

# **HIGH ROAD TO WORK ORGANISATION**

## **CASE STUDY**

**NKT Cables A/S**



**Gitte Holm**

**Danish Technological Institute**

**October 2001**

### **Abstract**

The enterprise has 300 employees, and over a period of eight years, the enterprise has introduced production groups. The employees have participated in a three-month course as a part of an upgrading of their qualifications in order to enable them to perform new job functions in connection with introduction of advanced technology. The enterprise has developed a model for introduction of production groups, which gives employees in production groups responsibility and competence to plan, perform, and control the work independently in the work area of the group. Introduction of production groups has had a positive effect on profitability and flexibility, and the employees experience that they have a better working environment now.

## **HI-RES Case Study: NKT Cables**

### **Sector**

Cables

### **Key Words**

management control; learning intangibles; measuring human capital; market capital

## **Table of Contents**

Abstract

### **HI-RES Case Study: NKT Cables**

Sector

Key Words

#### **1. Background Information**

#### **2. Drivers for Change**

**2**

#### **3. Characteristics and Process of Change**

**3**

#### **4. Obstacles to Change**

**4**

#### **5. Risk Analysis**

**4**

#### **6. Benefits of Change**

**5**

#### **Conclusions**

**5**

## 1. Background Information

NKT Cables A/S produces cables and has done so for the past 100 years. NKT Cables A/S is a company in a Danish-owned group, NKT-Holding A/S, with production in seven European countries, China, and the USA. The group has 6,200 employees world-wide. In the past five years, significant changes have taken place in NKT-Holding A/S. The group has purchased a number of foreign enterprises. Production has been distributed between the enterprises in the various countries dependent on product areas, production facilities, and profitability.

Today, NKT Cables A/S is European supplier of high-tech energy and data cables with 2,928 employees with production in Denmark, Germany, the Czech Republic, Poland, Austria, and China. In Denmark, during recent years, production has been gathered in a factory with 300 employees in the city of Asnæs outside Copenhagen. Since 1989, the factory has been through a number of technological and organisational changes to adapt to the new market conditions and competition between the cable producers of Europe.

The adaptation and the changes between the NKT companies in Denmark and abroad have resulted in closing of production areas in Copenhagen and Kalundborg and increased production of NKT Cables A/S in Asnæs. Through the years, the employees of this factory have worked with introducing of new technology and production groups. Therefore, all production employees work in production groups today, where responsibilities - concerning planning, performance, and control of the work in connection with the group's work area - have been delegated from the supervisors to the group members.

## 2. Drivers for Change

The decisive driving force behind the great changes, which NKT Cables A/S has been through, is the result of the new competition in Europe which meant that the cable-producing companies could no longer share the markets between them. Previously, each country had its own cable production with its own limited market. In order to meet the new competition demands, NKT Cables A/S 'rearmed' in 1989 by building a new factory and modernise the old part of production. Among other things, a new production control system was introduced.

Through the 1980s, it became clear that introduction of advanced technology required a special upgrading of employee qualifications, if the full return of the investments was to be gained. This period saw several examples where enterprises had introduced advanced technology and had not gained the expected increase in productivity. The managements of these enterprises realised that the new technology required that employees were able to step in quickly and make independent decisions. Therefore, the enterprises gradually became increasingly aware that the employees needed to have more responsibility and competence so that they could make decisions faster and more effectively and step in themselves in relation to production. Consequently, management decided that they were going to train the employees and introduce production groups with a high degree of autonomy.

The restructuring after purchases of foreign enterprises in the late 1990s has not correspondingly accelerated a technological and organisational development process. Instead, the development process which started in the 1980s has been consolidated and further developed so that, today, the continuing of production groups in NKT Cables A/S enjoys great support among the employees.

### **3. Characteristics and Process of Change**

From the moment it was clear for management and employees that they were facing new challenges in connection with the introduction of advanced technology in the late 1980s, a project group was set up which was to work with the upgrading of employee qualifications. The project was called OPUS (Opl ring til Nye Produktions- og udviklingsystemer) (training to new production and development systems) and focused on the future need for qualifications.

This project became decisive to the further work with the upgrading of the employees' qualifications. The project formed the basis of an 11-week adult vocational training course for 100 operators, 12 supervisors, and 15 blacksmiths/electricians. The course developed the employees' job-related skills. The subjects included basic knowledge of machines, general quality and product knowledge, fault finding, knowledge of materials, general data. Furthermore, the employees acquired knowledge of co-operation and communication. During the training period they became prepared to work in production groups. At the same time as this extensive upgrading of qualifications took place, work was done with

- preparing the supervisors for a new supervisor role
- determining a frame for responsibility and competence of the production groups

#### *New supervisor role*

The supervisors participated in a number of future workshops and seminars to clarify their new role. During these workshops and seminars it became clear that fewer supervisors would be needed in the future, and there would for example be no need for supervisors at evening and night shifts. The result of the process was that about half of the supervisors performed other tasks in the production after a couple of years. From having been 12 supervisors and about 150 operators, the numbers are today 6 supervisors and 300 operators.

Today, the supervisors have general planning and project tasks, for example reduction of the waste percentage in connection with production. Moreover, the supervisors are to support and guide the groups and see to it that any problems or crises in the groups are dealt with. However, this aspect of the new role is difficult and requires continuous development of the supervisors' behaviour in relation to the groups.

#### *Framework agreement for all groups*

At NKT Cables A/S the whole development process concerning the production groups has been governed by agreements that have been part of a so-called framework agreement. The framework agreement was agreed upon by management, employees, and shop stewards. The framework agreement describes the groups' autonomy regarding responsibility and competence in connection with planning, performing and control of the work in the groups. The agreement forms a framework for how and what the group can decide in connection with manning of machines/workplaces, distribution of work in the group, information in and out of the group, co-ordination of work with other groups, training of new employees, and planning and control of vacation in the group. Participation in connection with hiring of new employees to the group is also detailed in the agreement.

#### *Basic laws for the production group*

On the basis of the framework agreement, each group has prepared their own basic law where they have described rules and guidelines for how they are going to implement the overall framework agreement so that it fits the individual group. The basic law is prepared and written at a seminar where management and employees together discuss and decide upon the framework which the groups are to implement in the production the day after they have written down the basic law.

All production groups have participated in two-day seminars in order to write down their basic law. Subsequently, every two years, they have participated in two or three-day seminars to maintain and further develop the function of the production groups, solve co-operation problems, or integrate new employees in the groups. The result was written down in an action plan which they have subsequently worked with in the groups. Management has continuously pinned the groups down to carry out the plans.

#### *Co-operation between managers and employees*

It has been characteristic of the whole process concerning introduction of production groups that the process has taken place as a co-operation project between managers and shop stewards. Furthermore, the employees have been active participants in the formulation of and decisions regarding the function of the production groups. Thereby, the individual employee has had decisive influence on how the production groups were to perform the work in their own work area.

## **4. Obstacles to Change**

NKT Cables A/S did not have any management members or employees with experiences with production groups before the first group was started. The greatest obstacle has therefore been scepticism and opposition to production groups, both among managers and employees to this organisation form. Therefore, almost 8 years passed by from the first production group was set up till everybody were part of a production group. Previously, there has been no visible support from the top management to carry out the project. Not until 1999 did NKT Cables A/S' top management state that the future organisation form of production is group organisation.

Another significant obstacle to change has been the shifts. It is a known fact that employees are forced to resign because of difficulties in connection with working in shifts. Therefore, it has been necessary to replace employees because they have been unable to cope with this work form. An important aspect of this problem is the change from three to five shifts, which has been difficult to tackle since it has resulted in rotation of the members of the groups. When employees are moved about constantly, and new employees are hired, the groups have to work with their basic laws regularly and together find a common co-operation basis. It is not least difficult to co-ordinate work between production groups working in shifts. Therefore, work in shifts constitutes a great obstacle when production groups are to be introduced.

In spite of these obstacles the company has succeeded in keeping the production groups even if it continues to require a lot of work maintaining and developing them.

## **5. Risk Analysis**

The very fact that production groups require constant development work constitutes the greatest risk of them wilting or of management and employees giving up on them. If production groups are to be a success, both management and employees have to

understand that the groups are to make new goals and action plans regularly in order to further the independence of the groups. Autonomy does not come out of nothing, and management needs constantly to be aware of the groups' status and needs for maintaining and further development.

## **6. Benefits of Change**

The employees take an independent responsibility for the work areas of the groups. They are far more efficient than previously which manifests itself in the fact that fewer employees now produce more. Moreover, fewer managers and employees have administrative and support functions. The employees are far more flexible than before and are today able to handle more tasks than previously. The flexibility has been achieved through a systematic training approach on the part of the production groups regarding the group members. Quality has been improved: the waste rate has been reduced, and there are fewer complaints now. Furthermore, there is now less absence due to sickness and less staff turnover.

The employees now have a greater overview and more knowledge regarding production which make them capable of offering more independent suggestions to development of the groups than previously. Several of the production groups press for even more responsibility and competence and thereby even more independence. Today, the opposition which was present previously has been replaced by an expectation of more development.

Administrative and support functions (artisans, construction, warehouse, planner, etc.) work directly together with the production groups. These groups participate in the production groups' meetings and co-operate directly regarding, for instance development of products. The breaking down of the barriers between the various functions contributes to the development of products and a better service to customers than previously. Furthermore, it has a beneficial effect on how the group members experience their job. They have become more satisfied with their work than previously.

## **Conclusions**

NKT Cables A/S has developed a model for introduction of production groups which has been developed to include the entire production. The introduction of technology, upgrading of employee qualifications, and initiation of production groups, which took place in the late 1980s, have turned out to be fruitful. Significant results have been achieved in the form of greater profitability, a higher degree of efficiency, increased flexibility, and better quality during the period. The employees are now more satisfied than they were previously, and, through development of the production groups, they experience that they gain more insight and a more interesting job.

---

**Publication Details**

**Published by:** Danish Technological Institute

**Publication date:** 2001

**Journal:**

**URL:**

**Revised:**

**Notes:**

© DTI 2001. All rights reserved.