
Volume 12, Issue 2 / 2010 - Matrix

Concept Mapping for Healthcare Organisations

Part one of this series in the last issue of (E)Hospital introduced the topic of concept mapping for healthcare organisations focusing on the theory behind the concept and underlining the importance of marketing. This second, and final part shows us examples of concept mapping in action.

DME Based Concept Mapping Methodology: Coordinated Care Research

The Life Institute of Albany, New York, situated in the Albany Veterans Administration Hospital, began to conceive of a new market entry of coordinated care service for patients suffering chronic diseases of aging, patients with terminal illnesses and family caregivers of such patients. Given that the service did not exist for the market, the Institute thought creating a large enough market to sustain the service was necessary. Recognising the need to establish the service in the market quickly and not fully experienced in the development of marketing messages, the Institute's executive management decided that a sound research and measurement approach was needed. They agreed to a concept mapping market research project.

Research began once permission for access to a sample of the population of potential customers at a series of locations in Albany, New York was granted. Those locations included senior centres in Albany, New York with which the Life Institute had affiliations. A set of open-ended questions was posed to the potential market respondents. While the questions guided the interview, as in focus groups, the intention was to engage the respondents in a conversation. The following questions were asked :

1. If you or your family member (parents, spouse) became seriously ill, for example, heart disease, Alzheimer's disease, cancer, what help or services would you imagine you might need or want for yourself or your family?
2. Imagine the serious illness is worsening and requiring additional care. What added help or services do you think would be needed as the health of you or the family member became poorer?
3. Imagine assistance is needed in understanding and managing help and services for a serious illness. What do you think you might need help in understanding or in managing those services?
4. In addition to what we have already asked, do any other ideas come to mind about serious illness in general? Imagine your income and health insurance coverage are about the same as they are now when you or a family member became seriously ill.
5. If some of the help or services you needed were not covered by insurance, what help or services would you be willing to pay for?
6. If you needed help understanding or help managing services, which services would you be willing to pay someone to manage for you or give you advice about?
7. How much would you be willing to pay for that advice and/or management?
 - How much per month?
 - How much per year?

The responses were recorded and then analysed using specialised cluster analysis software. The resulting concepts were:

- Help coordinating bills;
- A sympathetic person to talk to;
- Transportation;
- Understanding and coordinating doctors' information;
- Housekeeping;
- Understanding and coordinating insurance information; and
- Medical homecare.

These concepts were then submitted to a DME survey generator, creating a survey arraying service attributes from the cluster analysis to include the Life Institute's coordinated care service, titled Care Support of America or CSA, a prepaid health package, and the Self. The resulting questionnaire is found in Exhibit 1. The concepts chosen as the reference frame came from the domain of concepts as the final pairs.

The distance questionnaire was administered to a convenience sample of 115 respondents. The respondents were selected using a convenience sample with the intention of performing demographic analysis to determine market representation. The respondents were chosen from a close approximation of the potential market sought by the coordinated care services programme. The distance questionnaire was administered to participants at the Family Business Resource Council as well as to graduate students in the Graduate Programmes in Management at Sage Graduate School, specifically from the Health Services Administration, Public Administration, MBA, and Organisational Management programmes. These respondents appeared to represent potential caregivers of parents and other relatives who would be in need of coordinated care services.

Dimensionality of Concept Analysis

In consideration of Bigne, et al., analysing the pattern of the conceptual space in which magnitude estimation based concepts can reside is critical to the analysis. Therefore, uncovering the number of dimensions in the space was the first step to undertake in the analysis. The dimensionality of the space is an extension of multidimensional scaling. Human cognition, in concept mapping analysis, exists in conceptual space in the same way that physicists conceive of and measure interstellar space. Cognitive space is curved in the same way that physicists observe interstellar space. There can be two types of space in multidimensional concept mapping methodology, as there are in physics; Euclidean, consisting of flat dimensions and Riemannian, consisting of curved dimensions. As a result, understanding the bending of the

space around product attributes is essential.

The number of Euclidean or plane space dimensions uncovered was seven and the number of Riemannian or curved space dimensions was two. This finding is particularly noteworthy because the meaning of the space in which the product attributes or concepts is found significantly affects the interpretation of the distance between and, ultimately, among the product attributes or, in this case, the coordinated care services attributes. Figure 1 is the graphic representation of the resulting map based on the distance data.

While the analytic software is able to represent the product attributes or concepts in three dimensional space, the map displayed here is the two dimensional representation. Thus, the distances represented in the map cannot clearly demonstrate the curvature. Nevertheless, the space is curved and, therefore, must be interpreted numerically.

The most meaningful way to interpret a multidimensional space in DME concept mapping is to represent the data between pairs in a rank ordering based on distance and space curvature. Given the curvature of the conceptual space for the coordinated care services, adding a third concept became important to the development of the persuasive messages. Using the three concept/ product attribute combination changed the concept combinations.

Persuasive Message Content

Based on the combinations, relative distances, and the interpretation of the conceptual space in which they exist, a series of persuasive messages, i.e., marketing messages, was generated. At this point, creativity was combined with the multidimensional concept mapping research. The resulting messages are found in Exhibit 2. As can be seen from the messages generated, a combination of the most important product attributes or, concepts, added to a marketing context for coordinated care services, has been produced.

In addition, the creativity portion of marketing messages for coordinated care services was associated with appropriate message delivery media. Message 1 was determined to be most effective and, therefore, should be delivered using radio. Messages 2-9 were determined to be most effectively delivered by print ads and webpage copy making it a coordinated marketing campaign. Given the complexity of the space and the three concept combinations, radio media were thought to be the strongest delivery mechanism. The remaining messages were considered to be supportive. The combination of media was based not only on the map of product attributes but also on the budget of the non-profit organisation.

The delivery of messages concerning CSA and the potential customer is the process by which the key marketing concepts are moved closer to "you" or self. The distance between the product or, in this case, service, specifically, Care Services of America (CSA), represents market share. The closer the product or service moves toward "you", the greater the market share gained.

In order to understand what the psychological elements of the messages are to be is, in large measure, derived from the open ended data using software applying a form of neural network analysis or how consumers think about the context of the product, what they think about in addition to the context of the product or services, what related concepts consumers think about in the context of the product or service. Since the DME concept mapping begins with neural network analysis of potential caregivers, it provides natural categorisation of product attributes generated by potential caregivers rather than by researchers.

The attribute clusters when measured with DME give the researchers/marketers further information. Attribute clusters reveal the psychological and other attitudinal elements. Resultantly, marketing and persuasive messages can be crafted in a more comprehensive way. This kind of information is particularly important, not only for the generation of persuasive messages with likely greater impact, but also because a predictable amount of market share is generated by those messages. Providers may then be in a more favorable position to advertise, promote, and otherwise persuade potential market members to accept and buy their products and/or services.

Based on the results of DME concept mapping research in other marketing contexts, the CSA messages have a high probability of success. Naturally, the executive management of the Life Institute and CSA must apply the messages and the delivery mechanisms as provided by the multidimensional analysis and the creativity of the market researchers. With these elements present CSA can measure the results of its persuasive messages against the market share predicted by the data because of the measurement of distance between the concepts of self and the CSA service. The map of DME based concepts provided CSA executive management with a plan to navigate the market terrain uncovered here.

Conclusion

The CSA research shown here allows for mapping of consumers as the end user or consumer. The mapping methodology directs itself clearly at message content. The message content can be adapted to several forms of media. The message content can be creatively organised with graphics and images based on demographic data collected at the time of the interviews and DME questionnaire completion.

The DME map data are also the basis for practical applications beyond the first map and resulting concepts. The DME map may be added to and compared directly. Since the data are on a ratio scale using a reference point pair, the map can be added to for greater understanding of the psychological concepts and dimensions in the marketing context.

However, the first order of importance in building maps of concepts and space is to produce health marketing and outreach messages that can persuade patients to seek treatment, remain in treatment, seek health prevention, and persuade consumers toward other important health outreach programmes. In terms of marketing, the service providers need to understand the thinking of their consumer and community bases in order to attract users in sufficient numbers to continue to supply needed health services. These areas are resource dependent and the messages need to be addressed with such circumstances in mind. The most powerful persuasive messages are needed. Using DME based concept mapping provides the power of measurement- derived content while considering important psychological factors.

Published on : Sun, 1 Aug 2010