

An AHP-based Research on Core Marketing-competence Cultivation and Evaluation

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Abstract: This paper expounds the connotation of core competence of the marketing personnel. Analytic hierarchy process (AHP) is adopted to decompose and analyze the core competence. Marketing expertise evaluation model is derived, with numerical values and their weights calculated. A quantitative method is adopted to solve the qualitative problem. This study casts light to core competition evaluation by introducing a new evaluating method.

Marketing professionals are indispensable to all enterprises. According to some statistics in China, every talent exchange meeting witnesses marketing personnel as the most popular and the most demanded talents since the mid-1980s. With the increasingly fierce market competition, the hotness of marketing talents will carry more weight. As the market competition goes increasingly fierce, the demand for marketing talents becomes more and more urgent. However, sales personnel also face high mobility and fierce competition among themselves, so the training of marketing talents is posed with a main task of equipping students with unique core competencies which could not be replicated.

Connotation for the Core Competence of Marketing Professionals

"Core competence" was first introduced by Prahalad and Hamel in *Harvard Business Review* in 1990. In different fields, varied connotations are attributed to this term, from the perspective of marketing, this paper is to develop its connotation as standing the crucial position with which to overpower rival and further secure greater competitive advantages. Therefore, it's a synergy of survival knowledge and technological know-hows, such as unique skills, management art and the application of marketing stratagems etc. The core competence may be tangible and measurable, or invisible and immeasurable, yet not replicable or bypassed by competitors.

The Basic Principles and Steps of Analytic Hierarchy Process

Analytic hierarchy process is a structured technique in decision making, which decomposes the decision problem into the mathematical objectives, with multi-criteria affecting the achievement of target. Then, model each element into a hierarchy by further decomposition. In doing this, we could explore the quantitative and qualitative aspects of the problem at all levels before further rumination by individual or group, so to find the priority.

Analytic hierarchy process is normally adopted by the following steps:

1. The target decomposition for a hierarchy

The ultimate goal is to be decomposed step by step. First, analyze criteria affecting a target, so to find out the policy makers, and then the criteria can be further broken down into elements affecting decision making, so to formulate the planning layer. From the target layer to the decision layers, then to the solution layer, ladder-like structure is built up.

2. The research for judgment matrix

Based on interviewing experts, scholars and senior professionals in relevant field of research, we ask every participants comment on evaluation criteria by scaling from 1 to 9, so that a judgment matrix is constructed according to the scores. Specific criteria as shown in table 1:

Table 1. 1 ~ 9 scale evaluation criteria.

Scale	Meaning
1	Posterior to comparison, we find two elements of the same position are equally important
3	Posterior to comparison of the two elements, one element is slightly more important than a element after it.
5	Posterior to comparison of the two elements, one element is a little more important than a element after it.
7	Posterior to comparison of the two elements, one element is much more important than a element after it.
9	Posterior to comparison of the two elements, one element is critically more important than a element after it.
2, 4, 6, 8	Intermediate values of adjacent -element judgment of the above-mentioned 1, 3, 5, 7, 9

3. Ranking for the weight set

Ranking is divided into two steps: first, based on pairwise comparisons of the indicators, to sort out priority of each elements, the so-called single hierarchical arrangement; then to synthesize the priorities, also called the total order sorting.

4. Evaluating results by consistency checking

In order to ensure efficacy of the third step of work, it needs to evaluate matrix, also called consistency checking. Consistency checking consists of the following steps:

The first step is CI (consistency index) calculation.

$$CI = \frac{\lambda_{max} - n}{n - 1}$$

$$\lambda_{max} = \frac{1}{n} \sum_{i=1}^n \frac{\sum_{j=1}^n a_{ij} w_j}{w_i}$$

The second step is to find the average random consistency index RI.

RI refers to the average random consistency index, which only connects with the matrix dimension.

Third step, to calculate the consistency ratio (CR) according to the formula $CR = \frac{CI}{RI}$: when $CR < 0.1$, the consistency of matrix is judged as acceptable, when $CR \geq 0.1$, matrix is judged as not conforming to the requirements of the consistency, it needs to judge matrices pairwise till satisfactory consistency. In practice, it only demands for overall consistency of matrix, only if a test bespeaks matrix logics reasonable, could we carry out the pairwise comparison.

The Empirical Analysis Based on Analytic Hierarchy Process

Analytic hierarchy process, matrix, prioritization and consistency are carried out in order, so to conduct a comprehensive evaluation of marketing competences, prioritize their weights in sales personnel and let graduates clearly know their working focuses. It also sheds light to marketing competence honing in education, in the end, for better marketing talent training.

(I) Identifying the marketing competences.

Marketing graduates shall put theory into practice, their traits, in general, are of the following aspects: the ability of learning, executive ability, professional knowledge and innovation.

Learning ability mainly includes: (1) foreign language skills; (2) computer operation; (3) the planning ability.

Executive ability mainly includes: (1) communication skills; (2) optimistic attitude; (3) marketing management.

Professional know-how mainly includes: (1) marketing; (2) the psychology; (3) etiquette.

Innovation ability mainly includes: (1) interdisciplinary knowledge synthetization; (2) the ability of comprehensive analysis; (3) grasping the market dynamic of the frontier.

(II) Marketing ability evaluation model

In line with the requirement of in Analytic Hierarchy Process and with an eye to the ultimate goal, it's to construct three levels, respectively the target layer, policy makers and scheme, stratifying marketing personnel's ability to present a hierarchical ladder to map out their evaluation model. Specifics as shown in figure 1:

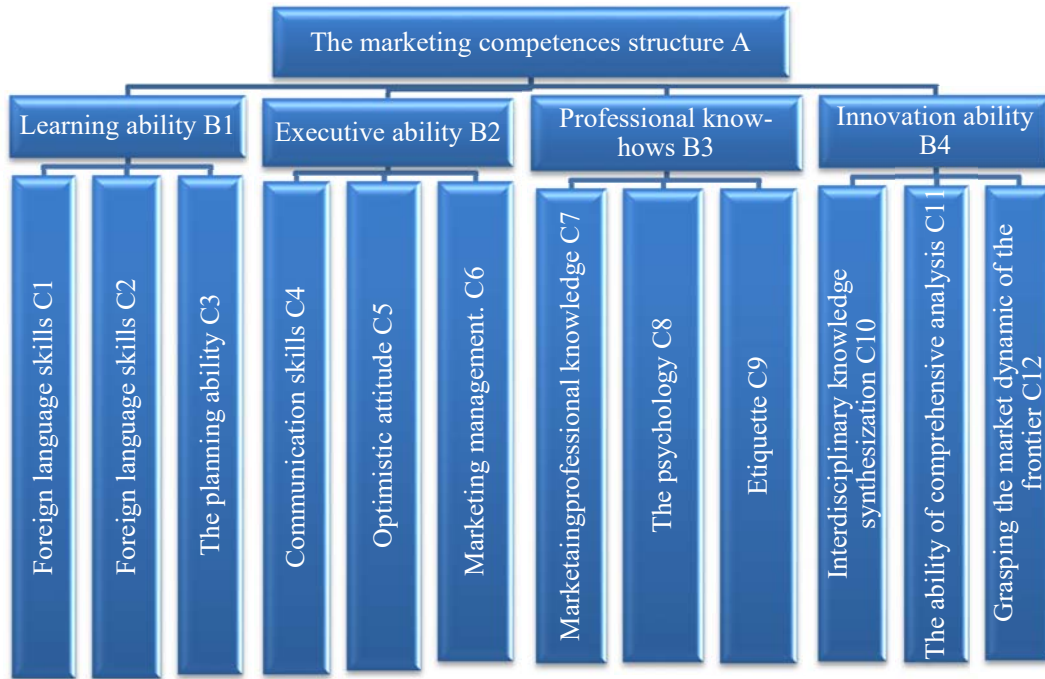


Figure 1. Core competences of the marketing professionals.

This article has adopted questionnaire survey and Delphi method, with questionnaires 400 copies, 378 of which effective questionnaire and a valid proportion of 94.5%. Eight interviewees have been invited, who are experts, scholars and others, for an analysis of marketing competence. After three rounds of the Delphi survey, eight experts converge in opinions. With the questionnaire results, combined with the expert's opinion, we get an aggregate weighting, respective arriving at different levels of the judgment matrices.

1. Single hierarchical arrangement

(1) Amongst marketing competences, execution stands the first place, followed by innovation, then by professional knowledge, with learning ability as the least important. The detailed numerical values as shown in table 2.

Table 2. Decision-makers judgment matrix and its consistency.

A	B1	B2	B3	B4	$\prod_{i=1}^4 B_i$	$\sqrt[4]{\prod_{i=1}^4 B_i}$	W_{B_i}	Ranking
B1	1	1/7	1/6	1/3	1/126	0.2984	0.0561	④
B2	7	1	4	7/3	196/3	2.8431	0.5344	①
B3	6	1/4	1	2/3	1	1	0.188	③
B4	3	3/7	3/2	1	27/14	1.1784	0.2215	②
$\lambda_{max} =$	4.14		CI=0.04667			RI=0.9		CR=0.0519<0.1

(2) Amongst the learning ability, scheming ability is one of the most important, followed by the foreign language skills, then by computer operation ability. The detailed numerical values as shown in table 3.

Table 3. Learning ability judgment matrix and its consistency.

B1	C1	C2	C3	$\prod_{i=1}^4 B_i$	$\sqrt[n]{\prod_{i=1}^4 B_i}$	W_{B_i}	Ranking
C1	1	2	3/7	6/7	0.9499	0.2725	②
C2	1/2	1	2/7	1/7	0.5228	0.1499	③
C3	7/3	7/2	1	49/6	2.0138	0.5776	①
$\lambda_{\max}=3.00925$				CI=0.046	RI=0.58	CR=0.0079<0.1	

(3) Executive competence consists of three different aspects, communication runs first, the second is the optimistic attitude, and marketing management ability stands the last. The detailed numerical values as shown in Table 4.

Table 4. Executive ability judgment matrix and its consistency.

B2	C4	C5	C6	$\prod_{i=1}^4 B_i$	$\sqrt[n]{\prod_{i=1}^4 B_i}$	W_{B_i}	Ranking
C4	1	5/3	9/4	15/4	1.5536	0.4900	①
C5	3/5	1	5/4	3/4	0.9086	0.2866	②
C6	4/9	4/5	1	16/45	0.7084	0.2234	③
$\lambda_{\max}=3.079$				CI=0.0395	RI=0.58	CR=0.0681<0.1	

(4) In terms of professional knowledge, psychology stands the first place, second the etiquette knowledge, whilst marketing knowledge in the last place. The detailed numerical values as shown in table 5.

Table 5. Professional knowledge judgment matrix and its consistency.

B3	C7	C8	C9	$\prod_{i=1}^4 B_i$	$\sqrt[n]{\prod_{i=1}^4 B_i}$	W_{B_i}	Ranking
C7	1	2/5	3/5	6/25	0.6214	0.1899	③
C8	5/2	1	2	5	1.7099	0.5225	①
C9	5/3	1/2	1	5/6	0.9410	0.2876	②
$\lambda_{\max}= 3.0094$				CI=0.0136	RI=0.58	CR=0.0079<0.1	

(5) In terms of innovation, the frontier savvy stands first, followed by the interdisciplinary fusing capability, the last the ability of comprehensive analysis. The detailed numerical values as shown in table 6.

Table 6. Innovation judgment matrix and its consistency.

B4	C10	C11	C12	$\prod_{i=1}^4 B_i$	$\sqrt[4]{\prod_{i=1}^4 B_i}$	W_{B_i}	Ranking
C10	1	5/2	3/7	15/14	1.0233	0.2848	②
C11	2/5	1	1/4	1/10	0.4642	0.1292	③
C12	7/3	4	1	28/3	2.1055	0.5860	①
$\lambda_{\max}=3.0158$ CI=0.0079				RI=0.58		CR=0.0136<0.1	

2. Total taxis of hierarchy

On basis of calculation results, compute weight of each element on the target layer, so to achieve overall. Table 7 is obtained by generalization and organizing.

Table 7. Total ranking results of target layer index.

Policy makers	B1	B2	B3	B4	Synthesized ranking
Scheme layer	0.0561	0.5344	0.1880	0.2215	Weight value
C1	0.2725				0.0153
C2	0.1499				0.0084
C3	0.5776				0.0324
C4		0.4900			0.2619
C5		0.2866			0.1532
C6		0.2234			0.1194
C7			0.1899		0.0357
C8			0.5225		0.0982
C9			0.2876		0.0541
C10				0.2848	0.0631
C11				0.1292	0.0286
C12				0.5860	0.1298

To recap the data above, competence weights are derived here: communication competence ranks as the most important, the second is positive attitude, the third is grasping the market dynamics.

Methods to Inculcate Core Competence in Marketing Professionals

Based on the previous analysis we can see that the core competence is affected by many factors. In terms of college graduates, the most outstanding factor is communication, market dynamics and optimistic attitude, so schools and enterprises are recommended to cultivate and strengthen the core ability in marketing graduates.

(I) School education

School shall combine training scheme with the characteristics of marketing major to improve the quality of teaching and learning efficiency as the starting point. They shall set up diversified curricula and teaching models rather than limited to knowledge imparted in classroom and in books. They shall combine theory with practice.

1. Enrich the curricula

In addition to basic marketing courses and professional courses, schools shall consider the actual needs to set up courses such as business etiquette, negotiation and communication skills and other professional courses, so as to provide students with marketing intelligence support. At the same time, they shall open marketing case analysis and psychology course, so to let the students grasp the marketing forefront dynamics plus some basics in psychology.

2. Supervisor shall assume overall responsibility

To plan marketing students as a whole, subdivide them into groups, each group with a few students following 1-2 teachers. Imparting theoretical knowledge, the team mentor can introduce the marketing frontier dynamics to students and lead the whole team exercise actively to social practice and summarizes the achievements and deficiencies, so much so that students grow and progress more smoothly.

3. Perform systematic career planning

For the final goal, it's to inspire learning motivation and interest in students. Therefore, we shall help students analyze the state of marketing major and the actual practices, let them understand the advantages and disadvantages of this major for employment plus field-specific aptitude.

(II) Internship in enterprises

1. Strengthen the cooperation between colleges and enterprises

Enterprise bridges up the commencement and career, so schools cater for enterprise need effectively, for better compatibility and adaptability to work, which is also the critical and crucial talent. Schools should make full use of the entrepreneurial base to strengthen student working ability. Enterprise can ask for order-based training, or school implement practical courses outsourcing, so to let experienced staff guide the students in practical operation. On the one hand, it saves the resources of the school. On the other hand, it also creates the benefits for enterprises. Moreover, students grow in hands-on ability—a tripartite win-win situation.

2. Implement the off-campus mentor system

During the extracurricular practice, enterprises give students technical guidance, which hones communication skills in students and preps students think over potential challenges in the practical work. This will equip students mentally to cope with setbacks.

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