

MAINTENANCE OUTSOURCING – ONLY A MODERNISM OR A USEFUL STRATEGY TO INCREASE PRODUCTIVITY

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Summary:

Managers of steel works are frequently confronted with the task to analyze, whether and where outsourcing is a useful vehicle to increase productivity. Outsourcing is an issue, where emotions play a great role in decision-making. The paper intends to provide a frame for a rational decision-making and tries to provide some input, how to deal with emotions. The paper demonstrates that outsourcing in maintenance is not a modernism but a useful strategy to increase productivity.

Core competence, outsourcing, maintenance

1 . Introduction

The most important success factors in steel industry, which determine the competitiveness of a steel producer are:

- the costs of raw material delivered at works taking into consideration especially the shipping cost
- the quality of the products and the costs of the product at the clients' locations
- the conversion costs necessary to make out of raw material a product ready for shipping

For the reason that costs of maintenance constitute an important part of the conversion costs, e.g. 30% of the conversion costs to produce steel management is putting a special focus on the maintenance. Among other options management is considering the outsourcing of maintenance as one possibility to control and manage the maintenance costs and to increase productivity.

The paper will analyze the pros and cons of the outsourcing option and will show a model for the respective decision making process.

2 . Core Competence and Outsourcing

A common concern of the management is that by outsourcing certain activities the enterprise might lose the capability to produce steel. To deal with this concern let us discuss, when a capability is essential for the competitive position of an enterprise. Capabilities essential for the competitive position are often called core competence. A core competence is a unique capability that generates some kind of competitive advantage. It corresponds to a business process and involves underlying skills, functions, system and knowledge. To determine if an activity or a set of activities is a core competence the following question has to be answered: do these activities give the company a unique advantage over its competitors and help to make or keep the company profitable?

A unique advantage implies that a company can do something better than the competitor, whereby on the other hand the competitor cannot find somebody on the market, who can provide services which overcome this competitive disadvantage.

Just an example: Company A has developed a payroll program, which is better (more efficient = less cost to calculate the payroll per employee). However, company B can buy software from a software company, which is better than the software of company A. This example tells us, that an advantage is only unique, if the competitor cannot buy the competence or if it takes company B a long learning curve with or without considerable investment to fill the gap constituting the specific competitive disadvantage. This example shows also that when analyzing the core competences with relation to the competitors it is necessary to consider the services offered on the market by non-steel producing companies. From this example derive the following further definitions:

- An absolute core competence is a capability which is really unique (better than the competitors and no better offer is available on the market)
- A relative core competence is a capability, which allows a better performance than the competitor, but there are offers with a better performance on the market

On the other hand a company can only outsource an activity, if there is an offer on the market and should only outsource, if the available offer is better.

To summarize the above:

- An activity, which constitutes an absolute core competence, must not be outsourced. Outsourcing such an activity would mean the loss of a core competence and therefore reduce the competitiveness mid term.
- An activity, which constitutes a relative core competence, may be outsourced, if the outsourcing increases the competitiveness
- An activity, which does not constitute any core competence, should be outsourced, if the outsourcing increase the competitiveness

3. Maintenance Functions and Core Competence

In the following chapter we will describe a decision-making procedure, which helps to analyze maintenance areas in respect of activities to strengthen competitiveness.

This analyzes should be performed at least every 3 to 5 years. Objective of this decision-making process is to either declare an area of maintenance an area of present or future core competence or an area for future or ongoing outsourcing. Resources are always short in an enterprise, may they be financial or human. It is well known that the optimal allocation of available resources is a decisive key factor for entrepreneurial success. To keep an absolute core competence as such requires resources. To make out of a relative core competence an absolute one requires even more resources.

Step 1: Breakdown of the maintenance functions into areas of examination

Apart from the case of an entire outsourcing of the maintenance functions, which up to now is very rare in steel industry, but which occurs in the petrochemical industry, as a first step the maintenance functions have to be broken down into areas of examination. For breaking down the maintenance functions into areas there are some possible approaches, which could be applied individually or in combination. The typical appearance of an examination area is that services performed within this area:

- Can be precisely specified, e.g. planned crane maintenance – number of cranes are known, service periods are known
- Can be planned in advance
- Show a measurable result, e.g. availability of the cranes
- The own cost can be determined

Maintenance functions can be structured according the following criteria:

- Kind of activity: policy definition, determination of strategy, planning of maintenance jobs, planning of spare parts requirements, trouble shooting maintenance, planned online maintenance, offline maintenance, feedback analyses etc.
- Plant structure: plant, plant units, mechanical, electrical components etc.
- Type of skill: planning of jobs, mechanical maintenance work, electrical maintenance work, civil engineering work, software maintenance etc.

Step 2: Evaluation of own competence

For each defined area of examination the own competence has to be evaluated. This evaluation should be made independently by the responsible maintenance management and by their clients, the responsible management for operation. It is quite human that the maintenance management will allocate a higher core competence indicator to its area than the operation management. The critical issue in evaluating the competence is to find appropriate performance indicators and to identify benchmarks for such indicators.

Typical indicators are:

- Cost per ton
- Cost per unit
- Availability
- Lifetime
- Percentage of trouble shooting etc.

Another issue is to define the competitors, with which the comparison is taking place. It is advisable to use the letters A (for absolute core competence), R (for relative core competence) and N (for no core competence) distinguished by numbers 1 to 3, whereby 1 is the best.

Step 3: Select areas for potential or ongoing outsourcing

All areas of examination marked with R and N are further considered. For the reason that resources are always short it is recommended to start with a wide range of areas being potential candidates for outsourcing. In reality the range will shrink considerably, because no suitable offer for outsourcing will be available. On the other hand if some areas are already taken out too early, too much resources will be required to develop the areas leading to the effect that instead on concentrating the resources on few key items, the resources are too widely spread. The result will be an unsatisfactory improvement of the competitiveness.

Step 4: Find partners for outsourcing

What is the difference between an outsourcing partner and a subcontractor? The subcontractor performs its work according to the specification of the purchase order. A subcontracting relationship can be a win-win, win-loose, loose-win and loose-loose situation. A subcontractor is only interested in getting repeat orders and in earning money on the orders. A subcontractor never has any exclusivity. An outsourcing

partner is interested to work in a win-win situation on a long-term basis. Precondition is the exclusivity of the partner for the duration of the contract. A long-term contract enables the outsourcing partner to invest in order to ensure a win-win situation.

Based on this difference between subcontractor and outsourcing partner the management has to look for an outsourcing partner for each of the selected areas of examination. Sometimes it is not easy to find such a partner, who is already providing services for the requested area. Then it is useful to analyze partners in respect to their business strategy by asking the question: Who is already working in a related field and might be interested to extend his business in the requested direction? Does the allocation of resources to such new areas fit to the strategy of the prospective partner?

Step 5: Calculate own cost of the same area of examination

In the next step the targets for outsourcing are to be defined in more detail. The purpose of this exercise is to be able to present the potential partner the targets to be achieved by outsourcing. As the basis for setting the targets the knowledge of the own cost is necessary. Normal cost accounting does not show a correct figure because cost accounting does not contain the cost of managing complexity. The more complex an area is the higher are the hidden cost of complexity. Therefore in assessing the target costs two elements have to be considered:

- Evident cost as per cost accounting containing true values of e.g. man-hours rates containing the provisions for time of absence and underutilization or cost of material considering interests on working capital
- Cost of management structure to manage the area of examination

Based on the assessment of the own cost per unit the target values can be defined. Typically the target values have to show a tendency of cost reduction. The starting points are either the present costs or can even be higher, if another target for improvement of other key indicators such as availability or lifetime is set. Example: the cost of repairing a caster mould is x. If the lifetime of a caster mould is extended by 20%, the initial target value could be 20% higher to be neutral or even positive (more production with the same equipment) at the beginning.

Step 6: Get quotations from potential outsourcing partners

While for subcontracting it is normal to request proposals from several suppliers, in the area of outsourcing it is not a must to get several offers. Although it is always good to know that are alternatives to the preferred partner. The reason for this is that in sourcing again always exists as an option. Any contract with an outsourcing partner has to consider the possibility of in sourcing after expiration of the outsourcing contract.

Step 7: Final decision

Based on the quotation received from the potential outsourcing partner the decision can be made, whether the area of examination should be outsourced or not.

Even if the decision made was against outsourcing, it has to be understood that in such case measures have to be defined and resources have to be allocated to make the area of examination continuously more competitive for the future. This also applies for areas of examination, where the outsourcing option was never considered.

To summarize the outsourcing option is a possibility to reduce cost of maintenance. Decision can be made following a systematic procedure as described. A detailed controlling system facilitates the decision making process. However, a detailed controlling system also allows defining targets for continuous improvement for areas of examination, for which the outsourcing option is not applicable.

4. Controlling Emotions in Case of Outsourcing

As we have shown before outsourcing is an option to optimize the allocation of short resources (financial and human). Unfortunately the management of an area, which should be subject to outsourcing, nearly always fights against such a decision. The reason for such fight can be found in the emotions, which are violated by an outsourcing decision. Although the management will produce a lot of logic arguments, which show that outsourcing is not the best option, in reality the following violated emotions produce the logic arguments among others:

- The company wants to outsource the area because I did a bad job
- Up to now I was a powerful manager with plenty of subordinates. If I loose them my personal reputation will also be lost
- My boss will not need me any more and kick me out. I will loose my job. How can I feed my family in the future?

To avoid the evolution of such internal fights some measures can be defined such as:

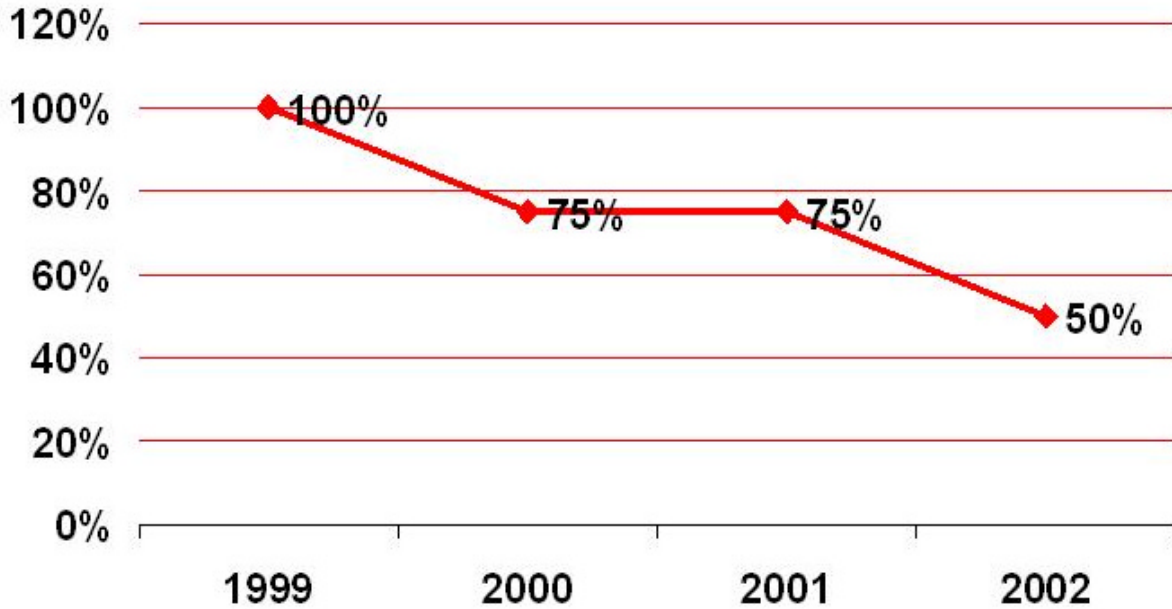
- Make it a company policy that the outsourcing partner has to take over the key staff of the area in the case of the conclusion of an outsourcing contract. This will show the manager that the company is confident in the qualification of the manager. On the other hand examples of outsourcing show that managers hired by the outsourcing partner develop a new high level of motivation.
- Use periods of extension of the business to push forward the outsourcing option. The lack of capacity, which sometimes occurs in such situations, can serve as a good argument to overcome emotions of the involved staff.
- Do not incorporate the involved management in the decision making process.
- Sell the concept of outsourcing as one very important way to keep or improve the competitiveness of the company

5. Some Records of Outsourcing

In the following we will describe a few examples of successful and not successful outsourcing.

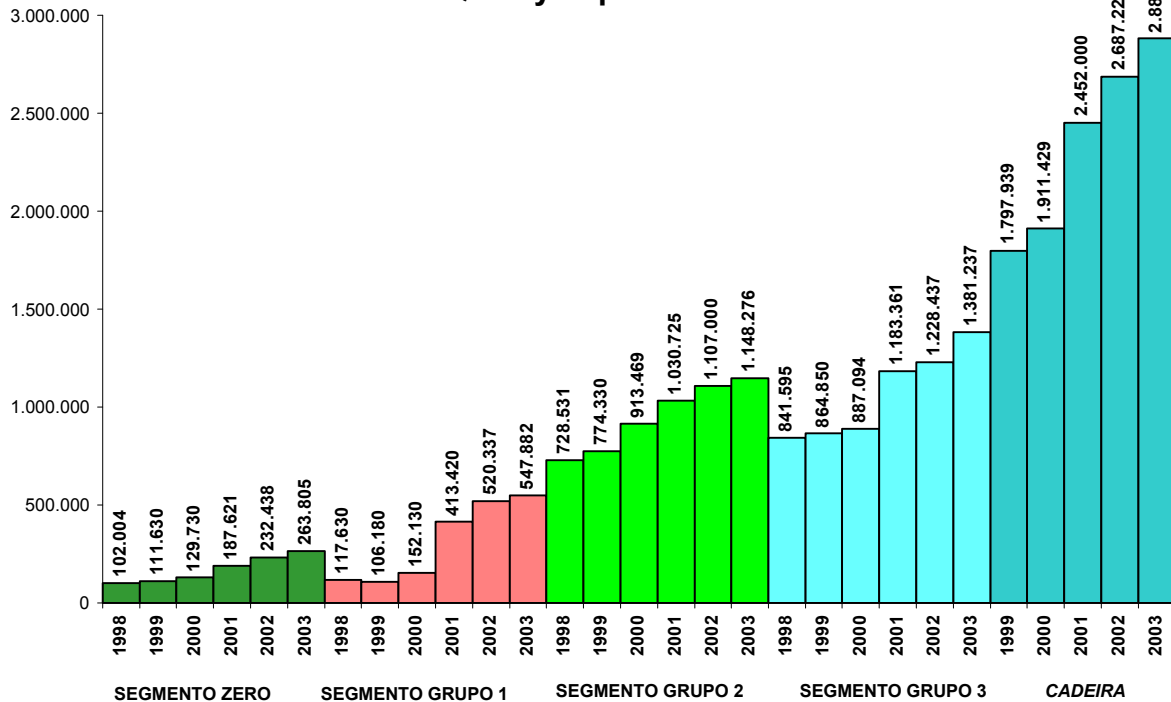
Example 1:

US Slab Caster – Offline Maintenance Cost – Reduction



Example 2:

South American Slab Caster - Offline Maintenance Quality Improvement



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For the reason that in steel industry real outsourcing is not widely spread it is difficult to find an example for not successful outsourcing. Some kind of outsourcing happens, when the company in order to reduce the cost of personnel for reason of agreements with unions etc. transfers these personnel to a newly founded outsourcing company. There are a lot of successful examples for such a move in the area of catering services, gardening services, shipping and packing. In this successful cases not only the personnel was transferred but also the responsibility. However, there are some examples with only a one-time effect. In this cases the personnel was transferred, but not the responsibility. The one-time effect consists of a one-time reduction of labor cost. For the reason that these cases were not cases of true outsourcing, no ongoing cost reduction could be realized. To make out these cases a potential ongoing success, the responsibility would have to be transferred as well.

To conclude the matter of unsuccessful outsourcing let us look at the history of IBM and Microsoft. When in the early 80s IBM designed the first personal computer, IBM decided to outsource the design of the operating system to a small company called Microsoft. Although the development of operating systems was a clear core competence of IBM, IBM decided to outsource the task. As a result of this strategically wrong outsourcing Microsoft could grow to its present position, while IBM lost the competence for developing operating systems for servers and PCs.

6. Conclusion

Outsourcing is not a modernism but an essential tool to optimize the use and allocation of resources and therefore a useful vehicle to increase productivity.