

HIGH ROAD TO WORK ORGANISATION

CASE STUDY

Autoliv Sweden AB, Vårgårda



Stefan Agurén

Centrum för Ständiga Förbättringar

2002

Abstract

In the 1990s, Autoliv Sweden AB introduced the just-in-time production technique and changed the work organisation in its factory into target-monitored teams. Project work on the introduction of new products in production was also reformed. The result was faster reactions to market requirements, a better capacity to meet delivery deadlines and lower costs. At the same time the personnel have become more involved in the work and have improved and extended their skills. Over a ten-year period the company has improved its turnover by 800 per cent and increased the number of employees from 300 to 1100. However, the main explanation for these trends is to be found in a series of product innovations in the field of automotive safety, where the company is in a leading position in the world.

HI-RES Case Study: Autoliv Sweden AB

Sector

Engineering industry

Key Words

Just-in-time, Target-monitored teams; Workshop method; Product innovations

Table of Contents

Abstract	
'Good Practice' Case Study: Autoliv Sweden AB	1
Sector	2
Key Themes	2
1. Background Information	3
2. Drivers for Change	3
3. Characteristics and Process of Change	3
4. Obstacles to Change	4
5. Risk Analysis	5
6. Benefits of Change	5
Conclusions	5

1. Background Information

Autoliv Sweden AB's main plant is in Vårgårda where automotive safety products are assembled in large volumes. The number of employees is 1100 with sales volume of SEK 2600 million. The company is part of Autoliv Inc, which has 80 companies around the world. The company has four main customers in the Swedish motor vehicle industry. Its knowledge base is unique expertise on automotive safety systems (seat belts, airbags, whiplash support etc) and how these interact with each other, with the vehicle and with the human body. Its market is Scandinavia and the Benelux countries. Autoliv Inc has 35–40% of the world market. The plant in Vårgårda has a process-oriented organisation with some 40 target-monitored teams working in production. The factory works in two shifts. Pay at present is in the form of fixed time pay - the previous piece rates were frozen into fixed time pay in the assembly plant. Development work is organised in project form, which was recently made more efficient through new type of work meeting (workshops).

2. Drivers for Change

Target-monitored teams

In order to be able to react more rapidly to changes in customer requirements, a process flow organised on just-in-time principles has been introduced. The old functional organisation did not succeed in meeting short delivery times and tied up a great deal of material in the production process. The transition from individual working duties to target-monitored teams was motivated by the need of having a more flexible flow organisation and also by the requirement for more comprehensive working duties for the personnel. The factory manager initiated the use of target-monitored teams but in the early stage of the process, external consultants were of great importance for the work with change. The metal workers union participated actively in the process of change from the very outset.

Workshops

Project methods of the workshop model were motivated by the necessity to rapidly organise resources for the production for new products, which are in demand.

Both target-monitored teams and the workshop model were expected to contribute to greater competitiveness through greater reaction speed. Both were also expected to have the effect that more of the organisation's knowledge potential was used in production and development work. The development of target-monitored teams has involved a continual process of change over a long period of time and this must be maintained if it is to function properly. The intensive development period was 1998-2002. The establishment of the workshop model took place in stages at the end of the 1990s. This is mainly an issue of the intensification of the working process at the start of development projects.

3. Characteristics and Process of Change

Target-monitored teams – the content of change

From the technical point of view, production is now organised in lines and cells. A line is a number of interconnected workstations. At each station a distinct part of the team's duties are performed. A team can have the responsibility for several lines. On the other hand, a line is not divided up between different teams. A transition to so-called cells, which are more flexible, is taking place. The five roles in the teams are:

- The person responsible for the team coordinates the work of team members and keeps in contact with the project group leader.

- The planning coordinator ensures that the team always manufactures the right product in the right numbers and that there are always sufficient personnel to meet production needs.
- The quality coordinator is responsible for ensuring that no defective products leave the team.
- The maintenance coordinator leads the operator-based maintenance activities in the team, updates the report board and is a customer of maintenance support.
- The person responsible for 5S ensures that work on improvements takes place in the team.

All team members perform production duties but some have a more highly focused role, which makes them "leaders" within defined areas of responsibility. Each team contacts its product group leader whenever necessary and can also use central support functions in the form of production technicians, quality technicians, production planners and leaders of change.

Target-monitored teams – Process of change

The change started with a three-day leadership training programme for the managers involved and then a pilot case was selected in each hall (airbags, seat belts, whiplash, and so on). This was done in agreement between the managers and the trade union. The personnel in the selected groups learned the basics of teamwork and management by objectives, for example communication, rules for groups, understanding goals and following up results. Then the process was continued group-by-group and today most groups follow the model with the five roles that have been developed for the teams. The first step towards a group organisation was taken in 1985 and the transition to target-monitored teams took place at the end of the 1990s. There is no end to the process since new personnel arrive and need the same introduction to the new ways of working as the former employees. The process of change is less technical in nature with more of a change of values and working habits for the new people that join the teams.

Workshops

This working form supplements earlier project activities. No process of change can be distinguished when the idea was born; it was quite simply introduced immediately.

4. Obstacles to Change

Target-monitored teams

Obstacles to the process of change have mainly been persons who felt that their old working roles were threatened particularly with somewhat older persons. During a period of full production, the process of change came to a standstill but it has then started up again. Teams that have been created at a later stage have not been given the same training as the teams that were involved at the beginning of the process. This has had the effect that the persons in teams formed at a late stage do not have the same knowledge of teamwork and this constitutes a certain impediment where the achievement of the intended standards by these teams is concerned.

Workshops

Run in the company's own organisation, the workshops have no problems. But the desired involvement of customers and sub-contractors can encounter obstacles of a secrecy nature.

In a growing company there is a tendency for each individual's work to become increasingly specialised. In order to be able to run many projects in parallel, several individuals must improve and extend their skills. However, it is difficult to achieve the same degree of flexibility in the project teams in the development organisation that has been achieved in the target-monitored teams in production. The various educational levels and the more individualistic culture at the offices have the effect that it is more

difficult to develop the group collective there. The physical flow in the factory demands the attention of the teams. In development work the flow is a collective thinking process that competes with regular individual working duties.

5. Risk Analysis

Target-monitored teams

Training in teamwork has not kept pace with the establishment of the teams. There can be a risk that shortcomings in training and knowledge may have a negative affect on team morale. Another problem mentioned is the dissatisfaction of the members of the teams with the member of staff who is responsible for the team or with their immediate superior. A just-in-time production process sometimes means fairly tight time margins for the assembly personnel. Changes in customer's requirements require rapid reaction where production is concerned. However, there have not been any negative effects of this situation on the efficiency of production.

At the time of the transition to teamwork the individual piecework rates were frozen into fixed time pay. This led to differences in pay, which are felt to be unfair today. The parties seem to agree that a new pay system should be designed which takes skills into consideration and which the individual can influence. The transition to built-in work on improvements had the effect that the traditional suggestion schemes were discontinued. The trade union claims that more ideas would be forthcoming from their members if a reward of one form or another was introduced for suggestions. No friction between teams and experts has been noted. On the contrary the teams receive assistance whenever necessary from, for example, quality technicians and planning technicians.

6. Benefits of Change

Target-monitored teams

- The introduction of target-monitored teams had its greatest importance in the higher levels of flexibility this organisation form implies. Together with the just-in-time flow, the target-monitored groups have achieved a very high level success where meeting delivery deadlines is concerned (99–100%). This is of a decisive importance for having satisfied customers. Even costs have reduced, since less capital is tied up in the process today.
- For the personnel, target-monitored groups have led to higher levels of stimulation where working duties are concerned, improved and extended skills, better security of employment and better employability.
- Relations between company management and the trade union have been positive.

Workshops

- Workshops have lead to a higher level of efficiency in the project work and greater speed in the preparations for production of new products.

Conclusions

Production process governed by customer orders

Just-in-time deliveries, a reduction in the number of variations in production, the elimination of waste of resources, and flexible teams in production with responsibilities and powers for manning, the content of operations and improvements. These factors have contributed to improvements where meeting delivery deadlines are concerned and lower costs. Through changes to the work organisation the skills of the personnel skills have been utilised better and have also been further developed. All in all, this has meant

that the company has consolidated its position on the market as an effective supplier. On the other hand, these changes do not explain the company's rapid growth during the 1990s. Here a series of product innovations were of decisive importance.

Innovation-driven growth

For each new safety product that the vehicle manufacturers include in their products, Autoliv's "value per car" increases. After the seat belt came the airbag then the anti-whiplash seat and the side impact airbag (inflatable curtain). It is obvious that Autoliv's skills in automotive safety systems are a decisive factor for the company's successes. It has not been possible to make an in-depth analysis of the reasons for the innovation capacity of the product development personnel. In Autoliv there is an impression that this is due to a limited number of persons and that it is their immediate superior's positive attitude towards the innovator (not necessarily top management) that makes all the difference where the innovation climate is concerned.

To sum up, it can be said that organisation of the work that is based on customers' orders and requires the development of employee' skills has strengthened the company's competitive position but it does not explain its expansion. Instead it is the innovation capacity of the product developers that lies behind the increase in turnover and the number of employees. This capacity is tied to individuals and not to certain organisational forms.

Publication Details

Published by: Centrum för Ständiga Förbättringar
Publication date: 2002
Journal: -
URL:
Revised: -
Notes: -

© April 2002 ITPS. All rights reserved.