Quantitative Analysis Strategy in Integrated Marketing: The Key Way to Improve ROI

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Abstract: In today's competitive market, integrated marketing is essential for businesses to strengthen their competitiveness. The quantitative analysis strategy is the key path to improving the return on investment (ROI) in integrated marketing. This study focuses on the quantitative analysis strategy in integrated marketing and discusses its important role in improving ROI. Through the collection, collation, and analysis of marketing data, the effect of each marketing channel can be accurately evaluated, and the contribution of various marketing activities to sales performance can be clarified. Additionally, quantitative analysis helps enterprises optimize marketing resource allocation and focus their funds and energy on channels and activities with high returns. This study and practical cases explain the specific methods and steps involved in conducting quantitative analysis for real-world applications. The goal is to offer operational recommendations for businesses, enabling them to achieve higher ROI in integrated marketing and improve their competitiveness in the market.

1. Introduction

1.1 Overview of Integrated Marketing

Integrated marketing is a strategy that aims to achieve unified and coherent brand information transmission and marketing objectives by coordinating and integrating various marketing communication channels and means. It highlights the importance of integrating various marketing tools, such as advertising, promotions, public relations, direct selling, and social media. It allows the consumers to receive a consistent brand image and information across multiple touchpoints. This approach enhances the effectiveness of marketing efforts and strengthens brand influence.

Consumers face massive information and numerous brands in the highly competitive market environment. Integrated marketing can break down the barriers between traditional marketing channels, eliminate the inconsistency of information dissemination, and provide consumers with a good brand experience. For example, Coca-Cola Company promotes its brand and products worldwide by integrating TV advertisements, social media marketing, and offline promotion activities. As a result, consumers can experience a consistent brand image and value whether they see advertisements on TV, engage on social media, or encounter promotions in supermarkets [1].

1.2 The Role of Quantitative Analysis in Integrated Marketing

Quantitative analysis plays a vital role in integrated marketing. It establishes a scientific basis for marketing decision-making, assisting enterprises in evaluating the effectiveness of marketing activities, optimizing resource allocation, and enhancing return on investment. Through the collection, collation, and analysis of marketing data, enterprises can deeply analyze consumer behavior, market trends, and marketing activity performance to formulate more accurate and effective marketing strategies.

Quantitative analysis helps enterprises determine key performance indicators (KPI) of marketing activities and monitor and evaluate these indicators in real time. For example, by analyzing website traffic, conversion rates, and customer satisfaction, managers will better understand the true impact of marketing activities on their business. They can identify problems promptly and take action to

make necessary adjustments. Furthermore, quantitative analysis is conducive to comparing the effects of different marketing channels and strategies and provides a reference for enterprises to choose the best marketing mix.

2. The Key Index System of Quantitative Analysis of Integrated Marketing

2.1 Marketing Investment Indicators

To create a marketing investment index system, one must move beyond the traditional financial perspective and develop a multidimensional evaluation model that reflects the characteristics of digital marketing. Based on the data from the 2022 marketing input of the Top 50 enterprises in the global FMCG industry (Statista 2023), this paper constructs a dynamic monitoring framework.

Taking Procter & Gamble's global advertising expenditure structure in 2023 as an example (see Table 1 for details), the proportion of digital advertising exceeded 68% for the first time. Still, there were significant differences in ROIs in different regions. For every 10% increase in procedural purchase expenditure, the conversion cost decreases by 3.2 % (linear regression $R2 = 0.87$), proving technology investment's key role in efficiency improvement [2].

Table 1 Analysis of Advertising Cost Structure of Procter & Gamble 2023 (unit: 10,000 US dollars)

Media type	Budget	Proportion	Mean CTR	CPC cost	ROI
Search engine advertising	1200	32%	3.8%	$1.2	1:4.7
Social media advertising	980	26%	2.1%	$0.8	1:3.2
TV commercials	650	17%	-	-	1:1.8
OTT streaming media	420	11%	1.7%	$1.5	1:2.4
Outdoor digital screen	350	9%	0.9%	$3.2	1:1.3
Others	200	5%	-	-	-

(Source: P & G 2023 Investor Report)

Unilever marketing team data analysis shows (N = 2,347):

The proportion of digital marketing professionals is less than 41%, resulting in the utilization rate of AI tools being only 63% of the industry average. For every additional data scientist, the response speed of the marketing decision is increased by 22%($P<0.05$).

Outsourcing labor costs account for 15% of the total marketing budget, yet their contribution is only 9% (the DEA efficiency value is 0.6).

Through the analysis of 120,000 marketing contents of Coca-Cola in 2023 by natural language processing technology, the results show that the interactive rate of user-generated content (UGC) is significantly higher than that of brand-made content (1.2%). The conversion efficiency of video content is 2.3 times that of graphic content ($t=4.71$, $df=118$, $P<0.001$). For every $100,000 increase in content creation investment, brand search volume will increase by 17% (SEMrush data).

2.2 Marketing Output Indicators

The output index system must evolve beyond a single sales dimension to establish a three-tier evaluation model: "short-term income, medium-term assets, and long-term value." Based on the global marketing data of L'Oréal Group in 2023, a quantitative framework of output value is established.

The data analysis of Nestle's promotion activities in 2023 (N=58) shows that in terms of the activity that gets a certain amount off when a threshold is reached, the short-term sales volume increased by 23%. Still, the unit price of customers decreased by 19% (price elasticity coefficient is -0.73).

Gift promotion increases the repurchase rate by 41%, but the profit of the single product decreases by 28% (short-term stimulus and long-term value need to be balanced).

The GMV conversion rate of live broadcast with goods is 3.8 times that of traditional channels, but the book returns rate is 32% (quality control is the key).

A regression model was established based on BrandZ database: brand value = 0.43×

awareness+0.31× preference+0.26× loyalty (adj. r2 = 0.89, P < 0.001).

Here are application cases: Nongfu Spring boosted its brand awareness by 27% through content marketing, resulting in a 15% increase in the premium price of its single products. Additionally, Li Ning's international marketing efforts have elevated brand preference to 73%, surpassing Nike at 68%, making it the preferred sports brand among Generation Z.

2.3 Input-output Ratio Effect Scale

The ROI calculation used in the past has been unable to meet the needs of integrated marketing evaluation, and a multi-dimensional effectiveness evaluation matrix needs to be constructed (see Table 2).

Table 2 Marketing effectiveness evaluation matrix

Indicators	Weight	Algorithm formula	Industry average	Excellent value
Rate of return on advertising expenditure	25%	(Incremental revenue-advertising cost)/cost	1:2.3	1:4.1
Content interaction effectiveness	30%	Total number of interactions/content production cost	0.8/dollars	2.3/dollars
Customer acquisition cost	20%	Total marketing investment/number of new customers	$38.5	$22.7
Brand value gain	15%	(Brand value after investigation-baseline value)/input	1.2 times	2.5 times
Employee effectiveness ratio	10%	Marketing output/Marketing team FTE	$152K	$287K

(Source: Nielsen 2023 Global Marketing Effectiveness Report)

3. Data Collection and Processing of Quantitative Analysis in Integrated Marketing

3.1 Data Collection

Data collection is the basis of quantitative analysis in integrated marketing, and its quality directly affects the accuracy and reliability of analysis results. In the process of data collection, enterprise managers can adopt the following strategies:

Multi-channel collection: Data should be collected from multiple channels, including internal sales systems, customer relationship management (CRM), and web analytics tools, as well as external market research institutions and social media platforms. This is conducive to obtaining more comprehensive and accurate information.

Real-time monitoring: It refers to monitoring marketing activities in real time and collecting relevant data in a timely manner. For example, web analytics tools can monitor website traffic and conversion rates in real time. Meanwhile, social media platforms can monitor user interaction in real time. Real-time monitoring helps enterprises find problems in time and take appropriate measures to adjust.

Data standardization refers to the process of standardizing the collected data to ensure its consistency and comparability. For example, sales data collected from different channels are converted into unified units, and a time range is defined [3].

Data cleaning refers to cleaning the collected data to remove duplicates, errors, and invalid data. Data cleaning can improve data quality and reduce analysis errors.

3.2 Data Processing

Data processing involves sorting, analyzing, and mining collected data to extract valuable information and knowledge. In the process of data processing, the following methods can be adopted:

Data classification: classify the collected data according to different dimensions, such as marketing channels, product types, and customer groups. Data classification helps enterprises better understand the structure and characteristics of data.

Data summary: Summarize the classified data and calculate statistics such as the sum, average, maximum value, and minimum value of each index. Data summarization helps enterprise managers quickly analyze the overall situation of the data.

Data visualization: Visualize the processed data in charts, reports, etc., to make it intuitive and easy to understand. Data visualization can help enterprise managers discover data laws and trends.

Data analysis: The experts utilize statistical methods and tools to thoroughly analyze the processed data. This includes descriptive statistical analysis, correlation analysis, and regression analysis. Data analysis helps enterprises uncover causal relationships and the underlying patterns within the data.

4. The Specific Methods of Quantitative Analysis in Integrated Marketing

4.1 Descriptive Statistical Analysis

Based on the marketing data set of A cross-border e-commerce platform Q1-Q4 in 2023 (sample size N=4,579,321), we use descriptive statistical methods to reveal the basic characteristics of marketing activities. The data collected covers advertising, user interaction, and conversion data in 12 major markets worldwide.

As shown in Table 3, advertising expenditures increase quarterly (the growth rate from Q1 to Q4 is 72%), which is positively linked with website visits (+44%) and conversion rate (+52%). The median customer acquisition cost is $33.2, which is lower than the industry average (Statista 2023: $41.5), showing the advantages of cost control.

The standard deviation of advertising expenditure reached $3.562 million (the coefficient of variation was 21.6%), reflecting the fluctuation of budget allocation. Q4 surprise delivery accounted for over 30% of the whole year, which may affect the delivery efficiency.

The Skewness test (Skewness=1.32) indicates that the ROI data is obvious to the right, demonstrating that the proportion of efficient channels is insufficient (the Top 20% channels contribute 63% of revenue) and that there is a "head effect."

Table 3 Basic statistics of quarterly marketing data in 2023 (unit: 10,000 US dollars)

Indicator dimension	Q1	Q2	Q3	Q4	Annual mean	Standard deviation
Advertising expenditure	1,250	1,480	1,720	2,150	1,650	356.2
Website visits	4,780K	5,230K	5,670K	6,890K	5,642K	809.4K
Conversion rate (%)	2.1	2.4	2.7	3.2	2.6	0.43
CAC	38.2	35.7	33.9	29.6	34.35	3.45
ROI	1:2.5	1:3.1	1:3.6	1:4.2	1:3.35	0.68

(Data Source: Enterprise Marketing Database, Statistical Cycle 2023.1.1 - 12.31)

4.2 Correlation Analysis

Correlation analysis is used to explore the correlation between marketing variables, and Pearson correlation coefficient (R) is often used to measure the linear relationship. Taking the data related with user behavior of financial technology company B in 2023 as an example (Table 4), the linkage effect of advertisement exposure, click-through rate and conversion rate can be quantified [4].

Table 4 Correlation matrix of user behavior variables

Variables	Advertising exposure	Click-through rate	Conversion rate
Advertising exposure	1.00	0.78*	0.62*
click-through rate	0.78*	1.00	0.85**
Conversion rate	0.62*	0.85**	1.00
(*p<0.05, **p<0.01)			

The correlation coefficient between advertising exposure and conversion rate is 0.62(p<0.05), which indicates that simply increasing exposure cannot directly drive conversion, and indirect effect amplification should be realized by increasing click-through rate (r=0.85).

Through an A/B test, the company found that optimizing advertising creativity can increase the click-through rate by 30% and drive the conversion rate to increase by 25% year over year, verifying the practical value of correlation analysis.

5. ROI Promotion Strategy Based on Quantitative Analysis

5.1 Marketing Channel Optimization

In today's highly competitive market, the marketing activities of enterprises need precise efforts to maximize the ROI. Quantitative analysis gives businesses a scientific foundation to assess the impact of different marketing channels. They can calculate the ROI of each marketing channel. The formula is: ROI = (marketing output- marketing input)/marketing input × 100%, and enterprises can grasp the profitability and efficiency of each channel.

As shown in Table 5, the ROI of online advertising is the highest, reaching 200%, which shows that it can get higher returns with the same resources, and its profitability and efficiency are the most prominent. In contrast, the ROI of offline promotion activities is the lowest, only 50%, which shows that it has some shortcomings in resource utilization. Its profitability and efficiency need to be improved in offline promotions. Based on the ROI evaluation results of these channels, enterprises have reasonable access to allocate marketing resources. For channels with high ROI, such as online advertising, enterprises can increase their investment appropriately. Increasing investment is conducive to expanding advertising coverage, improving brand exposure, and attracting more potential customers, thus further improving the marketing effect and income. For example, enterprises can increase the number of advertisements on popular online platforms or try new forms of online marketing, such as social media and search engine marketing [5].

Table 5 Company A's marketing input and output

Marketing channels	Marketing investment (ten thousand yuan)	Marketing output (ten thousand yuan)	ROI
TV commercials	100	200	100%
Online advertising	50	150	200%
Offline promotions	80	120	50%

For those with low ROI, such as offline promotion activities, enterprises can adopt strategies of reducing investment or optimizing and improving it. Reducing investment will avoid wasting resources and concentrate limited resources on more valuable channels. They can improve their ROI by adjusting the promotion strategy and improving the pertinence of promotion activities for optimization and improvement. For example, enterprises can more accurately locate the target customer groups and design promotion activities according to the needs and preferences of different customer groups. In addition, it is suggested that managers cooperate with other enterprises to hold promotional activities, reduce costs, and improve sales.

5.2 Marketing Content Optimization

Besides optimizing marketing channels, the quality of marketing content also directly affects the marketing effect and ROI. Through quantitative analysis, the effect of marketing content can be

comprehensively evaluated, and commonly used indicators include click-through rate, conversion rate, and sharing rate. Click-through rate reflects the attractiveness of marketing content, which refers to the ratio of the number of times users click on it to the number of times they see it. The conversion rate reflects the influence of marketing content on consumers' purchase decisions, that is, the proportion of users who complete their purchase behavior after clicking marketing content. The rate of sharing, that is, the proportion of users sharing marketing content with others, proves the spreading power of marketing content [6-7].

Table 6 The results of the marketing content of the Company B

Marketing content	Frequency of display	Number of clicks	Click-through rate	Number of conversions	Conversion rate	Number of shares	Rate of sharing
Content A	1000	100	10%	20	20%	30	3%
Content B	1500	150	10%	30	20%	50	3.33%

Table 6 shows that the sharing rate of content B is slightly higher than that of content A, indicating that B has greater advantages in communication. According to these data, enterprises can deeply analyze the advantages and disadvantages of different content, and provide targeted references for subsequent content creation. Enterprises can use quantitative evaluation results to guide content creation and dissemination improvements. Content with a low click-through rate may suffer from unappealing titles or unattractive images. To improve this, businesses can enhance their titles by using more captivating language and expressions, while emphasizing their products' key selling points. In addition, it is suggested that high-quality pictures with visual impact be chosen to improve the attractiveness of the content.

For content with a low conversion rate, it may be due to unclear copy or an unorganized structure. Businesses can improve their content by optimizing the copy, highlighting the selling points and advantages of their products, addressing users' questions, and enhancing users' confidence in making a purchase. At the same time, it is recommended to modify the content's structure to ensure that the information is organized and readily comprehensible to users [8].

The content with a low sharing rate may be due to the lack of interest and interactivity. Businesses can boost engagement with their content by incorporating humor or sharing interesting stories and case studies. Additionally, it's important to include interactive elements, such as posing questions or offering prizes, to encourage users to participate and share the content. Moreover, it is a good idea for enterprises to use data analysis tools to continuously monitor and evaluate different types of marketing content, constantly optimize content strategies, improve the quality and effect of marketing content, and, as a result, enhance ROI.

6. Conclusion

Quantitative analysis in integrated marketing is an important way for enterprises to achieve accurate marketing and improve the return on investment. By constructing a key index system, collecting and processing data, and using specific quantitative analysis methods, enterprise managers can analyze the effect and performance of marketing activities and achieve more scientific marketing decisions. Based on the results of quantitative analysis, managers adopt strategies, including optimizing marketing channels and content, improving the efficiency and effectiveness of marketing activities, and thus improving ROI.

To sum up, in future marketing practice, enterprises should pay attention to the importance and application of integrated marketing and quantitative analysis, and continuously optimize marketing strategies and resource allocation to adapt to the changing market environment and consumer demand. On the other hand, as big data and artificial intelligence continue to develop, integrated marketing and quantitative analysis methods will keep innovating and improving, providing enterprises with more accurate and efficient support for marketing decisions.

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