

# Research on the Association Rules of Marketing Resources' Demand and Supply in Grid Environment

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**Abstract**—This paper introduces processes and methods access to the demand for marketing resources, describes the steps for marketing resources planning and the marketing resources demand-supply model in grid environment, finally lists several association rules of marketing resources demand and supply. It provides a reference for enterprises to break the drawbacks of the traditional marketing model, to help businesses form the internal model of resource sharing, process optimization, and business collaboration, so as to guide the company's marketing activities.

**Keywords**—grid marketing; association rules; marketing resources

## I. INTRODUCTORY

Marketing has become the strategic factors for core competitiveness of enterprises. Traditional marketing management has the following drawbacks: functional partitioning, data redundancy, information within the closed and so on. Grid theory is advanced as the guiding principle of the resource-sharing ideas, has been used in biomedicine, transportation, resource exploration, commerce, finance, urban management and planning [1] and other fields. Chen ping believes that the grid is refined in accordance with the needs of management, all of the management area is divided into several cells [2]. Jiang ailin believes that the grid is a continuous region of space which is discrete according to certain rules, it forms many polygons, and each part is given a identifier [3]. As a new computing platform, grid has characteristics of distribution and heterogeneity, sharing and integration, autonomy and dynamic, abstract and virtual and so on, and it has the ability to integrate a variety of computing resources [4] [5].

Currently, grid theory is seldom used in the marketing field, but in the telecommunications, postal services and a few other companies with the initial practice and exploration, and lack of theoretical support. In this paper, we proposed the model of association rules about marketing resources' demand and supply under the background of marketing grid, to help the enterprise form the model of internal resource sharing, process optimization, business collaboration, to avoid the drawbacks of traditional marketing model, guiding the company's marketing activities.

## II. ACCESS TO THE NEEDS OF GRID MARKETING RESOURCES

There are two main aspects for access to the demand of grid marketing resources: one is the company initiatively to get

the demand of marketing resources. in order to meet the needs of future development, enterprises should predict the total demand of marketing resources, and make the marketing resource planning based on the total demand; On the other hand, each marketing grid unit directly proposes marketing resource requirements to the regional manager, the regional marketing leader will then report to the headquarters of corporate marketing, and finally the marketing headquarters is responsible for marketing resource allocation.

## III. MARKETING RESOURCES PLANNING

Resource planning is after the gaining of marketing resources' needs of each grid. Resource planning mainly includes human resource planning, material resource planning and financial resource planning. Human resource planning refers to the plan of required marketing staff during a given period for the marketing activities, including sales personnel, service personnel, daily operators, and marketing managers at all levels. Material resources planning refers to the plan of a variety of material consumption, including transport vehicles, loading and unloading tools, consumables, office supplies. Financial resources planning refers to the planning of the marketing expenses, such as marketing, staff salaries, travel expenses, transportation costs, warranty fees, advertising fees, and service fees.

Enterprise marketing resource planning is based on marketing resource requirements, so the accuracy of demand is very important for the resource planning. After resource planning, the business obtains marketing resources in accordance with the requirements. For the resources which companies currently lack of, it can be obtained by purchase or external recruitment, etc. For some requirements, it can be achieved by rationally re-allocation the existing resources. The flow chart of resource requirements for corporate marketing and resource planning is shown in Figure 1.

## IV. ASSOCIATION RULES BETWEEN RESOURCE DEMAND AND SUPPLY IN MARKETING GRID

Marketing resource requirements mapping is a collection of relationship from the enterprise's marketing resource sets to marketing grid resource requirement sets. All of this mapping is stored in a collection, forming the mapping library of marketing grid resources requirements. The approach to build the mapping library is as follows: firstly, establish the model of association rules between resource demand and supply in marketing grid taking advantage of business experience, then continuously adjust and improve the association rules model

based on the effect of resources allocation. As the business continue to standardize the marketing resource management and the marketing grid become smaller, companies need

quantitative tools to achieve the mapping between resource demand and supply in marketing grid. Grid marketing resource demand and supply model is shown in Figure 2

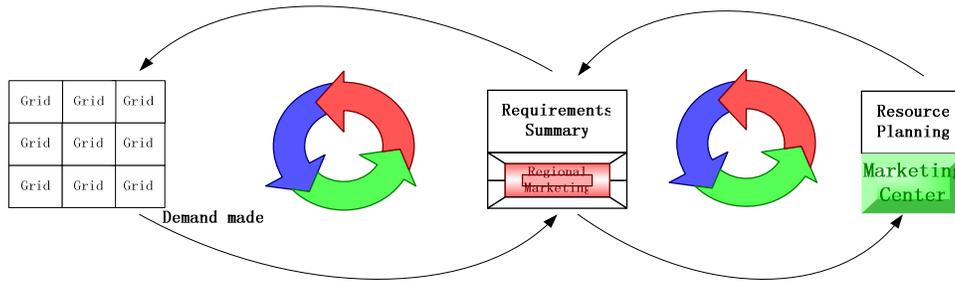


Fig1. Marketing resource requirements and resource planning flow chart

Under normal circumstances, for each resource element in the businesses marketing resources sets, there will be a corresponding element in the resource requirements sets of the marketing grid. If the needed resources do not exist in the businesses marketing resources sets, companies should be

timely access to appropriate procurement for the marketing resources. Conversely, if some elements in the businesses marketing resources sets are not used, the enterprise has not been effective to use the marketing resources.

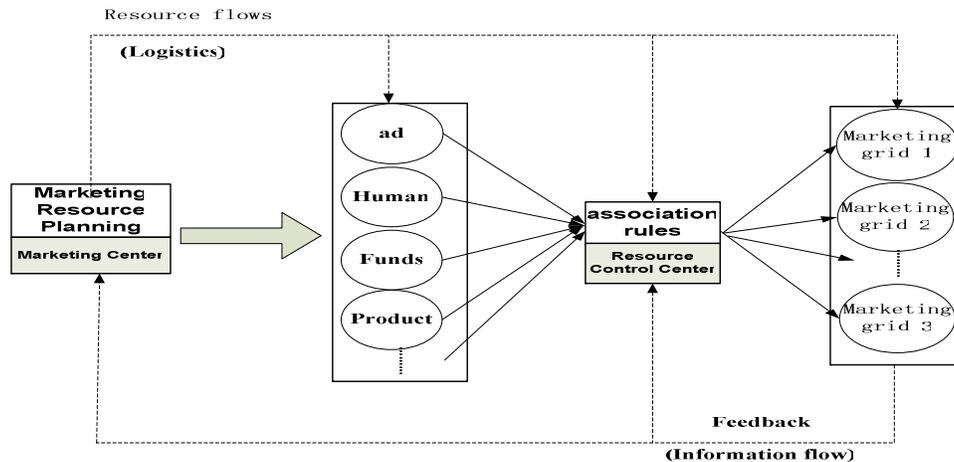


Figure2. Grid marketing resource demand and supply model

The model of association rules between resource demand and supply in marketing grid is a qualitative mapping model, there are four types of association rules: one rule one condition, one condition more rules, more conditions one rule and more conditions more rules.

A. One rule one condition

one rule one condition can be expressed as association rules "If A then B", if the conditions A exists, then the demand mapping strategy is using B. This form is more common in the enterprise, such as "If the lack of internal marketing staff, then external recruitment of marketing persons." More qualitative rules are described as:

- If A1 then B1;
- If A2 then B2;
- ⋮
- If An then Bn.

The formal description for a multiple criteria qualitative rule:

- If A1 then B1;
- else if A2 then B2;
- ⋮
- else if An-1 then Bn-1;
- else Bn.

such as:

If the expected return on advertising investment low; then invest less, or not to invest;

else if the expected return on investment is generally then investment should be moderate;

else substantial investment

### B. One condition more rules

one condition more rules can be expressed as "If A then B1 and B2 ... and Bn". If A condition exists, then the demand mapping strategy is using B1, B2 ..., and Bn.

### C. More conditions one rule

more conditions one rule can be expressed as: "If A1 and A2 ... and An then B". If all the conditions of A1, A2, ..., An exist simultaneously, then the demand mapping strategy is using B.

### D. More conditions more rules

more conditions more rules can be stated as: "If A1 and A2 ... and An then B1 and B2 and ... Bm". If all the conditions of A1, A2, ..., An exist simultaneously, then the demand mapping strategy is using B1, B2, ..., and Bm.

The selection of rules should be based on the different characteristics of various resources, for example, if the enterprise's marketing information flow is not smooth, the solution methods include: develop information systems related to their own business, purchase of commercial marketing management software, or outsourcing the information module to a third party; for lack of staff resources, the solution with the introduction or training; the case for lack of technical capacity, technical solutions have to buy the license or purchase technology, self-study, paid use of external technology, or seek external collaborative research; for short of funds, the solution are: bank loans, issuing shares or raising funds. Marketing needs of the grid for the marketing resources for purchasing, marketing, personnel needs, product demand, advertising needs, capital requirements, information needs of software tools and technical requirements, some of its resource requirements associated with the mapping rules are as follows.

For the purchase of marketing resources, there are the following rules:

Rule 1: If the required marketing resources is consistent with the business' long-term strategy and Capital adequacy Then purchase resources;

Rule 2: If the required marketing resources is consistent with the business' long-term strategy and enterprise' funds are limited and the company's existing resource allocation can be further optimized Then adjustments to optimize the allocation of resources.

For the demand of marketing personnel, there are the following rules:

Rule 3: If the required marketing personnel is consistent with the business' long-term strategy and human resources within the enterprise can't meet the requirement Then external recruitment of staff

Rule 4: If the required marketing personnel is consistent with the business' long-term strategy and marketing personnel lack of capacity and time allowed Then training.

For the needs of product and advertising, there are the the following rules:

Rule 5: If the customers in some grids seek for higher quality and desire for brand awareness then Advertising and extend the new car sales;

Rule 6: If the customers in some grid seek for high quality products and brand preference is stable then reduce the ads, promoting stable models;

The need for capital, the following rules:

Rule 7: If some grid's sales growth and market share are high and consistent with long-term development strategy then priorities to fully meet its demand.

Rule 8: If the grid demand for funds raised, either its sales growth or market share is high and the need for funds is very eager then meet their needs conditionally

For the needs of information software tools, there are the following rules:

Rule 9: If the grid is eager for the channel of information technology and the company have already set up information platform then develop marketing management software based on the existing information platform.

Rule 10: If the grid is eager for the channel of information technology and the enterprise's information technology foundation is weak then firstly conduct a feasibility, then start the Information technology, or purchase of commercial software.

For technical requirements, there are the following rules:

Rule 11: If some marketing grids propose new products which have a potential market and businesses without the ability to develop the technology then introduce the technology or purchase technology license.

Rule 12: If some marketing grids propose new products which have a potential market and enterprises have the ability to develop the technology and have sufficient time and capital adequacy then Self-development.

Rule 13: If some marketing grids propose new products which have a potential market and businesses without the ability to develop the technology and capital adequacy and sufficient time and have the right partner then joint development

## V. CONCLUSION

Firstly, this paper described the methods and process of obtaining marketing resources needs, then proposed the model of marketing resources demand and supply, finally, cited the association rules between marketing resources demand and supply. So as to help enterprise break the traditional marketing model's defects, and form the model of internal resource sharing, process optimization and business collaboration in a company, guiding the company's marketing activities.

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