Table 1. Market Share Estimates: Historical Assumptions and Actual Proximity

Hospitals*	Market Share Under Historical Assumptions Model	Market Share Under Actual Proximity Model
St. John's	~33%	30.3% ( <i>n</i> =91)
Brottman's	~33%	34.6% ( <i>n</i> =104)
West Ridge	~33%	35.0% ( <i>n</i> =105)

Table 2. Market Share Estimates: Preference Data and Steady-State

Hospitals*	Market Share Under Preference Data Model	Steady-State Market Shares
St. John's	37.0% ( <i>n</i> =111)	41.6%
Brottman's	40.0% ( <i>n</i> =120)	41.4%
West Ridge	23.0% ( <i>n</i> =69)	16.9%

Table 3. A Simulated Transition Matrix Via Crosstabulation

Stated Preference for an E-R			
FROM / TO Closest Proximity to E-R	St. John's (n=111)	Brottman (n=120)	West Ridge (n=69)
St John's (n=91)	60.4% (n=55)	26.4% (n=24)	13.2% (n=12)
Brottman (n=104)	27.0% (n=28)	60.6% (n=63)	12.5% (n=13)
West Ridge (n=105)	26.7% (n=28)	31.4% (n=33)	41.9% (n=44)

### AUTHOR BIOGRAPHIES

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