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## Enhanced research on the customer value based on CVDS model

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### ABSTRACT

With the development of market economy, the diversified marketing models and personalized consumer demand make the obsolete traditional sale of tobacco products unable to adapt to the modern market environment increasingly. This paper analyzes and summarizes systematically the theory on customer satisfaction, customer value of both domestic and international, and then it introduce the concept of the satisfaction index. Based on this concept, a customer value driver of the weighted satisfaction index model is built. This thesis builds an EPIS analysis model of 'Extend—Preserve—Improve—Solve', which relays on the degree of importance and satisfaction index. In this model, the index can be counted. Empirical research on Henan tobacco market has been done and countermeasures to enhance the customer value of Henan tobacco retailers have also been proposed.

### KEYWORDS

CDVS; Customer value; EPIS.



## RESEARCH BACKGROUND

With the approaching of the supermarket competition, the diversified marketing models and the personalized consumer demand make the traditional sale of tobacco products unable to adapt to the modern market environment increasingly. On one hand, the relevant national policy requires the tobacco industry to carry out “marketing-oriented” reforms, to get rid of the rigid system and step into the sound development track; on the other hand, the market domination has been transferred from producers to retailers and final consumption, and the consumer demand-oriented market environment has made the tobacco industry seek for various innovations actively and has achieved lasting growth. As one of the marketing 4P elements, channel plays a significant role in tobacco industry. To this end, the way to understand the appeal of tobacco marketing network to manufacturers and the way to promote the value perception of retailers to this appeal become the main research direction of numerous scholars and tobacco business enterprises of sales network construction.

Sales network is the main channel of tobacco value transformation, and the retailers, who are the terminal customers of tobacco sales, are the main bearing passage of value transformation. Therefore, the research on value promotion of retailers and the way to make the them satisfied in a maximum way contribute to the promotion and optimization of the construction level of the sales network, the promotion of tobacco value transformation and the promotion of the market competitiveness of Henan Provincial Tobacco Corporation. For this paper, the establishment of model and the conduct of satisfaction evaluation to retailer value driving factors (CVDS) contribute to the understanding of the operation conditions of terminal retailers and the targeted customer relation management and service optimization. The CVDS-based evaluation result can be utilized to be the assignment basis of EPIS model analysis, and this weighted satisfaction index can be taken as the value promotion and improvement of retailers in a direct way, and the analysis and strategy improved based on which can ultimately promote the satisfaction of Henan tobacco retailers and achieve the purpose of market improvement.

## CONSTRUCTION OF MODEL OF CUSTOMER SATISFACTION EVALUATION

### Evaluation model design

Based on the idea of weighting, this paper sets out all the possible value driving factors of retailers, and conducts consideration and screening one by one, and divides them into several broad categories according to business modules; and divides each broad category into several sub-categories according to the business process of tobacco retailing; and raises several problems according to the bi-directional specific business processes from tobacco business corporation to retailers and from retailers to tobacco business corporation, which are the final evaluation indicators. Finally, the evaluated score of each item of evaluation indicator is assigned with weighting coefficient, and the final result indicator after weighting is the weighted index of the indicator. It is worth noting that, in this model, the weighting coefficient comes from the ranking of the degree of importance to the 1 – 10 categories of indicators by interviewees, who are the retailers. In this weighting index model, the origin of each weighting has quantized basis, which ensures the quantization and scientificity of the final result.

Therefore, the following model is used to calculate the weighted satisfaction index of each CVDS evaluation indicator:

$$CS = P \cdot W$$

In the expression of this model, CS is the weighted satisfied index of the evaluated indicator, that is the final result to be evaluated; P is the satisfaction score of the evaluated indicator, that is the preliminary score of the interviewed retailers to the evaluation questionnaire; W is the weighting coefficient, that is the weighting coefficient of the ten business process categories, and the value of which comes from the quantized value of the ranked importance degree by interviewees. The satisfaction value of each item of CVDS evaluation indicator is multiplied by the weighting coefficient of the index is the weighted satisfaction index of the CVDS.

In the evaluation of this paper, the “average value” method is utilized to calculate the evaluation result of all the interviewees, with the following formula:

$$P_i = \frac{\sum_{j=1}^n P_{ij}}{n}$$

$P_i$  is the average satisfaction index of the item of  $i$ , and  $p_{ij}$  is the satisfaction value of the interviewee to the item of  $i$ , and  $n$  is the total number of the participants of the indicator of the item of  $i$  of the evaluation.

The importance degree indicator should be quantized according to the ranking result of the retailers to CVDS in the questionnaire. This paper performs descending order according to the importance degree of the 10 items of weighting indicators, and gives them weighted value from 1.5 to 0.5. The weighted value which is higher than 1 is regarded as “important”, and the weighted value which is lower than 1 is regarded as “unimportant”.

According to the principle of “majority of sort”, the indicator “which is regarded as the most important by most people” is ranked in the first place, and the rest can be done in the same manner. The computational formula module is listed as follows:

$$w_k = \frac{\sum_{j=1}^n q_{kj}}{n}$$

In which  $w_k$  is the average ranking score and  $q_{kj}$  is the ranking score of the interviewee of  $j$  to the weighting category of  $k$ , and  $n$  is the total number of the participants of the ranking. It is worth noting that if the resulted values of  $w_k$  are equivalent, another questionnaire will be taken randomly, and the data should be added into the formula, until all the values of  $w_k$  are different.

Refer to the average ranking score  $w_k$  of each item, to re-give the weighted value in the range of 1.5 to 0.5 according to the sequence of from high to low, to obtain the value of  $W_k$ , which is the weighting coefficient of the weighting category of  $k$ .

After the quantization of the two dimensionalities, the evaluation model of weighting satisfaction index of each CVDS is as follows:

$$CS_i = P_i \cdot W_k$$

In which:  $CS_i$  is the weighting satisfaction index of the evaluation index with the item of  $i$ , and  $P_i$  is the average satisfaction value of the evaluation indicator of the item of  $i$ , and  $W_k$  is the weighting assignment of the re-ranking after quantization of the weighting category of  $k$ .  $P_i$ , the satisfaction value of the CVDS evaluation indicator of item of  $i$ , is multiplied by the weighting coefficient  $W_k$  of the indicator is equivalent to the weighted satisfaction indicator  $CS_i$  of the CVDS.

### Evaluation indicator design

After the design of evaluation model, according to the thought of business process classification, this paper enumerates the possible value driving factors for tobacco retailers, and the practical situation of terminal tobacco sales market is taken into consideration to screen the final evaluation indicators and classify them into two categories. Ultimately, the satisfaction index evaluation system based on two-level category is established.

According to the difference of business modules, this paper lists the six large-indicators of the first level of category, which are the order and distribution of goods, payment reward, communication feedback, terminal support, liveliness and channel policy, and ten indicators are made according to the business process under the six large-indicators. The order and distribution of goods belongs to the commodity logistics business module of tobacco product demand and satisfaction, including product order and product distribution, used to evaluate the satisfaction index of retailers to the goods movement business; payment reward belongs to the capital business module of goods payment and sales reward, including account settlement and award policy, used to evaluate the satisfaction index of retailers to fund flow and sales fund return; communication feedback belongs to the information stream business module of the down-conveying of tobacco product information and the up-feedback of problems of terminal retailers, including business visit and terminal feedback, used to evaluate the satisfaction index of retailers to the information conveying and problem communication; terminal support belongs to the support business module of tobacco business corporation to the materials and goods of the retailer terminals, including material support and policy support, used to evaluate the satisfaction index of retailers to material support; liveliness belongs to the business module of tobacco products of image display in sales terminals and the image of exclusive shops, including terminal image, used to evaluate the image satisfaction index of tobacco business corporate to terminal sales; channel policy belongs to the business module of the policy support to terminals, including channel policy, used to evaluate the satisfaction index of retailers to various policies of tobacco business corporation.

The specific evaluation indicators under the ultimate categories are:

- |  |  |
|--|--|
| 1 Order convenience and order processing speed           | 11 Convenience of terminal problem feedback                      |
| 2 Order satisfaction rate                                | 12 Solution degree to feedback problems                          |
| 3 Product distribution speed                             | 13 Evaluation to terminal material application policy            |
| 4 Accuracy degree of bill of distribution                | 14 Evaluation to quality and effectiveness of terminal materials |
| 5 Settlement convenience of accounts                     | 15 Satisfaction to terminal policy application policy            |
| 6 Accounts detailed degree and accounts error rate       | 16 Satisfaction to terminal policy support effectiveness         |
| 7 Reasonability of present award standard                | 17 Satisfaction to product package design                        |
| 8 Influence degree of current award policy to enthusiasm | 18 Satisfaction to terminal special image cabinet frame          |
| 9 Visit frequency of sales representative                | 19 Satisfaction to current channel layout                        |
| 10 Degree of help of sales representative visit          | 20 Satisfaction to current channel protection policy             |

### Analysis to evaluation result

Based on the purpose of satisfaction index evaluation and the objectivity principle of, this research performs questionnaire evaluation and depth interview to tobacco retailers in Zhengzhou City of Henan Province. In order to ensure

the coverage rate of evaluated objects and the reliability of evaluation result, this evaluation selects 20 representative tobacco retail network shops according to regions and channel level. The 20 retailers are distributed in east zone, south zone, west zone, north zone and central zone of Zhengzhou City; as per the channel scale levels, 10 retailers are independent large scale tobacco retail network exclusive shops, and 10 retailers are small and medium-sized shop-in-shop tobacco retail shops.

This evaluation conducts specially-assigned person interview according to the evaluation questionnaire and conducts data statistics.

1. Each CVDS average satisfaction index result

$$P_i = \frac{\sum_{j=1}^n P_{ij}}{n}$$

<b>i</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>P<sub>i</sub></b>	2.65	3.65	2	2.35	1.65	1.9	2.95	1.35	3	2.35
<b>i</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>P<sub>i</sub></b>	2.9	3.1	2.65	3.85	1.45	3.05	3.85	3.05	2.55	1.95

2. Importance degree coefficient result of each category of CVDS (according to the result of reassignment with the ranking of W<sub>i</sub>)

<b>k</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>W<sub>k</sub></b>	1.5	1.3	1.4	1.2	0.5	0.7	0.8	0.6	0.9	1.1

3. The weighted satisfaction index of each CVDS, which is the final evaluation result

$$CS_i = P_i \cdot W_k$$

<b>i</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>P<sub>i</sub></b>	2.65	3.65	2	2.35	1.65	1.9	2.95	1.35	3	2.35
<b>W<sub>k</sub></b>	1.5		1.3		1.4		1.2		0.5	
<b>CS<sub>i</sub></b>	3.975	5.475	2.6	3.055	2.31	2.66	3.54	1.62	1.5	1.175
<b>i</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>P<sub>i</sub></b>	2.9	3.1	2.65	3.85	1.45	3.05	3.85	3.05	2.55	1.95
<b>W<sub>k</sub></b>	0.7		0.8		0.6		0.9		1.1	
<b>CS<sub>i</sub></b>	2.03	2.17	2.12	3.08	0.87	1.83	3.465	2.745	2.805	2.145

**EPIS analysis to customer satisfaction degree**

According to the customer psychological perception theory, the importance degree of each CVDS factor to the psychological perception of retailers should be sufficiently considered when improving customer satisfaction degree and customer value; and “important factors” should be sufficiently utilized or effectively solved, and “unimportant factors” should be conducted track hold or improved in a long term. In the analysis of this paper, the CVDS of “important to retailers” and “with high satisfaction index” is regarded as the “strategy needed to be sufficiently utilized and promoted” by tobacco corporate (Extend); and the CVDS of “unimportant to retailers” and “with high satisfaction index” is regarded as the “strategy needed to be maintained in high satisfaction state” by tobacco corporate (Preserve); the CVDS of “unimportant to retailers” and “with low satisfaction index” is regarded as the “strategy needed to be adjusted and improved in a long term” by tobacco corporate (Improve); and the CVDS of “important to retailers” and “with low satisfaction index” is regarded as

the “strategy needed to be solved at present” by tobacco corporate (Solve). The relationship between the above two importance degrees and two satisfaction indexes is shown as in Figure 2:

Satisfaction index Importance degree	Low satisfaction index	High satisfaction index
Important to retailers	Strategy needed to be solved at present	Strategy needed to be sufficiently utilized and promoted
Unimportant to retailers	Strategy needed to be adjusted and improved in a long term	Strategy needed to be maintained in high satisfaction state

Figure 2: Relation Diagram between Importance Degree and Satisfaction Index

According to the evaluation result of retailer satisfaction index evaluation questionnaire (data is from 3.2.4), this paper distributes the 20 CVDS items in the EPIS quadrant analysis model constructed in 4.1 according to the two dimensionalities of “importance degree” and “satisfaction index value” as well as the quantization result, and the result is shown as follows:

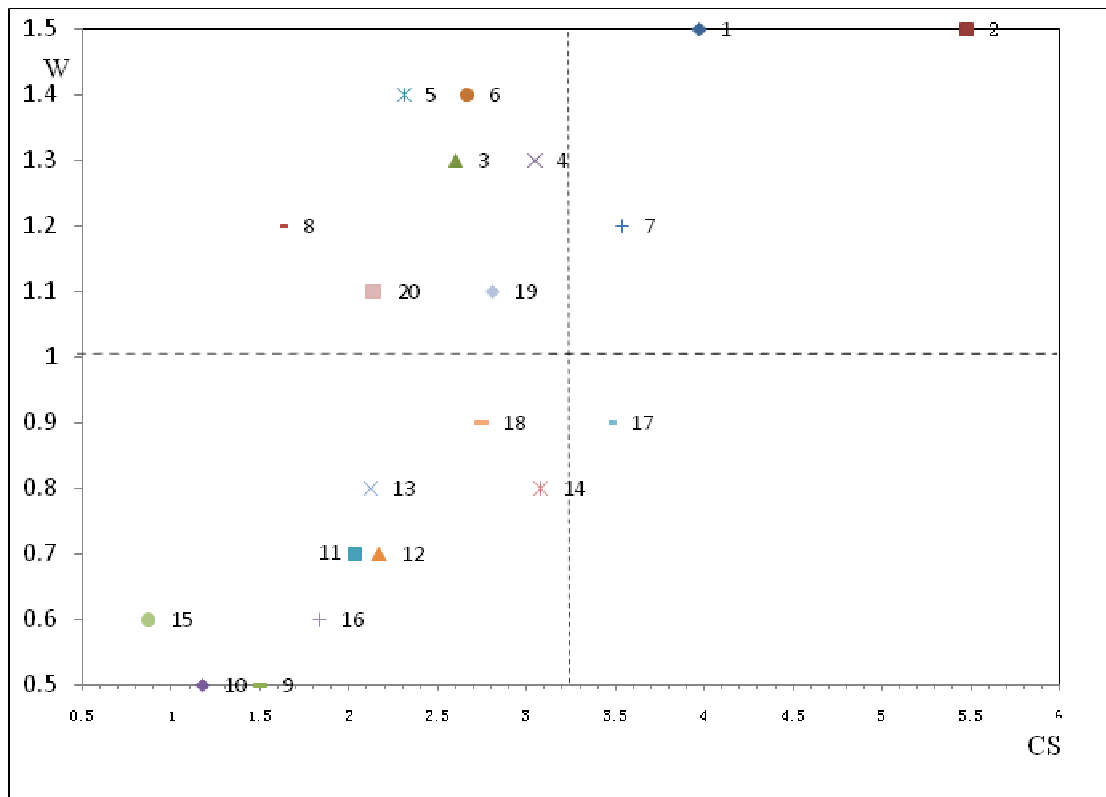


Figure 4: Assignment Diagram of EPIS Quadrant Analysis Model

It can be known from the assignment result of the EPIS quadrant model:

In the evaluated 20 items of CVDS, the ones located in Extend quadrant are the 1<sup>st</sup>, 2<sup>nd</sup> and 7<sup>th</sup> items, and the “strategy needed to be sufficiently utilized and promoted” will be adopted by CVDS; the one located in Preserve quadrant is the 17<sup>th</sup> item, and the “strategy needed to be maintained in high satisfaction state” will be adopted by CVDS; the ones located in Improve quadrant are the 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup>, 14<sup>th</sup>, 15<sup>th</sup>, 16<sup>th</sup> and 18<sup>th</sup> items, and the “strategy needed to be adjusted and improved in a long term” will be adopted by CVDS; the ones located in Solve quadrant are the 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 8<sup>th</sup>, 19<sup>th</sup> and 20<sup>th</sup> items, and the “strategy needed to be solved at present” will be adopted by CVDS.

**Analysis to retailer customer value promotion**

Based on the assignment result of the “Extend – Preserve – Improve - Solve” quadrant analysis model, the tobacco retailer customer value promotion strategy based on the four categories of scheme is obtained.

<p><b>Solve—Strategy needed to be solved at present</b></p> <ul style="list-style-type: none"> <li>a. products distribution speed</li> <li>b. Accuracy degree of bill of distribution</li> <li>c. Settlement convenience of accounts</li> <li>d. Accounts detailed degree and accounts error rate</li> <li>e. Influence degree of current award policy to enthusiasm</li> <li>f. Present channel layout</li> <li>g. Present channel protection policy</li> </ul>	<p><b>Extend—Strategy needed to be sufficiently utilized and promoted</b></p> <ul style="list-style-type: none"> <li>a. Order convenience and order processing speed</li> <li>b. Order satisfaction rate</li> <li>c. Current award standard</li> </ul>
<p><b>Improve—Strategy needed to be adjusted and improved in a long term</b></p> <ul style="list-style-type: none"> <li>a. Visit frequency of sales representative</li> <li>b. Effectiveness of the visit of sales representative</li> <li>c. Convenience of terminal problem feedback</li> <li>d. Solution degree of feedback problem</li> <li>e. Terminal material application policy</li> <li>f. Terminal policy application policy</li> <li>g. Terminal policy support effectiveness</li> <li>h. Terminal special image cabinet frame</li> <li>i. Quality and effectiveness of terminal materials</li> </ul>	<p><b>Preserve—Strategy needed to be maintained in high satisfaction state</b></p> <ul style="list-style-type: none"> <li>a. Product package design</li> </ul>

Figure 5: Strategy Diagram of Value Promotion of Tobacco Retailer Customers

**Promotion Strategy of Extend**

In the promotion strategy of “Extend”, the value driving factors belonging to this category are regarded as “important” and “satisfied” by retailers, therefore, the CVDS under this strategy will be sufficiently utilized, deepened and extended, and will help the value promotion of other factors.

(1) On the aspect of order convenience and order processing speed, tobacco business corporate should maintain the original convenience and high order processing speed, and should try adopted new order methods, for example, the network may be utilized to promote e-commerce model, or the sort message may be utilized to establish the short message order information platform, to achieve timely estimation of supply demand;

(2) On the aspect of satisfaction rate of orders, tobacco business corporate should main the satisfaction rate of the ordered products, and also establish customer demand database, to achieve timely estimation of the ordered categories and quantity in each order cycle;

(3) On the aspect of current award standard, tobacco business corporate should evaluate the status of channel in a more reasonable way and formulate corresponding channel award standard, and utilize channel promotion to stimulate the sales growth of the channel.

**Promotion strategy of preserve**

In the promotion strategy of “Preserve”, the value driving factors belonging to this category are regarded as “unimportant” but “satisfied” by retailers, therefore, the CVDS under this strategy shall be maintained as the original high satisfaction degree.

On the aspect of products package design, tobacco business corporate should maintain the appearance design and image propaganda of products.

**Promotion strategy of improve**

In the promotion strategy of “Improve”, the value driving factors belonging to this category are regarded as “important” but “unsatisfied” by retailers, therefore, the CVDS under this strategy shall be taken as the items to be adjusted and improved in a very long term, to gradually improve them into satisfactions, and to promote the retailer value.

(1) On the aspect of the frequency of sales representative visit, tobacco business corporate should increase the frequency of sales representative to terminal retailers, and at the right time;

(2) On the aspect of the effectiveness of sales representative visit, tobacco business corporate should pay attention to the training to professional skill and communication skill of sales representative, and should pay attention to the improvement of the practical visit effectiveness of sales representatives.

(3) On the aspect of the convenience of terminal problem feedback, tobacco business corporation should actively collect the problem feedback of terminal retailers, and simplify the feedback process, and achieve the conversion from passive complaint to positive understanding;

- (4) On the aspect of the solution degree of feedback problem, tobacco business corporate should perfect the feedback mechanism, and perform timely and effective processes to terminal feedback;
- (5) On the aspect of terminal material application policy, tobacco business corporate should perfect material application system, and provide materials support to various levels of terminal retail channels in a fair way;
- (6) On the aspect of terminal policy application policy, tobacco business corporate should perfect policy application system and provide retail policy support to various levels of terminal retail channel in a fair way;
- (7) On the aspect of terminal policy support, tobacco business corporate should pay attention to the policy encourage measures to retail terminal, and should give consideration to the fairness and pertinence of policy support in long term policy encourage measure, and should pay attention to the promotion of sales performance brought by policy support;
- (8) On the aspect of terminal special image cabinet frame, tobacco business corporate should try to make the terminal special counter and goods shelf standardized gradually, and should pay attention to the unity of standardization and liveliness on the image propaganda of retailers, especially the tobacco retail network exclusive shops;
- (9) On the aspect of quality and effectiveness of materials, tobacco business corporate should pay attention to the improvement of the manufacturing quality of materials and exhibition effectiveness when providing special materials to terminal retailers;

### Promotion strategy of solve

In the promotion strategy of "Solve", the value driving factors belonging to this category are regarded as "important" and "unsatisfied" by retailers, therefore, the CVDS under this strategy shall be taken as the strategy needed to be solved at present.

- (1) On the aspect of product distribution speed, tobacco business corporate should establish more perfect and optimal distribution scheme, and regionalism should be adopted for large scale network exclusive retailers, with distribution divisions; the system of combination between distribution and self fetching should be established for small scale shop-in-shop retailers, to utilize the more flexible distribution method to improve the product distribution speed;
- (2) On the aspect of the accuracy degree of distribution bill, tobacco business corporate should perfect the customer management system of retail terminals, and ensure the absolute accuracy of the distributed products to retail terminals and the absolute conformity between the distributed products and the order by more accurate customer information statistics and order statistics, to achieve distribution zero error;
- (3) On the aspect of settlement convenience of accounts, tobacco business corporate should establish more convenient accounts settlement system, to transform the original cash and prompt goods to transfer from special joint account. It can be used to achieve the convenience of settlement while reduce the error of accounts;
- (4) On the aspect of accounts detailed degree and accounts error rate, tobacco business corporate should establish evening accounts settlement system and pay attention to the account standardization and detailed degree of retailers, especially large scale tobacco network exclusive shops, as well as the accuracy degree of accounts settlement;
- (5) On the aspect of current award policy and enthusiasm influence degree, tobacco business corporate should plan and establish channel award policy with more incentive functions, and conduct long term evaluation, to ensure that the policies can stimulate the growth of the terminal retail sales;
- (6) On the aspect of current channel layout, tobacco business corporate should plan for the tobacco market in a scientific and reasonable way according to geographic area and market capacity, and arrange the retail channel according to levels and regions, to achieve that there is no market blind spot and no competition coincident points as far as possible;
- (7) On the aspect of current channel protection policy, tobacco business corporate should establish the approval measures for the newly added large scale tobacco retail network exclusive shops and intervene with the addition of terminal retailers, and limit the bad competition of the channels of the same level in the same regional market.

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