Abstract:

The objective of this paper is to develop a framework for measuring the success of mergers and acquisitions amongst German winegrowers’ cooperatives. To this end the unique characteristics of winegrowers’ cooperatives are identified and existing frameworks of performance studies in other sectors and within different legal entities are analyzed. On this basis a new framework suitable to winegrowers’ cooperatives is developed.

The analysis shows that there are two main indicators to measure success: Grape payments and reserves built up by the net income. Both reflect the objectives of winegrowers’ cooperatives and therefore are the main indicators for success of M&A activity. Net income as stated in the annual report is not a suitable indicator for measuring profitability as it is distorted by grape payment. To gain a more comprehensive insight into the effects of mergers the two indicators should be augmented by taking into account other indicators, like cash flow, return on sales and market share. Because net income is not a suitable indicator, the profitability indicators should be calculated with the net income before grape payment. This method will display a more accurate picture of the market success of the cooperative.

Keywords: cooperatives, wine, performance study, mergers & acquisitions
1. DEVELOPMENT AND STRUCTURE IN THE GERMAN WINE INDUSTRY

During the last 30 years the structure of the German wine industry has changed substantially. The number of wine producing companies in 2009 was only half of what it was 30 years earlier. Since 1979 the number of enterprises declined steadily, down to approximately 25,000 companies in 2009. At the same time there was a shift in company size. While the number of companies with a vineyard area up to 5 ha declined steadily, the number of wineries with 5 ha and more rose until the year 1999 and declined only between 1999 and 2009 (see appendix 1) (Deutsches Weininstitut, 2013).

The same development has occurred amongst cooperatives. As can be seen in table 1 the number of winegrowers’ cooperatives in Germany declined from 342 in 1980/1981, to 179 in 2011/2012. However, while the number of cooperatives was cut in half, the vineyard areas of cooperatives have declined, but not to such an extent. In the same period it declined only from 34,935 ha to 30,066 ha. This reflects the ongoing merging process in the wine sector. Many cooperatives merge in order to grow into a larger entity; the drive to merge is a response to recent market conditions. (DRV, 2012, Württembergischer Weinbauverband, 2012).

Table 1: Development of Winegrowers’ Cooperatives in Germany

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Cooperatives</th>
<th>Vineyard Area in ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1070/71</td>
<td>497</td>
<td>31,769</td>
</tr>
<tr>
<td>1980/81</td>
<td>342</td>
<td>34,935</td>
</tr>
<tr>
<td>1990/91</td>
<td>314</td>
<td>37,148</td>
</tr>
<tr>
<td>2000/01</td>
<td>258</td>
<td>31,417</td>
</tr>
<tr>
<td>2005/06</td>
<td>220</td>
<td>32,111</td>
</tr>
<tr>
<td>2011/12</td>
<td>179</td>
<td>30,066</td>
</tr>
</tbody>
</table>

Source: DRV, 2012

Regarding this consolidation process in the wine industry, it is crucial to understand objectives and success factors of mergers and acquisitions. While the objectives are on the hand, there have been no investigations concerning the success and success factors of these mergers and acquisitions. As cooperatives still hold an important position in the German wine industry, it is of special interest to learn about the success and success factors of mergers among cooperatives.

Before it is possible to discuss the success/failure of cooperative mergers and acquisitions, it is necessary to define “success” in wine cooperatives. In order to accomplish this, the unique characteristics of cooperatives will be described. After that there will be an overview on current approaches of measuring success in mergers. At the end a framework to measure success in mergers of wine cooperatives will be presented.

2. COOPERATIVES AS A LEGAL FORM IN GERMANY

2.1 Characteristics of Cooperatives

Cooperatives are associations whose objective it is to provide goods and services to its
members in order to support the members in their business operations. The main objective is to enable the members to gain a higher income than if they acted alone. Cooperatives can only be founded as a means of self-help and cooperation. In general the members maintain their economic autonomy (Genossenschaftsgesetz §1; Deutscher Raiffeisenverband a).

Another characteristic of cooperatives is that all members are equal. Contrary to stock corporations, in cooperatives all members have the same voting rights. The voting rights are distributed in the manner of “one member – one vote”. In this way all members have the same influence on decisions regardless of their economic power. All duties within a cooperative are administered to by the members themselves (Gabler).

To become a member of a cooperative, the aspirant has to buy cooperative shares, which are defined depending on the capital demand of the cooperative. Out of these cooperative shares a minimum of 10% has to be paid in. Together with the reserves, the cooperative shares constitute the equity of the cooperative (Kircher, 2013).

2.2 Characteristics of Winegrowers’ Cooperatives in Germany

Many different kinds of cooperatives exist. This work will focus exclusively on economic cooperatives, especially on winegrowers’ cooperatives in Germany. Winegrowers’ cooperatives are productive, market-oriented associations. The members are located at the supply side of the value chain. They produce the grapes and deliver them to the cooperative, which produces and markets the wine (Gabler; Dülfer 1984).

According to this structure the members of winegrowers’ cooperatives have a double function: On the one hand they are members and furnish the equity, on the other hand they are the grape suppliers. They are the only providers for the cooperative.

Another characteristic of winegrowers’ cooperatives is that the equity shares are defined according to vineyard-size. The idea is that the members who use a cooperative’s facilities to a larger extent should also participate more in equity. So a member whose vineyard is double in size than that of another member holds double equity shares. However, the voting right stays the same, it is always “one member – one vote” (Kircher, 2013).

The main advantages of joint production and marketing are lower costs and higher bargaining power. The cost reduction is realized mainly through fix cost degression in wine making. The members avoid buying all the machines and equipment required to produce wine on their own. On the market side, the joint marketing gives a higher bargaining power through higher quantities. Likewise, some distribution channels are only open for high quantities that a single member could not deliver. For example, in the food retail sector some minimum quantities are obligatory to start negotiations. So the idea of joint production and marketing is to gain higher profits than if the members would act alone (Dülfer, 1984; Armbruster 2011).

As compensation for their work, the members of the cooperative are supported in two different ways:

- Direct support: payment for grape supply.
- Indirect support: innovations aimed at cost reductions and quality improvements which will lead to higher direct support in the future.
The payment for grape supply ("grape payment") which each member receives, varies according to the amount and quality of the grapes delivered. It is paid out in two to three tranches during the year after delivery. However, as a vintage is generally sold over a three year period, the future profit gained with these grapes is unknown upon delivery. The total profit is only realized four years later. The cooperatives handle this insecurity in two different ways. The first way is to fix the payment according to experience and projected value. If the vintage is more or less successful than estimated the up- and downturns are balanced with the reserves.

The second way of calculating grape payment is more accurate and much more demanding. In this approach the cooperative tracks each vintage separately until all units are sold. The vintners are also paid a preliminary amount in two to three tranches after delivery. But the final calculation occurs four years after delivery. The final profit of the vintage is calculated and if it was higher than estimated the vintners gain a surplus. If it is lower, the difference is balanced with a lower annual grape payment. However generally the cooperatives try to estimate cautiously to avoid this situation. During the three years the cooperative must build up reserves for possible future payments (Genossenschaftlicher Prüfungsverband für Dienstleistungen, Immobilien und Handel).

From the indirect support the members profit in an indirect way. In winegrowers’ cooperatives the net income is not distributed among the members but stays inside the cooperative. It is put into the reserves and is used for future investment, for example, investments in production technology. Even if a member leaves the cooperative these profits are not paid out. In that scenario the members receive only the equity share that they paid in (Kircher, 2013, Fink et al 2007).

3. MERGERS AND ACQUISITIONS BETWEEN WINEGROWERS’ COOPERATIVES

3.1 Basics on Mergers and Acquisitions

Mergers and acquisitions are a part of corporate strategy. The term describes the process of two companies consolidating into one joint company. But even if “mergers” and “acquisitions” are often uttered in the same breath, there is a slight difference between both of them. Generally, mergers describe the consolidation of two companies. Both companies agree to merge and to go forward as a single new company. Both companies’ stock are surrendered and a new company stock is issued in its place. Often mergers are described as “friendly” (Risse et al, 2006; Seiler 2004).

Contrary to mergers, acquisitions describe the process in which one company takes over another “target company” (or parts of it) and the target company ceases to exist. The target company is “swallowed” and the buyer company establishes itself as the new owner. When acquisitions take place without the agreement of the company that is to be taken over it is considered hostile (Risse et al, 2006; Volkart 2002).

In the cooperative sector both mergers and acquisitions occur, but hostile acquisitions are impossible. The consolidation of two cooperatives can only be carried out if the members agree to do so. The reason for this is that in order to merge two cooperatives the target cooperative needs to be dissolved and this can only be done if 75% of the members agree (Genossenschaftsgesetz §78, Umwandlungsgesetz, 2011, §84).

If two cooperatives decide to unify, an advisory report on the acquisition needs to be drafted. It
should demonstrate that the acquisition is in accordance to the members’ interests. Furthermore, the management board of both cooperatives signs a merging contract (Umwandlungsgesetz, 2011 §4-§6, Kircher 2013). In this contract the exchange rates for the cooperative shares are defined (Umwandlungsgesetz, 2011 § 80). The advisory report, the merging contract and the last three annual financial statements are to be presented to the general assembly for final acceptance (Schwedhelm, 2006).

If 75% of the members agree to the acquisition the cooperative that is to be taken over is dissolved; their assets and debts are transferred to the buying cooperative. The members also switch automatically to the buyer’s cooperative and receive shares of their “new” cooperative. However, they can also decline to become member of the new cooperative. In this case they are paid out their shares. The right to decline membership lasts for 6 months after acquisition (Umwandlungsgesetz 2011, §89, Schwedhelm 2006).

A merger between cooperatives generally follows the same procedure as an acquisition. The difference is that both cooperatives cease to exist and a new charter has to be devised. Furthermore, a new supervisory board and management board needs to be elected (Schwedhelm, 2006; Genossenschaftsgesetz 2013, §§ 97,98). Because the difference between “mergers” and “acquisitions” only concerns the consolidation process and leads to the same result, both expressions are used synonymously.

After completion of the merger/acquisition the company shares of both cooperatives need to be aligned. The difference in value between the former company share and the new company share needs to be paid in/out so that at the end all members have equal value shares (Schwedhelm, 2006; Genossenschaftsgesetz 2013 §7a, Abs. 2).

### 3.2 Objectives of Mergers and Acquisitions Among Winegrowers’ Cooperatives

Regarding the objectives of M&A activity cooperatives also differ slightly from other companies. While in companies one of the main objectives of mergers and acquisitions generally is the enhancement of shareholder value, cooperatives do not focus on shareholder value. It is less important for cooperatives because members do not profit directly from a rise in equity. When members leave the cooperative, they are only paid out the same equity share they once paid in. A much more important objective for cooperatives, as member-driven corporations, is the support given to the members. The main objective of mergers and acquisitions between cooperatives is to enhance the support payments and all factors that influence the payments. In winegrowers’ cooperatives the main objective is to enhance the grape payments. They can be increased if turnover increases and costs decline (Fink et al., 2007).

A very important factor to increase turnover and to decrease costs is the number of members in a cooperative. A declining membership generally leads to a lower quantity of grapes and thus to lower turnover. This results in lower fix cost degression and increases the cost of each bottle of wine. Furthermore, each member that leaves the cooperative results in loss of equity (because company shares are paid out). This limits financial freedom, especially regarding future investments (Kramer, 2004).

On the market side, more members put the cooperative in a better position. Many wine drinkers buy wine exclusively in super markets; therefore, the retail sector is a very important marketing channel. In order to deliver to the big retail chains a high quantity of wine is necessary. In
addition, higher quantity often means increased bargaining power, which results in higher prices (Seiler, 2004).

Last but not least, more members help to reduce the natural risk of wine making. As wine is a natural product it is highly influenced by weather conditions. The larger the geographical area of a cooperative the lower the risk of total crop failure.

To sum up, there are two main objectives of mergers and acquisitions between winegrowers’ cooperatives. The first and undoubtedly the most important objective is to maintain or to enhance the grape payments. The second is to maintain or to increase the number of members. Both objectives depend on each other: The more members are united in one cooperative, the better the likelihood is to gain higher profits and to pay out higher grape payments. And the higher the grape payment is, the more attractive the cooperative is to its members. Cooperatives with higher grape payments will have a lower risk of losing members because it becomes more difficult for a member to realize the same profit elsewhere (working independently or in another cooperative). All the other objectives which are often mentioned in the context of M&A activity, like economies of scope and scale, cost reductions, increased market share, etc., are secondary objectives and support the primary objectives.

4. MEASURING SUCCESS OF MERGERS AND ACQUISITIONS OF WINEGROWERS’ COOPERATIVES

4.1 Recent Approaches to Measure Success

Many companies and cooperatives use external growth as part of their corporate strategy and as a method to succeed in competition. The objectives of M&A activities are manifold but all aim to secure a company’s future and to improve its market position. But do mergers and acquisitions fulfill this objective? Are they successful?

First of all it is necessary to define the term “success”. Generally speaking success is “the accomplishment of an aim or purpose”. More concretely, success is “a person or thing that achieves desired aims or attains fame” (Oxford Dictionary). Put into the context of mergers and acquisitions, M&A activities can be considered successful when companies achieve their pursued goals. There is not only one criterion to determine the success of M&A activities. On the contrary, success seems to be best characterized by highly individualized criteria. This poses the question, how can the success of mergers and acquisitions be measured?

There are many studies measuring the success of M&A activity both in the cooperative and the company sectors. They differ widely in their definition, measurement approach and evidence of success. The approaches utilized can be divided into four groups. The first group evaluates merging activities between corporations from a macroeconomic point of view. This group attempts to identify the effects of consolidation processes on single industries and the entire economy. However, this article focuses on the microeconomic perspective, therefore these studies will not be examined in greater detail (Buckmann, 2012).

In the microeconomic perspective the most important approaches to measure M&A success are the following: “occurrence studies”, “performance studies” (outcome studies) and interviews. Some studies even combine these approaches. Occurrence studies focus on reactions to M&A activities at the stock market. They analyze fluctuations in stock prices following merger announcements. They do this by comparing “normal” stock price development to stock price...
development after the announcement. The difficulty is in estimating how the stock price would have developed without the announcement. But as the company shares of cooperatives are not traded on the stock market, this approach is of no interest for measuring M&A success amongst cooperatives (Buckmann, 2012; Spandau 2010).

The other two approaches are more interesting for cooperative mergers. In interviews managers and consultants who attended the merger are asked about the success of the merger. They give their personal opinion about the merging process and its success. In general, in interviews the success rates are higher than with the two other approaches. This can be explained by the fact that the interviewees are biased because they are being asked to rate the success of their own work (Buckmann, 2012).

A more objective approach is the analysis of financial statements, called performance studies. These studies attempt to evaluate mergers over the long term. In order to evaluate success a set of key indicators like profit, turnover, and return on equity, is chosen and analyzed. But this kind of analysis suffers from the same problem as the “occurrence studies”. It is difficult to know how the company would have developed without the merger. For this reason the studies generally utilize comparisons. They compare the company’s development to a set of companies in the same industry. Another problem is, that according to the key indicators chosen, the results might differ because the key indicators highlight different developments (Buckmann, 2012).

Regarding the objective, to learn about success between winegrowers’ cooperatives, both interviews and performance studies are applicable. In interviews both managers and new and old members of the cooperatives can be questioned about the success of the merger. This is very interesting, as it will allow a deep insight into the different points of view of managers and members. Analyzing the financial statements of the cooperatives will provide a more objective view the economic developments of merged cooperatives.

The focus of this paper is on the financial analysis, so we will take a deeper look at that approach.

### 4.2 Measuring M&A Success with Key Indicators

As mentioned above, the analysis of financial statements gives an objective insight into the operational performance of merged corporations. To get a preliminary idea of the success of the merger key indicators, taken immediately before and after the merger, can be compared. But to get a more complete picture of the success of a merger, the long term development of these indicators needs to be analyzed (Bestmann, 2011). To confirm that recent company development had its basis in the merger and was not caused by general industry developments, the key indicators should also be compared to other companies in the industry (Auerbach, 2009). Therefore, to get a comprehensive insight into the success of a merger, three analyses should be utilized:

- Short and long term comparison of key performance indicators before and after the merger (internal comparison).
- Comparison of key performance indicators with a selected control group.
The following indicators are, amongst others, used within performance studies:

- Turnover
- Net income
- Return on sales
- Return on equity
- Return on assets
- Cash flow
- Market share

Turnover is the annual sales volume excluding sales taxes and discounts. After a merger turnover is expected to rise because the number of clients and of products should increase.

Net income is the total revenue minus all expenses. In merged companies net income should rise as a result of increased turnover and reduced costs.

Return on sales indicates the percentage of sales that is available as profit. It is calculated as the margin between a profit indicator, e.g. net income or EBIT, and turnover. It is often used as an indicator of the creditworthiness of enterprises. Because it displays the sales-related earning capacity of an enterprise in successfully merged companies it is expected to rise.

Return on equity indicates the return on stockholders’ equity. It shows if the stockholders’ funds have been well managed. It is calculated as the ratio between net income and average stockholders’ equity. In successfully managed consolidated companies return on equity should rise (Krause/Arora, 2010).

Return on assets displays how well management has invested the total assets to generate earnings. Return on assets is the margin between net income plus interest expense, divided by total assets. The same as return on equity, after a merger it is expected to rise.

The cash flow indicates a company’s ability to meet its financial obligations. It shows if the company is able to generate a cash flow surplus and thus is able to invest. There are two different ways to calculate cash flow, both directly and indirectly. In the direct method the expenses causing cash outflows are subtracted from the revenues generating cash inflows. In the indirect method non-cash revenues are subtracted and non-cash expenses are added to net income/loss. For performance studies the indirect method is adapted because all the information is available in the income statement and balance sheet. In unified companies the cash flow is expected to rise due to synergies.

There are two different definitions of market share. The absolute market share indicates the company’s position in the entire relevant market. It is calculated as the total sales of the company in relation to the total sales of all suppliers on the market. It is difficult to calculate because the total market size is difficult to estimate. The relative market share is more easily estimated as it compares the company’s sales to the sales of their biggest competitor. As with a merger two companies become one and one company ceases to exist; market share of the new company should increase, both absolute and relative market share (Krause, Arora, 2010).

In an internal comparison (before and after the merger) it is necessary to define target levels for all performance indicators. In the critical literature it is often mentioned that the sum of two
merging companies should be 1+1=3 (Bühner, 1990). One might assume that the target level of the performance indicators after a merger should equal the sum of the former indicators plus a surplus. But this is impossible. Especially in horizontal mergers, equipment and clients might overlap to a certain extent. Because of this it would not be realistic to demand that the performance indicators after a merger must surmount the sum of the old indicators. To define realistic target levels a deeper look at each of the key indicators is necessary.

4.3 Framework to Measure Economic Success in Cooperative Winegrowers’ Associations

All of the performance indicators mentioned above can be used in performance studies on mergers and acquisitions between winegrowers’ cooperatives. However, due to the special characteristics of cooperatives in general and winegrowers’ cooperatives in particular some adjustments need to be made.

First of all the net income, as it is reported in the financial statement, is not suited to measure the profitability of mergers and acquisitions between winegrowers’ cooperatives. One reason for this is that realizing profit is not the main objective for cooperatives. The net income is not distributed among the stakeholders; instead it stays in the company and is allocated to the reserves.

As stated in section 2.2, the main objective of a cooperative is to support its members. In winegrowers’ cooperatives this is mainly accomplished by the grape payments the members receive for supplying the grapes. However, the price the cooperative pays for the grapes is not a market price but a political price that the cooperative decides on. As the grape payment is the only revenue the members receive, it is crucial for their satisfaction with the cooperative. If the grape payment is too low, the cooperative risks losing members because members will be more likely to switch to another cooperative, work independently or be forced to give up their business. As shown above this is a dangerous situation for the cooperative, as this will cause a loss in equity and vineyard area which puts it in a weaker market position.

The grape payment has a large impact on net income, as it is a main factor in cooperative expenditure. Higher grape payments lead to lower net income. Comparing the success of two cooperatives based solely on net income would lead to the wrong conclusions. Under the same conditions the cooperative which pays a higher grape payment will have lower net income and thus generally would be considered less successful. However, in the case of a cooperative, a lower net income could be an indication that it is more successful; its members might be more satisfied and have a better economic base for future production.

On the other hand grape payment should not be excessive. If the total net income is zero, there is no augmentation of the reserves. This would limit the future capability to act by hindering necessary investments. In the long term this would also put the existence of the cooperative at a risk. This shows that the amount of grape payments is a highly relevant decision. It also demonstrates that net income is not exclusively the result of economic action and therefore should not be used as a measure of profitability in merged cooperatives.

Nevertheless net income remains an important indicator for profitability. Therefore it should be included in the performance study in an adapted manner. In order to evaluate the economic success of winegrowers’ cooperatives the net income before deduction of grape payment should be utilized. This indicator displays the cooperatives’ success concerning revenues, gives information on cost effectiveness and is the base for grape payments and reserves. In order to
calculate the relative indicators, like return on sales, return on equity and return on assets, profit before grape payment should be utilized. This enables an accurate comparison between the cooperatives’ profitability.

Nevertheless, net income as stated in the annual report is an important indicator of the cooperatives’ long term market position. As all net income is allocated to the reserves, it informs the ability to finance future investments and therefore should not be overlooked. A cooperative can only execute necessary investments if adequate reserves are built up.

As a complete framework to measure the success of M&A activities between winegrowers’ cooperatives the following system is proposed:

The most important indicator for cooperatives’ success is the grape payment. It should be the focus of performance measurement as it is the main objective of each winegrowers’ cooperative (direct support to the members). The grape payment plays a crucial role for the members because it is the only revenue they receive and secures their living. Furthermore, for the cooperative it secures equity and grape supply. But the total grape payment is not an accurate indicator for industry or for internal comparisons. When comparing different cooperatives the number of members amongst which the grape payments are distributed needs to be taken into account. There is a big difference if a grape payment of 1m euros is distributed among 100 or 200 members. The same holds for internal comparisons: In a merger a cooperative gains additional members, so a slight increase in grape payment might even lead to a decrease in grape payment per member. Therefore, grape payment per member is the correct base for measuring success within cooperatives.

The second important indicator in measuring the success of cooperatives is net income. The level of the reserves informs a cooperative’s ability to invest; reserves are built up by the net income realized each year. However, as shown above, net income is not the correct measure for a cooperative’s success. A bigger cooperative will also need higher reserves for future investment and therefore should gain higher net income. In order to accurately compare cooperatives of different sizes the correct measurement is net income per member.

In the case that the number of members is not available for analysis, the vineyard size of the cooperative provides a good alternative indicator. The grape payment per vineyard area is also a good approximation for a cooperative’s success; in general a bigger vineyard should lead to higher profit both for the members and for the cooperative. This also holds for the net income: The bigger the vineyard area, the more grapes are produced and the higher the demand for investments.

To sum up, in a performance study on mergers two indicators are crucial:

1. Grape payment /number of members or grape payment/vineyard size

2. Net income/number of members or net income/vineyard size

Together these two indicators reflect the cooperative’s aims and should be the basis for all statements regarding M&A success. These indicators display the current and future market success of the cooperative.

The other indicators mentioned above should be used as complementary indicators augmenting the analysis. They cast a light on different aspects of management which are also important to
cooperatives. They display development in profitability, liquidity and market position. But as mentioned above the indicators, return on sales, return on equity and return on assets, should not be calculated with net income but with profit before grape payment in order to avoid distortion.

Figure 1 displays the framework for the performance study in merged winegrowers’ cooperatives

5. CONCLUSION

In comparison with other companies, cooperatives have special characteristics that influence the performance measurement of mergers and acquisitions. The main differences concern the objectives: While companies aim to maximize profit and shareholder value, cooperatives are founded to support their members. Winegrowers’ cooperatives support their members directly through grape payments and indirectly through reserves for future investments built up from net income. Therefore, the main indicators to measure M&A success are the grape payments and the net income which builds up the reserves. For an accurate comparison between cooperatives both the grape payments and the net income need to be put into relation to the size of the cooperative, represented by the number of members or by vineyard size.

To accomplish the evaluation additional indicators, such as return on sales, return on equity, return on assets, market share and cash flow, should also be analyzed. But as net income in winegrowers’ cooperatives is distorted by the grape payment, profit before grape payment should be used for calculating the profitability margins.

The next step in the development of this framework is to work out additional key indicators in more detail. The most important key indicators need to be selected and investigated in order to define the expected indicator levels for use in internal cooperative comparison, both before and after the merger.
Appendix

Table 2
Vineyard Area of Viticultural Enterprises in ha: Growth and Decline

Source: Federal Statistical Office (Destatis), derived from: Deutsches Weininstitut, 2011/12
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