The Harmony model
A case study on new contractors approach

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ABSTRACT

This paper describes the added value of the more integrated project organisation. After explaining the differences between the traditional model and the integrated process, the characteristics of the specific industrial clients are elaborated on. The needs of these clients are related to both models by case studies. Finally: the communication of the advantages of the integrated process model for industrial clients contains some crucial aspects.

Keywords: Construction Management, Industrial Clients, Changing the Industry

1. INTRODUCTION

The Dutch construction industry is currently developing from a supply orientated market into a demand orientated market. Dutch contractors are more and more aware that of the fact that they have to develop their services en products based on the demand of their clients. The Parlementaire Enquêtecommissie Bouwnijverheid [1] has been the main reason this process accelerated. Another factor that has increased the focus on becoming a demand orientated market, is the fact that clients are

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focusing more and more on their core-business and contract out real estate related issues earlier. They focus on the performance of the product and the delivery time [2].

With this shift in the way the industry is organized taken into account, BAM Techniek regio Zuidoost uses forward integration to facilitate its strategy to increase the added value it provides to its clients.

In a multidisciplinary project environment, where a clean room is being built in the industry market, BAM Techniek regio Zuidoost has developed a process organisation model, called the harmony model. Within this process organisation model clients, advisers and BAM Techniek regio Zuidoost work together, using a a substantial different division of the respective roles, compared the traditional process organisation model, also referred to as Estafette model.

The research was focused on determining the additional added value associated with the use of the Harmony model instead of the estafette model as well as to design tools to communicate this additional added value to the client of BAM Techniek Regio Zuidoost.

2. RESEARCH QUESTIONS

The objective of the research was formulated as:

• How can the added value of the harmony model being appointed and better communicated to potential clients?

To resolve the subjective of the research the following research questions were formulated:

1. What is the difference between the estafette model and the harmony model?
2. What are the characteristics of the clients in the industry market and which project needs do they have
3. How do these needs of the client better of worse connect to the characteristic of the harmony model and the estafette model? (theoretical, practical)
4. How can these conclusions be communicated to potential clients?

3. RESEARCH METHODS

The get answers to these research questions the following research methods are being used:

1. Literature survey, interviews with employees of BAM Techniek regio Zuidoost, external interviews.
2. Case study at Philips Medical Systems BiometriX, project FAB#X. Interviews with the project members of the project FAB#X (this project was being realized through the working method of the harmony model).

3. Interviews at BAM Techniek regio Zuidoost and Philips Medical Systems BiometriX and study of the project documents.

4. Design of two communication tools.

4. RESULTS

4.1 Harmony model vs Estafettemodel

The differences between the harmony model and the estafette model are analyzed and divided in the project control aspects; (M)oney, (O)rganization, (Q)uality, (I)formation and (T)ime.

The harmony model is a process organisation model. In the estafette model the principal (client) determines, often with an advisor, what the specifications of the real-estate are and how is should be build. In the harmony model the principal concentrates on the functional aspect of the real estate and the mechanical contractor is responsible for the design and the construction. The shifting in responsibilities is visualized in figure 1.

![Figure 1 Shifting of responsibilities in the harmony model](image_url)

The contract is based on a program of requirements or basic design. The big difference, on functional and contractual aspects of the project organisation, between the estafette model and the harmony model is the fact that different project participants are responsible for design and construction in the estafette model. Next to this the principal has contracts with all of the participants. In the harmony model one party is responsible for the design and construction and the principal has one contract, bases
on a result obligation, with the mechanical contractor. These differences are pointed out in figure 2 and 3.

After the conclusion of the contract the project is divided in multidisciplinary subprojects where the project phases, basic engineering, detail engineering, work preparation en construction, can pass off parallel.
In the estafette model these phases pass off sequential. This is visualized in figure 4.

![Parallel project phases diagram](image)

Figure 4 Parallel project phases

4.2 Case study BiometriX

To determine the added value of the harmony model to a principle in the industry market, the organisation and project needs of Philips Medical Systems BiometriX at the project FAB#X analysed. The organisation is analyzed through the 7SMCKinsey method and the project needs divided in the project control aspects: (M)oney, (O)rganization, (Q)uality, (I)formation and (T)ime.

Philips Medical Systems BiometriX
BiometriX develops and produces Xray detector plates and has around 70 employees. From the TSMCKinsey analyses the following aspects are relevant.

- BiometriX has preferred supplier for the asset management of the real estate, including BAM Techniek regio Zuidoost for the mechanical works
• The market position is weak, one client, one concumpetitor.
• The shared values of the organisation can be characterized as strong.

Project FAB#X
The project FAB #X was put up to expand there production capacity with a second production line. Therefore the cleanroom had to be expanded, +/- 2000 m2. Starting points of the project;
• Commercial delivery to the client, May 2005 -> short delivery time.
• Running line could not be shut down -> Construction next to running line.
• Shortage of staring information; specifications of the machines of the production line unavailable and construction planning uncertain.

Project needs BiometriX
Through the interviews with the project employees of BiometriX the needs considering the project organisation are analyzed through the KJ Method. The critical success factors of the needs are:
• Soon surety considering the investment costs;
• Modification in the program of requirements fast changed and financial consequences fast clean;
• Construction work in harmony with the running line;
• Short development and constructing time;
• Construction planning variable.

The characteristics of the estafette model and the harmony model (theoretically) and the project needs of Philips Medical Systems BiometriX have been connected and rated. This provides a view on with aspects the harmony model connects better and worse to the client needs. On the next aspects the harmony model provides a clear added value:
• Short delivery time;
• Process flexibility (changes in the program of requirements fast realized);
• One party responsible for design and construction;
• -Open communication, informal sphere.

The connection of the harmony model practically with the project needs of BiometriX provides a view on with aspects BAM Techniek has to improve their service. In the research these aspects are provided with recommendations towards BAM Techniek regio Zuidoost.
• Improve their budget technique
• Develop a standard contract for the harmony model. This way the division of responsibilities, tasks and authorities between the client, adviser and contracted is clear.
• Improve the information demands during the design phases.
• Improve the detail design methods. Make a format and include this in the contract with the client. And also make clear agreements with the subcontractors concerning format and delivery time of the detail design.

4.3 Tools

To communicate the added value of the harmony model to (potential) client two tools have been designed:

1. An description of the model, characteristics, pro's and con's, and references, including a thorough description of the process of the project FAB#X at Philips Medical Systems BiometriX [4].
2. An presentation of the process organisation model that can be use to present the project approach of the harmony model [4]

5. CONCLUSIONS

If BAM Techniek regio Zuidoost should choice to aim her business activities on the concept of the harmony model, this has consequences towards the business model of the company. Traditionally the company only delivers capacity and this is still the core business. But if they should choose to sell the harmony model as a concept, the business model of the traditional company doesn’t fit anymore and has to change on the next three aspects [3]:

• Marketing:
  To sell the products that has been developed (the harmony model), the company should concentrate more on marketing. With clients, with markets can we satisfy with this product and how can introduce it in the market?
• Research and development:
  To develop standard design solutions the company should invest in research to develop new products and techniques.
• Organisation:
  Internally the concept should be developed further, example given the Standard contract of the harmony model.
• Externally BAM Techniek regio Zuidoost should look for subcontractors and suppliers with whom the process and the product can be further developed (strategic partnerships).
If BAM Techniek makes the choice to concentrate their core business on developing concepts and product based on the demands of their (potential) clients and products their profit-focus will change. Traditionally the profit depends on the occupation of their capacity (a homogeneous service). The more turnover the more profit.

But if they concentrate on increasing the added value for their client by developing their own products and concepts they can focus on those markets where there is need for these products. The more value the more profit.

This shift in focus can be summarized as:
Less capacity driven, more product oriented.

Finally: new communication tools are a great added value to present moderns process models to clients and to make them aware of the benefits of these models.

6. REFERENCES

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