European Foundation for the Improvement of Living and Working Conditions

EMCC case studies

Trends and drivers of change in the food and beverage industry in Europe: Danish Crown

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Company profile

Danish Crown is an international food company specialising in the production of meat (pig meat and beef – NACE codes 15100–15112). With 22 million pigs slaughtered per year (90% in Denmark), it is the largest pig slaughterhouse in Europe and the second largest in the world.

The Danish Crown Group has a turnover of approximately 6.5 billion euro, of which 3.7 billion is exports. This corresponds to 6% of Danish exports and 56% of Danish agricultural exports.

The group employs about 28,500 people. Some 11,000 are employed by the parent company, the rest by subsidiaries. Much of the turnover is created in the subsidiaries, which include production companies as well as trading companies with different specialities. All subsidiaries have an independent profile, but all production is strategically coordinated among the group.[1]

With the exception of Plumrose (USA), the production is primarily based on Danish raw materials and products. The US production is based on American raw materials. US sales of products from other Danish Crown companies are performed by Danish Crown USA (fresh meat from the parent company) and Majesty (Tulip Products)

Danish Crown is a cooperative society with a popularly elected management (a board of directors and a committee of delegates) consisting of members (farmers) and representatives of the employees. The committee of delegates has 325 members. The board of directors has 22 members.

This case study focuses on Danish Crown's activities in Denmark because recent developments indicate that the company will follow a strategy of keeping large parts of the production in Denmark, although the company is experiencing greater price competition.

Products and clients

Danish Crown is involved in the following products and markets in the main company and subsidiaries.

- Fresh meat, which involves slaughtering pigs and cattle and wholesaling fresh meat products to meat traders and national and international retail chains. The fresh meat companies were responsible for 52% of 2004–2005 turnover (47% from the pork division and 5% from the beef division).
- Processing, which involves production and sale of processed meat products[2] for the retail and food service sectors worldwide. The processing companies were responsible for 33% of 2004–2005 turnover.
- Trading, which involves sales and distribution of meat and meat products (including products from the Danish Crown Group) to most of the world, through an international network of sales subsidiaries. The trading companies were responsible for 10% of 2004–2005 turnover.

Finally, 6% of turnover comes from companies whose profile does not match any of the areas already mentioned. An example is SKF Food, which supplies spices, flavourings and ingredients to the food industry in northern and eastern Europe.

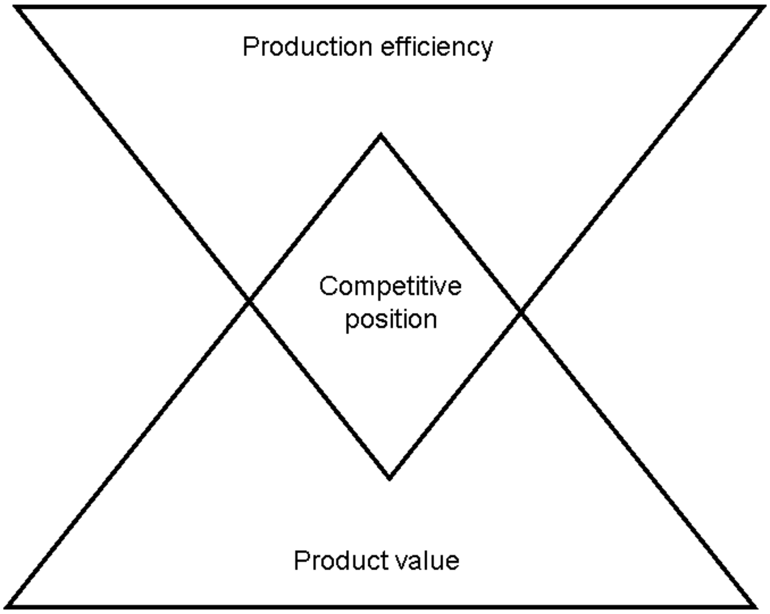
[1] See Appendix A for a list of subsidiaries.

[2] E.g., sausages, cooked and sliced beef, etc.

Market dynamics and company changes

Figure 1 shows that in the most general strategic terms, companies' competitive market position is determined by their ability to influence their process efficiency and the value of their products.

Figure 1: *Efficiency, value and competitiveness.*

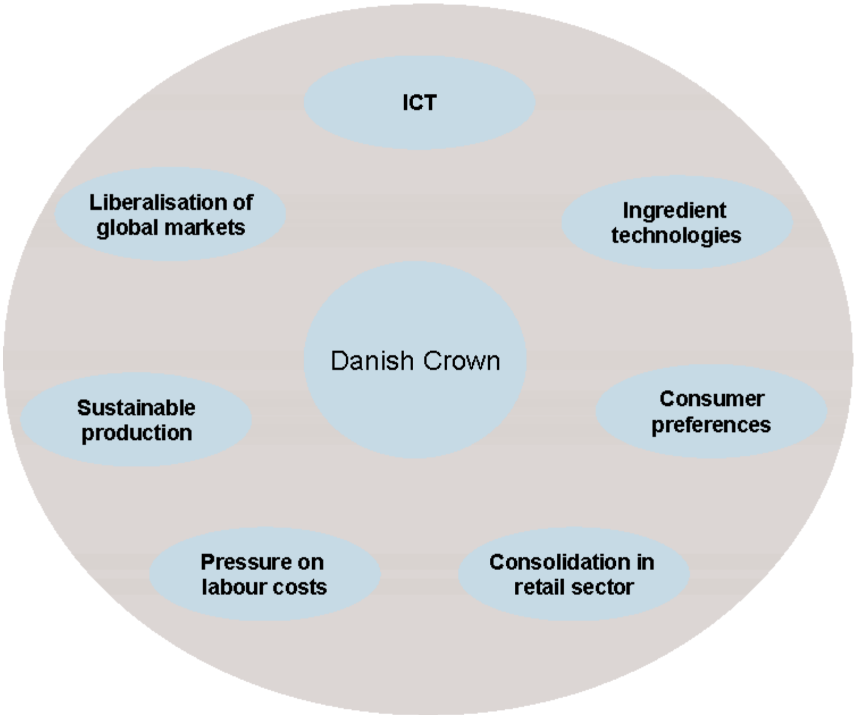


Production efficiency refers to the production setup of companies, that is, at what cost and quality they are able to produce their products.

Product value refers to the perceived customer value of the products, that is, how much customers are willing to pay for the products and how companies can increase the perceived value of the products.

Figure 2 illustrates the most important themes and trends that influence Danish Crown's markets and thereby its strategic decisions and activities to tune product efficiency and product value. The following sections describe each trend. While it is recognised that in practice trends are often interrelated, they are discussed under separate headings to provide the best overview.

Figure 2: *Trends influencing Danish Crown.*



ICT

The importance of information and communication technology (ICT) for production, distribution, and logistics in the meat sector in general, and in a corporation like Danish Crown in particular, can hardly be overestimated. First and most conspicuously, the efficiency and flexibility of slaughterhouses and meat processing facilities can be and has been increased considerably, using technologies that include some form of ICT. This includes robots in production, complex production management systems, internal and external logistics, and storehouse facilities.

However, there are other important benefits related to the introduction of ICT. The use of identification technology, from bar-code systems to radio frequency identification (RFID) tags,[3] makes it possible to trace an individual meat packet up and down the value chain, from farm to table, in the event of food contamination, for instance.

The use of ICT is very important for Danish Crown in achieving its strategic goals. The global price-based competition for raw meat means that Danish Crown has unfavourable competitive structural conditions compared to most other countries. A high minimum wage for low-skilled work, high taxes, and rather strict laws on environment and animal welfare put Danish Crown under pressure to reduce costs by increasing efficiency and being innovative. The company has responded to this pressure by concentrating production in a few very high-tech production facilities and by offshoring some of the work.

[3] Radio Frequency Identification – a technology similar in principle to bar code identification. An RFID system consists of a receiver that reads the radio frequency and transfers the information to a processing device, and a transponder or tag, which is a chip containing the information to be transmitted.

Danish Crown has made significant investments in new technologies to keep efficiency high in order to ensure that fresh meat products are produced at costs that are fully competitive with production costs in low-wage countries. In 2005, the company opened the world's most technologically advanced production facilities in Horsens in Denmark.

The facility can process 77,000 pigs a week and has approximately 1,300 employees. Much of the production machinery was developed especially for this site – much of it in cooperation with the Danish Meat Research Institute. The industrial machinery and the organisation of workflows were designed to increase efficiency, but also to minimise hard physical and repetitive labour.

Consumer preferences

The importance of the development of consumer preferences can be difficult to assess currently. Consumer preferences vary depending on markets (demand in Japan is different from demand in Denmark); and although global consumer trends might be emerging, there are very few available data on their actual influence on market conditions.

However the company identified the following trends as important: a growing demand for convenience (high-quality, ready-made, or semi-prepared food), an emphasis on organic food and sustainable production, and food safety.

Danish Crown sees such developments as interesting, because its advanced production facilities allow it to provide the new types of products and services that consumers might want in future. This flexibility will allow it to move some products away from the bulk market with its very tough price-based competition to markets with other parameters that can be just as important for consumers.

Consolidation in the retail sector

The retail sector has undergone several waves of consolidation during the last decade and this means that the bargaining power in the value chain has been moving towards the retail sector. Companies such as Wal-Mart, Tesco, Carrefour and Royal Ahold have reached a size that puts them in a position to:

- demand very low prices because they are placing extremely large orders
- develop private labels
- demand specific transport and logistical setup

A natural development for Danish Crown has been to grow big enough to serve the big retail brands and industrial customers and also have a good deal of bargaining power.

Ingredients technologies

Developments in ingredients technologies have come fast in the last decade. New types of ingredients can, for example, enhance the flavour and shelf-life of food products and even help to cut food processing costs. Most development is in food processing, and because 55% of Danish Crown's turnover is in fresh meat, ingredient development has not been top priority. Nevertheless, one of its development companies develops food ingredients for markets in northern and eastern Europe.

Pressure on labour costs

The liberalisation of global markets means that competition is growing fast and is expected to grow even more in future. Companies based in emerging economies (such as Brazil or Ukraine) can produce goods at very low prices because of low labour costs. Therefore, companies based in countries with high labour costs face the following choices and challenges. They can:

- use technology and new organisational strategies to achieve a production setup that is competitive with production in low wage countries;
- outsource production to low-wage countries;
- develop product value to position themselves outside price-based competition from low-wage countries.

Being a cooperative, Danish Crown cannot just move production to Ukraine, because its owners and suppliers are Danish farmers, located in Denmark. Moreover, the present logistical setup would make it difficult to move production too far from Denmark.

To remain competitive, the company has centralised production in Denmark at a few high-tech production facilities and outsourced some production. It has analysed all parts of production to determine which can be kept in Denmark (by substituting advanced technology for labour) and which are so labour intensive that they must be offshored.

Box 1: *Technological development and offshoring – splitting up the value chain*

Danish Crown has developed a machine that automatically removes all organs and intestines from pigs, thereby doing the job of two or three workers in the product line. However, it has not been able to develop a machine that can clean the pigs' intestines at a price that is competitive with Chinese labour. Consequently, Danish Crown ships pig intestines to China where they are cleaned manually and then sent back to the food processing facilities in Europe.

Sustainable production

Animal welfare, production facilities' effects on the environment, and prevention of injuries and repetitive work can be grouped under the heading sustainable production. These issues have become increasingly important for Western consumers and governments. Company incentives to work with them can come from public rules and regulations, internal values and strategies for corporate governance, or from the ability to charge a premium for goods produced by sustainable methods.

Danish Crown works on all these issues to enhance the value of its products and to improve relations with the stakeholders. The company's annual report includes key statistics on environmental issues such as waste water, 'biomass to biogas', and disposal of animal by-products. In 2004, the slaughterhouses in Denmark were environmentally accredited, and the new production facility in Horsens is designed to minimise energy consumption and hard labour. The facility is also designed to keep the pigs in groups (where they all know each other) until they are slaughtered, thereby minimising their stress, tension, and exposure to noise.[4]

[4] This initiative also adds value to the product: non-stressed pigs do not break down their stores of carbohydrate. As a result, the meat retains moisture, has a better colour and is more tender.

Liberalisation of exposure to global markets

Meat is traditionally consumed in the country where it is produced, but there is a strong trend towards more meat exports.

The liberalisation of global markets means that markets are becoming larger and that competition from low-wage, emerging economies is increasing. So far, veterinary regulations have meant that rich countries trade with rich countries and poor countries trade with poor countries, but in the foreseeable future, some of the emerging economies will be able to meet higher veterinary standards and the competition will increase significantly. Danish Crown's growth strategy, investment in ICT, offshoring activities and investment in sustainable production should be seen in the light of these challenges.

However, emerging economies such as Romania, Russia and Ukraine are also interesting from another perspective. First, the structural conditions for food production are very favourable and second, there is a significant local demand for meat because the existing production facilities are very poor. It would be interesting for large companies such as Danish Crown to buy farms as well as building slaughterhouses, using their expertise to produce high-quality meat at very low cost.

An example of such a strategic move is Smithfield Foods, which plans to invest USD 800–900 million in pig farms and production facilities in Romania and to start serving the Romanian and European markets from there.[5] Danish Crown is currently considering doing the same in other emerging economies but such initiatives would not replace the existing production facilities in Denmark.

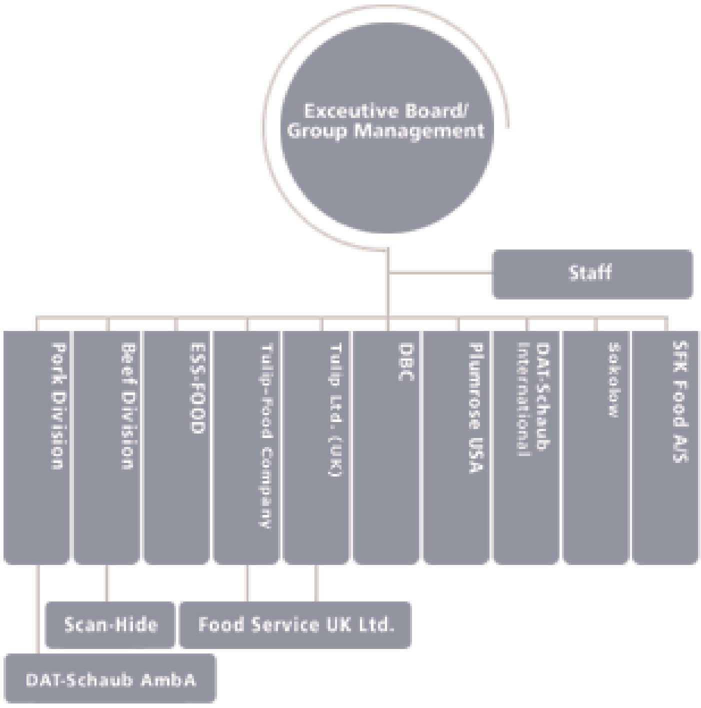
Organisation, production and markets

As already mentioned, the Danish Crown Group consists of a number of companies located in different countries. A significant share of the turnover is created in the subsidiaries, which include production companies as well as trading companies with different specialities.

With the exception of Plumrose (USA), the subsidiaries' production is primarily based on Danish raw materials or products. Plumrose's production is based on American raw materials but the subsidiary also sells the parent company's products in north America and provides the group with useful knowledge. It should also be mentioned that Tulip UK produces and processes more than 1 million indigenous pigs, as does Sokolow in Poland.

[5] http://nationalhogfarmer.com/news/romanian-pork-industry/index.html

Figure 3: *Organisation of the Danish Crown Group*



Supplier relations

The supplier relationships of Danish Crown are complex because the company's suppliers of raw materials also own the company. This means that there can be differences in the strategic outlook and interests of the owners/suppliers and the day-to-day management of the company.

Generally speaking, the owners/suppliers' main interest is to maximise the payment per pig by Danish Crown to the suppliers. From this perspective, the focus is on optimising the core business (slaughtering) by cutting all costs that are not related to slaughtering and by improving the efficiency of the slaughtering processes.

The main interest of the management team is the same, but management also wants to invest more in research and development (R&D), product development and HR development to be able to compete in the new global competitive environment. For example, investment in product and process development in the field of food processing could allow Danish Crown to move up the value chain towards activities with a higher added value.

Box 2: *Danish Crown in the value chain*

In 2003, more than 132,000 tonnes of pig meat (worth €200 million) were exported to southern Europe and turned into dried meat products (like Spanish serrano ham and dried salami) as well as cooked meat products (e.g. cooked ham). When this meat is re-exported to Denmark it commands prices significantly higher than raw ham.

However, investments in the future would have to be deducted from the balance sheet, with a direct negative effect on the price per pig to farmers, giving rise to a potential conflict between the owners' immediate interests and the management's business development perspective. The company experience is that the modern farmers on the board of directors and the worker representatives' committee have no problem with developing the value-added side of the business in the long term.

However, the company's tendency to focus on northern European markets, where the scope for high added-value meat products is not nearly as large as in southern Europe, is a problem. Unless the company develops new added-value products tailored to the southern European markets that will require significant investment in the short and medium term, it will not be able to penetrate the high value-added market segment. For example, Tulip Food Company's production of cooked and dried ham in Germany is substantial, but it primarily addresses the northern European market, not the southern. Danish Crown management and its owners need to agree on a strategy for developing the high value-added product segment of the business.

The difference in interests in underlined by the fact that some German slaughterhouses can offer better prices to suppliers than Danish Crown, because a large share of production is sold in the domestic market and production wages are lower. Consequently, some large farms export their live pigs to Germany. This is of no great concern to Danish Crown so far because less than 1% of Danish pigs are exported for slaughter abroad.

Danish Crown uses many different equipment suppliers and much of the technology is developed as state-of-the-art projects in collaboration with various research institutions, notably the Danish Meat Research Institute.

Workforce and the labour market

Danish Crown has 28,000 employees in more than 10 companies, so a comprehensive analysis of its total workforce development is outside the scope of this study. It does discuss developments at the high-tech slaughterhouse in Horsens because that facility applies the newest technologies and uses the latest methods of work organisation.

In the current Danish labour market, it is hard to hire workers for a slaughterhouse shop floor. Traditionally, this work did not require formal education, was physically demanding and was male dominated. Long-standing employees have been prone to work-related injuries in the back, arms, and neck. Employee turnover in Danish Crown's slaughterhouses used to be high, about 20%, but those who stayed tended to stay for a very long time. A good social atmosphere and high wages are mentioned as the key reasons for this.

However, with the introduction of new technology, work has changed significantly and so has the demand for employee competencies. Traditionally, the employees on the shop floor level wore either white (if they worked with meat) or blue (if they were metal workers or electricians). However, with the new machinery, many employees need a 'pale blue' competency profile because the machinery requires ad hoc adjustments and a variety of setup procedures.

The total interconnectedness of the new system means that an error in any section of the production line leads to many more problems than in the old days. Formerly, different parts of the production line could – at least for some time – work independently. Danish Crown has worked for a long time to optimise, adjust, and synchronise the whole production line so that the different parts of the production line are totally coordinated and 100% reliable across the production procedures. Consequently, it has taken 1.5 years for the production facility in Horsens to reach 90% of its operational capacity.

The introduction of new technology requires more employee training and new paradigms for shop-floor management. This, in turn, increases the costs associated with high staff turnover and puts pressure on management to keep employees longer to ensure a reasonable payback on the investment in human resources.

Salary structure and benefits

It is estimated that the average pay for a Danish Crown production worker is between 3,500 and 4,000 euro a month. This is almost double the average in Germany and undoubtedly makes the job the best paid in Denmark for unskilled labour. The salary structure for production workers is based on group performance with a guaranteed minimum wage. Benefits are primarily related to educational activities; employees are offered courses that are not all work-related.

Labour relations

All Danish Crown employees are members of a trade union. Slaughterhouses have a tradition of selective strikes and the last few years of consolidation in the sector and the tendency towards offshoring has also spurred a relatively high number of strikes (by Danish standards).

The major issues of the strikes have been staff cuts, movement of production facilities, new working-time rules and the development of incentive-based wage schemes.

Generally, strikes are very painful for Danish Crown. Customers, and particularly owners, have very little patience with them, putting strong pressure on management to avoid them. Recent years have seen fewer strikes and in 2005, Danish Crown had only three that were significant. In one, 370 workers at the new plant in Horsens went on strike in June because management wanted to introduce a piecework contract that the workers believed would reduce their wages. There were two other similar strikes where the workers were dissatisfied because of the threat of jobs going abroad or because of piecework contracts.

Education and training

A range of issues influence Danish Crown's education and training policies and practices.

Integration of disadvantaged groups in the labour market

Between 10–15% of the labour force on the shop floor have an ethnic background other than Danish. This is a very high percentage for Denmark, and it means that the company has several initiatives related to Danish language training. Interestingly, almost 50% of employees taking part in these courses are native Danes who wish to improve their reading and writing abilities in Danish. This might be related to the new demands on the workforce to master more operations, including, for example, machine maintenance.

New technologies increase demand for education and training

As noted earlier, the ideal competency profile of many production workers has changed with the introduction of new technologies. Danish Crown addresses this issue in three ways.

- First, new employees must now go through a five-step training course, arranged and facilitated by the company, as an introduction to the workplace and the work. The course also aims to give new employees a general understanding of the company's business side.
- Second, there is specific training on new equipment. The equipment manufacturer does most of this, which is given to a selection of employees who then pass their skills on to their colleagues.
- Finally, the entire staff undergoes hygiene training in order to ensure the highest possible product quality.

New technology means new management procedures
Shop-floor management style has traditionally been militaristic or Tayloristic, with a supervisor yelling orders. New technology as well as the high employee turnover means that Danish Crown is trying to improve the working climate by introducing a new management style. More responsibility is delegated to the workers and the management style is moving towards more personal coaching. This means that middle managers have to undergo training themselves to master the new style. In addition, the concept of value-based leadership has been introduced to both white- and blue-collar workers in the pork division.

Research and development

R&D at Danish Crown falls into the following categories:

- production processes;
- new food products;
- new uses for food and/or production by-products.

Developing production processes
So far, focus in terms of size of investment and management attention has been very much on R&D in production processes. This focus is expected to continue, although global competition is bringing attention to other areas. The main challenge for the production processes is to speed up the implementation of ideas and to ensure better communication between R&D staff and production staff. Much of the R&D has taken place over long periods with little interaction between the staff groups, so there is a feeling that there is room for improvement.

Developing new food products
Developing new food products is recognised as an important way for Danish Crown to move the company away from price-based competition. The company's attention to this is already apparent in the large development centres run by the two Tulip companies, and the area is expected to receive more attention in future. For example, the company expects to explore the potential of greater cooperation with big retail chains on product development. The retail chains have intimate knowledge of customer preferences, so cooperating with them should help Danish Crown's chances of success.

Positive side effects are expected from greater cooperation with the retail chains. The cooperation, it is expected, will increase the retail chains' knowledge of the company's products and enhance their loyalty to the company and its brands.

Developing new uses for food and by-products
Development of new uses for food and by-products – i.e. market development and market innovation – calls for innovative skills and the ability to think outside the box. So far, this has not received much attention in Danish Crown. However, as the need to develop high-value products increases, the feeling is that it will become more prominent.

A common theme for all three areas is that Danish Crown needs to develop a more professional project culture where people with different competencies are able to work together in teams. New structures should also be in place to ensure that new projects are aligned with the company's general strategy and that development and implementation are timed and aligned with other project activities.

Technology in the workplace

The technological dimensions of the workplace have already been described in some detail. In summary, it can be noted that technology is a central tool in the company's strategy. With investment in technology come organisational changes that might generate opposition from labour unions and create conflicts that are hard to resolve to the satisfaction of all. Investment in technology must be followed by investment in human resources and training and education if the true potential of the technology is to be realised.

Conclusion

Danish Crown has become a dominant player in its market and has invested significant resources in new production equipment and in mergers and takeovers of other companies. Therefore, the company is well prepared for increasing international competition, where price is an important parameter.

On the other hand, it is important to avoid making price the only competitive advantage because competitors with production facilities in low-cost regions can produce and sell products cheaper. The investment in new production systems must also be used to increase product quality, production flexibility, documentation of product quality, and health and safety standards.

To succeed in this, more resources must be invested in developing the workforce competencies, which is a challenge in a bouyant labour market where the employee churn rate is high.

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Source list

Interviews (March 2006) with:

- Elo Bromer (Head of IT)
- Søren Tinggaard (project manager, sales department)

Guided tour of the facility in Horsens (by Elo Bromer)

Supplementary documentation on organisation from the company itself

Company website: **http://www.danishcrown.dk**

Annual report 2006, accessible at: **http://www.danishcrown.dk**

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