

Positioning a Radio Station

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Abstract

We present a density estimation based product positioning approach to best position a radio station in a new market or reposition itself in an existing market. We also combine perceptual research with music research to provide a programming strategy in the form of a recording artist list that is associated with the radio station's suggested image.

Introduction

Aggressive competition, an aging population, and the progressive shifting of audience from AM stations to FM stations make radio station positioning an important and dynamic problem. Because the positioning of the radio station is the key to attracting advertising dollars, few marketing principles have been as widely accepted in broadcasting as positioning.

Radio has a high ratio of fixed to variable cost. Even a small market, low wattage station must start with a healthy investment in equipment, facilities and people to operate and comply with government regulations. Most other costs, including production and distribution costs, however, remain about the same whether the audience reached is 500, 5,000 or 500,000. These economies of scales make frequent repositioning of radio stations the rule rather than the exception in most major markets as radio programmers search for just the right format and music mix. Increasing the size of the audience reached means not only additional revenue because of higher rates for advertising time, but also an increased market value for the station per se. This is true because broadcast properties are generally valued and sold on the basis of some simple multiple of cash flow. Positioning, therefore, can have a direct and immediate effect on both profitability and eventual net worth.

In this paper we use product positioning methodology to develop a positioning strategy for radio stations. This approach estimates the potential audience share for a radio station. A positioning strategy for a new radio station or a repositioning strategy for an existing radio station may be developed to maximize the audience share. The approach also provides a programming strategy in the form of a recording artist list that is associated with the radio station's suggested image.

Radio station research may take several forms. Perceptual research and music research are the most common. Perceptual research measures consumer perception of competing products (in this case radio

stations and recording artists), while music research identifies the frequency with which consumers listen to various music types or songs. Perceptual research uses telephone studies, questionnaire response, or focus groups to measure consumer attitude and perception about radio stations. Music research is based on the simple premise that people know which songs they like and people do not willingly listen to music they dislike. Consequently, they tend to listen to radio stations that play more of their favorite songs. Music research identifies these songs. In this paper we combine perceptual and music research to help radio programmers develop an optimal positioning strategy for radio stations.

Radio station managers and programmers are faced with the following problems and questions. (1) How do listeners perceive our station? (2) Is our station positioned close to what many listeners prefer? (3) Should we change the format of our radio station? (4) How do we reposition our station to increase audience share and advertising revenues? (5) What is the expected increase in audience share if we reposition our station? (6) What recording artists should we include in our programming to change our image?

The methodology illustrated in this paper will help a radio station manager/programmer answer these questions and aid in developing an optimal programming and positioning strategy for radio stations.

Radio Station Positioning

Radio stations use terms such as "Talk Radio", "Real Country Radio", "Classic Rock", or "More Music - Less Talk" to describe both the general format types they have chosen and their own unique interpretations of those formats. These simple slogans are usually based upon more fundamental, formal, and lengthy positioning statements which spell out in detail both the image that a station wishes to create for itself and how that image

is to differ from those of its competitors. Billboard magazines and Arbitron also provide "standard" formats, such as "Adult Contemporary", which provide a shorthand for discussing programming among those in the industry. In theory, a station can achieve a particular position in its market by modification of its programming mix so that what it airs accurately corresponds with the image described in its positioning statement, and by aggressive promotion which successfully communicates that image and locates the station in the mind of the consumer vis-a-vis the images of the other competitors. While positioning statements can represent fact, indicating the position a station currently occupies in a market, they are more likely to be goal-oriented and indicate what a station would like to eventually become.

Part of the ready acceptance of the concept of positioning by broadcasters comes from the fact that most stations are already positioned in the minds of the public by the very nature of the frequencies they are assigned and by the general type of programming they provide. The image differences between VHF and UHF in television and between AM and FM in radio have been well documented (Hersch, 1987). Within television, differences in position have traditionally existed between network affiliates (with their heavy load of network programming and their emphasis on local news coverage) and independent/cable stations (with their often eclectic mix of movies, reruns, syndicated programs, and sports) (Rust, and Donthu, 1988; Litman, 1979). Within radio, broad positions in the market are usually determined by basic type-of-format decisions such as music, talk, Black, Spanish, religious, etc. (Glasser, 1984).

To a great extent, the shift by broadcasters from working within the limitations of *de facto* positions to the formulation of explicit and proactive positioning statements and strategies can be traced to the proliferation of new radio and television stations. The number of radio stations in the U.S. has increased from 6579 in 1971 to 10681 in 1991 (Broadcasting, 1991). The current radio advertising spending is estimated to be around \$9 billion (Coen, 1990). This growth in the number of broadcast outlets has meant that most stations have found themselves not only with an increasing number of competitors *per se* (each trying to attract the same demographic groups), but also with the phenomenon of one or more "me-too" competitors airing virtually identical programming. In radio, this has meant that there are likely to be several stations in the same market playing essentially the same music (for example, two or three Adult Contemporary stations) or airing essentially the same news and information features. In this environment, where products are identical or only marginally different, broadcasters quite naturally saw in positioning a way to distinguish themselves from their competitors (and gain market share and maximize viewer loyalty) by identifying what viewers wanted them to be and by

moving themselves (through programming changes or pure image manipulation) to that point.

While positions can be identified and positioning statements developed exclusively on the basis of the expertise (or caprice) of the broadcaster, audience research is quite frequently employed (Harker, 1985). A common approach is to have a sample of audience members rate or indicate their preferences to pre-specified lists of program elements, names of newscasters, names of artists, or titles of songs. Typically, the sample is also asked to use the same prespecified lists to describe one or more local stations. From these responses, descriptive statistics such as frequencies and means can be computed and subsequently used to rank-order audience preferences and to identify the images of individual stations. Qualitative positioning statements can then be written based on an evaluation of these images and their relationships to each other and to the preferences of groups or segments of the audience.

Perceptual Mapping and Radio Station Positioning

In audience research, if questions are worded and data is collected in such a way that the calculation of means is possible, the relative position of each station included can be plotted on a continuum. For example, on a continuum between "oldies" and "current hits." It is also possible to show relative position using two or more dimensions. For example, using the "oldies/current hits" dimension and adding a "more music/more talk" dimension. The dimensions typically used in drawing a positioning graph or map are the most important dimensions in terms of determining station preference.

Whatever techniques are employed and whichever positioning strategies are adapted, all of the approaches remain dependent upon the original list of program elements, names of newscasters, names of artists, or titles of songs. In other words, positioning strategies will always be a function of the preexisting beliefs of the broadcaster and the researcher rather than being truly audience based. Since competing stations will tend to do similar types of research, the result can easily be the perpetuation of "metooism" rather than the discovery of any new, distinctive, and highly competitive position for a station to occupy.

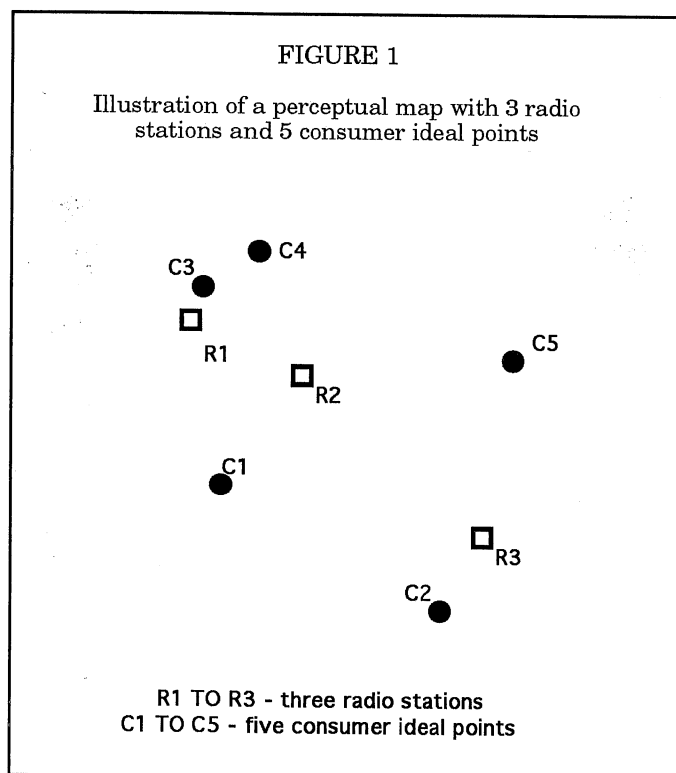
There is a need to develop positioning strategies that are based on audience perceptions only. The preexisting beliefs of the broadcaster or researcher should not contaminate audience perceptions. In marketing and advertising research perceptual mapping techniques such as multidimensional scaling are being used frequently (Donthu and Rust, 1990). These techniques are able to jointly plot consumer perceptions of existing products and consumer preference for an ideal product. In the remaining of this section we will describe the use of a

perceptual map based on a nonparametric density estimation product positioning methodology to position radio stations.

Radio stations, like other businesses, succeed by keeping close to the customers. To most radio stations, keeping close means playing music that the listeners enjoy, and positioning the station such that the listeners perceive it closest to their belief of an "ideal" radio station. Marketers talk about this issue as being "product positioning." What is referred to is the position of a product in perceptual space. In other words, two products which are perceived by consumers as very similar will be close to each other in the perceptual space, while two that are perceived as very different will be far apart.

All things being equal, it is advantageous to be positioned uniquely, with no close competitors, since that means the product will monopolize that part of the market. However, it is important to recognize that this unique position in the perceptual map will be profitable only if there exists adequate demand for that position in the map. For the station to have a large audience share, it is necessary that a large number of listeners prefer that location in the perceptual map. Hence, for optimal radio station positioning it is necessary to jointly map listeners preference and perception of radio stations.

Figure 1 is a hypothetical joint map of three competing radio stations (R1, R2, R3) and five listeners (C1,



C2, C3, C4, C5). The consumer locations C1 through C5 represent the five consumers' "ideal" radio stations. Given this perceptual map we may develop positioning or repositioning strategies for the radio station under the following assumptions. (1) Listeners are homogeneous in their perception of the three radio stations but have heterogeneous preference. (2) Listeners are most likely to listen to the radio station closest to their ideal point in the perceptual map. (3) The probability of a listener listening to a radio station is inversely proportional to the distance between the listener ideal point and the radio station in the perceptual map. (4) The distribution of listener ideal points in the perceptual map may be represented by a density function. This density function may be visualized as a surface with mountains and valleys. Mountains would be places in the perceptual map where there are many ideal points, and valleys would be where there are few listener ideal points.

These assumptions have been well established and are widely used in marketing studies (Shocker and Srinivasan, 1974; Schonemann and Wang, 1972; Donthu and Rust, 1989; Rust and Donthu, 1988) and represent the general thinking in that area. In addition we assume that we are assessing the submarket which competes primarily on the basis of music. We thus exclude news/talk shows, etc., from our analysis.

Given this perceptual map of competing radio station and the density function representing the distribution of listener preference in this map, it would be best for a radio station to position itself in a "mountainous area" unless there is too much competition there. We advocate the following procedure for positioning a radio station. (1) Obtain station preference and recording artist preference from a random sample of listeners. (2) Map the stations, sample listener ideal points, and recording artists in a perceptual space using multidimensional scaling. (3) Estimate the population density surface of listeners ideal points (representing the distribution of listener preference) in this space using nonparametric density estimation. (4) Search for the market position which maximizes market (audience) share, based on the listener density surface and the location of competing stations. (5) Characterize the optimal location by the recording artists which are in the vicinity. This provides guidance as to what sort of playlist should be used.

The mathematical details of this approach are quite involved, but may be found in Donthu and Rust (1989), Rust and Donthu (1988) and Silverman (1986).

From a managerial point of view it is important to understand what the optimal location means or how a radio station programming may be changed so as to position the radio station at this location in the percep-

tual space. At this point it is important to relate music research to perceptual research.

Recording artists are positioned in the perceptual map so that any point in this space may be characterized by the recording artists around that point in space. A radio station programmer may design the playlist by including artists who have the same image as the recording artists associated with that position in the perceptual map. For example if a point in this space is surrounded by artists such as Rolling Stones, Rod Stewart, and The Who, then clearly, the point may be characterized as "old rock" or "60's rock". The application discussed in the next section will further clarify this combination of music research with perceptual research.

Application to Radio Station Positioning

We now illustrate an application of the density estimation based product positioning methodology to determine the optimal programming and positioning strategy for a radio station. The sample consisted of random residents from a large southwestern city. 500 questionnaires were mailed out to the residents with a personalized, hand-written cover letter, for the purpose of increasing the response rate. Of the 155 questionnaires that were returned (response rate = 31%), 147 were usable.

The respondents were first asked to list four of their

favorite recording artists or groups. Second, they were provided with a list of the top ten radio stations in the market and were asked to pick the three stations they listened to most often, and rank order them. They were also asked to indicate stations with which they were not familiar. Demographic data such as age, sex, student/non-student, and home zip code were also collected.

Table 1 shows the characteristics of ten radio stations used in this study. Actual market share for each station (column 4) was determined by computing the ratio of its total reach to the combined reach of all of the stations (as reported by concurrent Arbitron measurement). Other details in this table will be discussed in the next section.

The ALSCAL (Takane, Young, and Leeuw, 1977) multidimensional scaling routine was used to obtain the perceptual map using the radio station choice data provided by the consumers. The primary objective of multidimensional scaling is to map objects in a multidimensional space such that relative positions of the objects reflect the perceived degree of proximity between all possible pairs of objects. The main advantage of this technique is that it allows the researchers to determine consumer perceptions without the use of predefined product attributes.

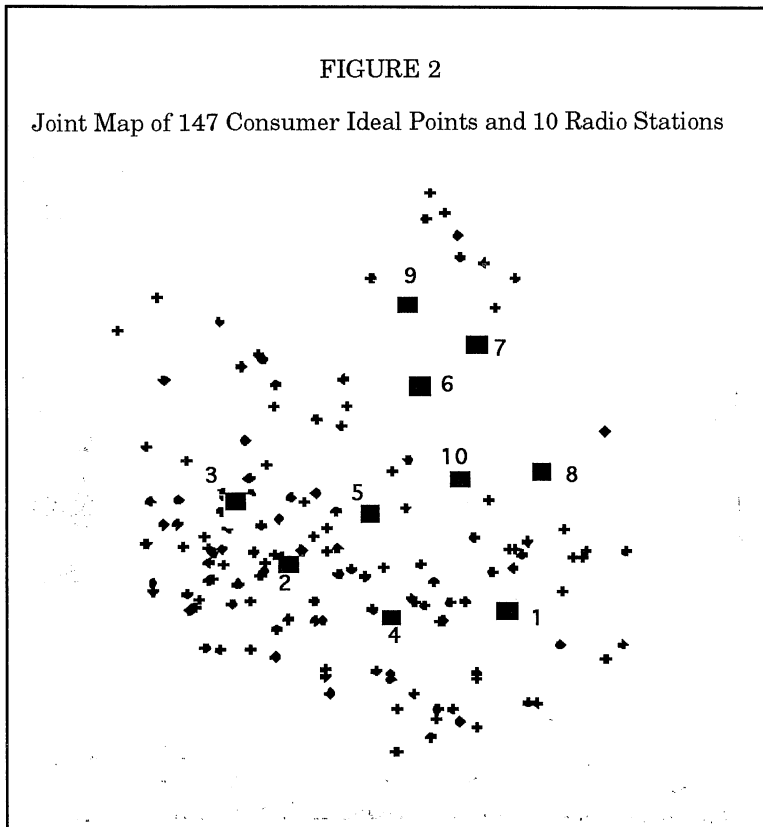
Figure 2 is the perceptual map of the ten radio stations used in this study. The numbers (1 to 10) correspond to the radio station numbers in Table 1. The other 147 points represent the 147 consumers who provided the data for this study. Each of these points are the ideal points for the corresponding consumer and represent their conception of an ideal radio station. If a radio station was positioned at that point, then that consumer would listen to it 100% of his or her listening time. However, given that is not the case, they will listen to the existing station with a likelihood which is inversely proportional to the distance between their ideal point and the station.

As discussed earlier, the distribution of these 147 consumers ideal points in the space may also be represented by a density function as in Figure 3. The mountains and peaks in this map represent areas of high density of ideal points and hence attractive positions for a new radio station or a repositioning radio station. However, at some of the peaks there may already be existing radio stations positioned and hence these peaks may not necessarily be attractive locations for a new or repositioned radio station, be-

TABLE 1
Radio Station Characteristics and Market Shares

Station Number	Format	Actual Market Share	Estimated Market Share	Estimated Eventual Market Share (after # 4 moves to optimal location)
1	FM (Country)	18.6	16.3	23.4
2	FM (Top 40)	18.3	19.5	14.3
3	FM (Rock)	12.8	20.9	8.3
4	FM (Rock to L. Rock)	9.3	9.5	14.8
5	FM (MOR)	9.2	11.1	8.9
6	AM (Oldies)	4.7	2.7	3.3
7	AM (Oldies)	7.7	5.2	5.8
8	AM (Country)	4.3	4.9	4.9
9	AM (Urban)	6.1	4.1	7.2
10	FM (BTFL music)	8.8	6.1	9.2

Note: Stations are shown in Figure 3 using above Station Numbers.



cause there may be too much competition.

Estimated market shares for all ten radio stations were computed using the density estimation based product positioning methodology and are reported in Table 1. In spite of the relatively small sample size used in this study the estimates were comparable to the actual (published) market shares.

Assuming that station number 4 is interested in repositioning itself, to maximize its market share, the estimated optimal location for station 4 is shown in Figure 4, which is an enlargement of the area around station 4 for better visual inspection. The predicted change in the market's market share structure after station 4 moves to a new location is also reported in Table 1. This position is predicted to eventually increase the market share for station 4 by over 5% points, assuming that there is no significant competitive reaction.

It is not always necessary that a station reposition itself to maximize its market share. For any product location (including sub-optimal ones) the model may be used to predict the market share. It is also important that the manager of the radio station understand what each product location means. In this application, recording artists or groups are used to describe locations in the

space. Hence, unlike some other multidimensional scaling applications, it is not very important to name directions (or dimensions) in the space. Here it is more important to associate station locations in space with images of recording artists.

For each station the list of artists associated with its location in the perceptual space was determined using conditional probabilities (Rust, and Donthu, 1988). The conditional probability is the ratio of the number who listed the artist as their favorite and had the radio station in their evoked set to the total number of people who listed the artist as their favorite. An artist was inferred to be associated with a station if the inferred conditional probability exceeded 0.5. Geometrically, this means that we may construct a circle around each station location, with artists found within the circle inferred as associated with the station. The results of the above application for Station 4 is seen in Figure 4. This provides a surrogate for station identity. As a result, each station's image may be characterized by its set of associated recording artists.

Figure 5 shows how a station's target image may be inferred from the recording artists associated with the station's new target location in perceptual space. Circles around the present and the estimated optimal location of station 4 bound the recording artists associated with each location.

While the list of suggested recording artists is not entirely consistent (e.g. Placido Domingo does not seem to fit with the others) a pattern can be discerned. From the artists and groups associated with the Station 4 it can be recommended that station 4 play less older rock music and play more contemporary rock. The general "lite rock" positioning is maintained. The data for this illustrative application was collected in late 1980s and hence the artist list appears outdated. Here the main objective is to demonstrate the application of the methodology.

This association of radio station positions in the map with artists included in the lists suggests the image for the radio stations. Recording artists who have similar images to those on the lists should be considered for the playlist of the station. Determining the image which unites the artists on the suggested list unavoidably remains a subjective and intuitive process on the part of the manager.

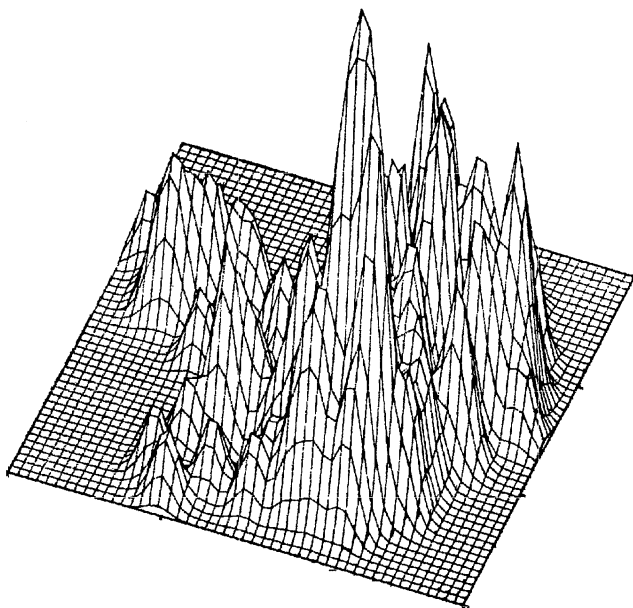
Concluding Remarks

In the pursuit of audience share, rating and advertis-

References

FIGURE 3

Density Map of Ideal Points Representing the Distribution of Consumer Preference in the Perceptual Map.



ing revenue, radio stations are frequently involved in positioning and repositioning activities. This may involve changing formats, changing image, and/or changing the playlists. The methodology used in this study uses well-established marketing concepts and models, and combines perceptual research with music research, to achieve this goal. It helps radio stations identify optimal positioning strategies and determine playlists which are compatible with the suggested image of the radio station.

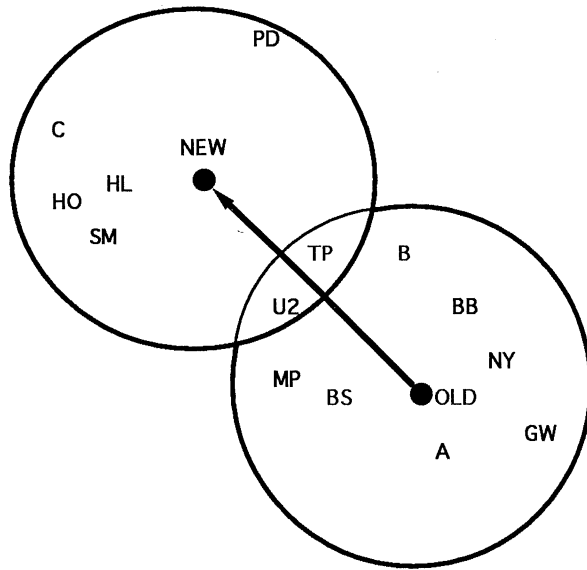
Suggestions for Future Research

Future research in this area should focus on two areas. First, it should include situational variables which influence the listening habits of consumers. For example, day parts or mood or activity will influence the preference of consumers. Second, given the aggressive competition and fragmented market conditions, radio stations are now forced to spend a lot of money on promotions such as prizes, call-in contests, etc. This becomes even more important for a radio station involved in a repositioning campaign. Thus incorporating the cost of repositioning is a promising topic for future research. ■

1. Coen, Robert, "Radio Ad Spending Closing in on \$9 Billion", *Broadcasting*, June 25, pp. 44, 1990.
2. Donthu, N. and R. T. Rust, "Estimating Geographical Consumer Densities Using Kernel Density Estimation", *Marketing Science*, Vol. 8, No. 2, pp. 191-203, 1989
3. Donthu, N. and R. T. Rust, "Review of Multidimensional Scaling", in *Cable Television Advertising: In Search of the Right Formula*, Batra and Glazer (eds.), New York: Quorum Books, 1990
4. Glasser, T. L., "Competition and Diversity Among Radio Formats", *Journal of Broadcasting*, pp. 127-142, 1984.
5. Harker, R., "Keeping Close to the Customer Through Music Research," in *Radio in Search of Excellence*, Washington, DC.: National Association of Broadcasters, 1985
6. Hersch, P., "Striking Gold in the FM Band", *Channels*, Vol. 35, No. 1, pp. 58-59, 1987.
7. Litman, B. R., "The Television Networks, Competition and Program Diversity", *Journal of Broadcasting*, pp. 393-410, 1979.
8. Rust, R. T. and N. Donthu, "A Programming and Positioning Strategy for Cable Television Channels," *Journal of Advertising*, Vol. 17, No. 4, pp. 6-13, 1988.
9. Schonemann, P. H., and M. M. Wang, "An Individual Difference Model for the Multidimensional Analysis of Preference Data," *Psychometrika*, Vol. 37, pp. 275-309, 1972.
10. Shocker, A. D., and V. Srinivasan, "A Consumer Based Methodology for Introduction of New Products Ideas," *Management Science*, Vol. 20, pp. 921-937, 1974.
11. Silverman, B. W., *Density Estimation for Data Analysis and Statistics*, New York: Chapman and Hall, 1986.
12. Takane, Y., F. W. Young, and J. de Leeuw, "Nonmetric Individual Differences Multidimensional Scaling: An Alternating Least Squares Method with Optimal Scaling Features," *Psychometrika*, Vol. 42, pp. 7-67, 1977.

FIGURE 4

Map of Artists Associated With the New and Old Location of Station 4



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- | | |
|---------------------|------------------------|
| ABBA (A) | Chicago (C) |
| Neil Young (NY) | Simple Minds (SM) |
| Mike Post (MP) | Phil Collins (PC) |
| U2 (U2) | Hall and Oates (HO) |
| George Winston (GW) | Barbara Streisand (BS) |
| Bread (B) | Placido Domingo (PD) |
| Beach Boys (BB) | Huey Lewis (HL) |
| Tom Petty (TP) | |