

# Information Technology in the Dutch pork industry

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## Abstract

While the Dutch pork industry is trying to survive the worst depression in its history, the global market is changing dramatically. On the other side of the Atlantic Ocean, the pork industry is not only expanding extremely rapidly but is also implementing the latest Information Technology in the production process.

This will probably result in the USA becoming a new major player, turning the worldmarket upside down. A player also with a strong competitive advantage through the effective use of Information Technology. If the Dutch pork industry wants to continue to play an important role on the international market, it is time to invest in implementing this technology.

Keywords : pork industry, IKB, Information Technology, Electronic Identification

## Introduction

It will be clear to those who follow the developments that the international pork industry is at the eve of a dramatic revolution. An enormous scale enlargement and intensification can be perceived in North-America. The USA's first objective was to supply the internal market: Middle America and Asia were mentioned as the first export targets. If this expansion strategy succeeds, it will have a major effect on the "traditional" European home market.

Caused by worldwide changes of im- and exports, the European pork sector is unlikely to get a chance to recover from the worst depression in its history.

The biggest threat of this new 'world power' here is not so much the scale enlargement and intensification of the pro-

duction process, but mostly the industrialisation.

The future scenario seems to contain elements of the decade in which the Japanese motor industry wiped out the entire British motor industry by offering high quality at an economical price. The Japanese competitive advantage in those days was a result of efficiency improvement, quality control and continuous fine-tuning of the production process.

Currently the American pork industry is using the state of the art in Information Technology (IT) to optimize all stages of the production process, which eventually may have a similar effect on the "traditional" European pork industry.

The Netherlands is one of the leading European countries in pork production

Figure 1 - Transponder

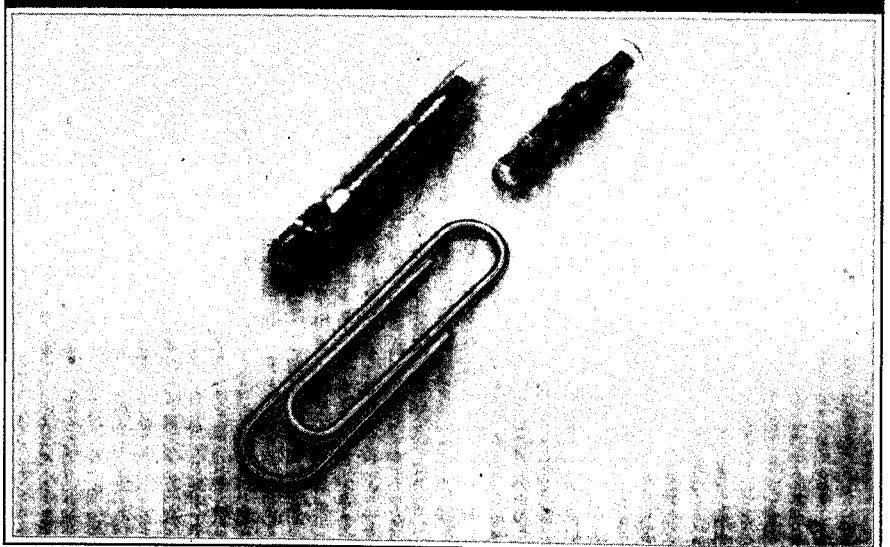
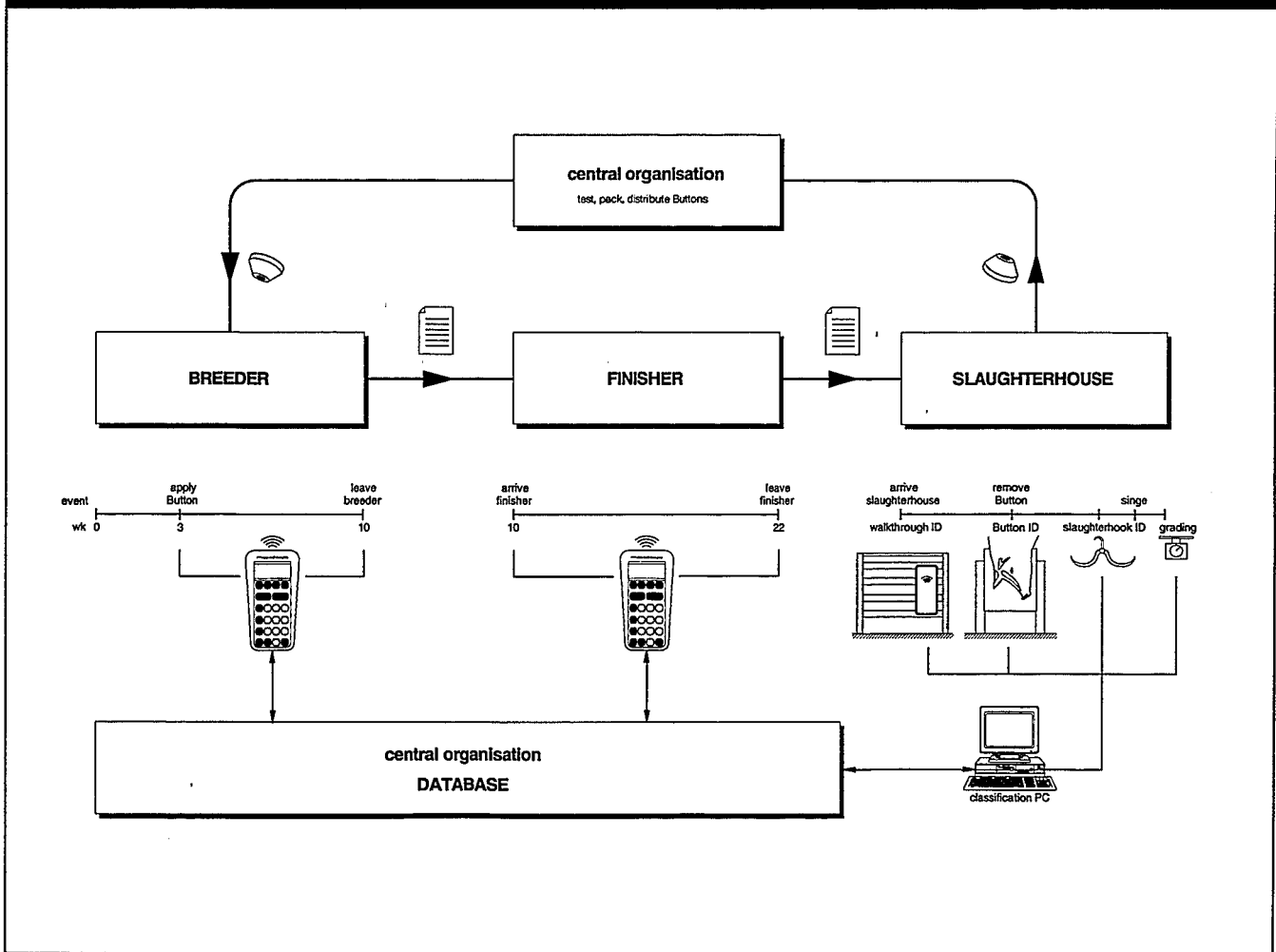


Figure 2 - Implementation of electronic identification in pig production program



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and is mainly dependent on its export. It is high time that this IT would become an integral part of the Dutch strategy to guide it safely through the coming turbulent years.

### Electronic Lifenumber

Some four years ago, the Netherlands seemed to be on the right track: PVV (the product board for livestock and meat) initiated an Identification and Registration regulation (I&R) which required all Dutch pigs to be identified by means of an injected transponder (Figure 1).

The transponder contains a chip with a unique number which can automatically be read from a distance. This "electronic passport" had to be injected behind one ear of the pig at an age of ca. 3 weeks and remain there until classification in the slaughterprocess.

The PVV's objective of this I&R regulation was to control disease outbreaks and

form a platform for Quality Assurance programmes. It also wanted to provide the industry with an ideal tool for product improvement through automated data exchange between the various stages in the production process (breeding, multiplying, fattening, slaughter).

### Practical experiences with the implant

Because of its experience with electronic identification for the livestock industry, Nedap was also asked to participate in the development of this I&R system.

In a few large-scale field trials, the system was tested thoroughly and some unexpected problems were encountered:

- *guaranteed recovery*  
the slaughterhouse, of course, requires a guaranteed and fast recovery of the transponder. In practice, however, its location varied so much that this could not be guaranteed;

- *export live animals*

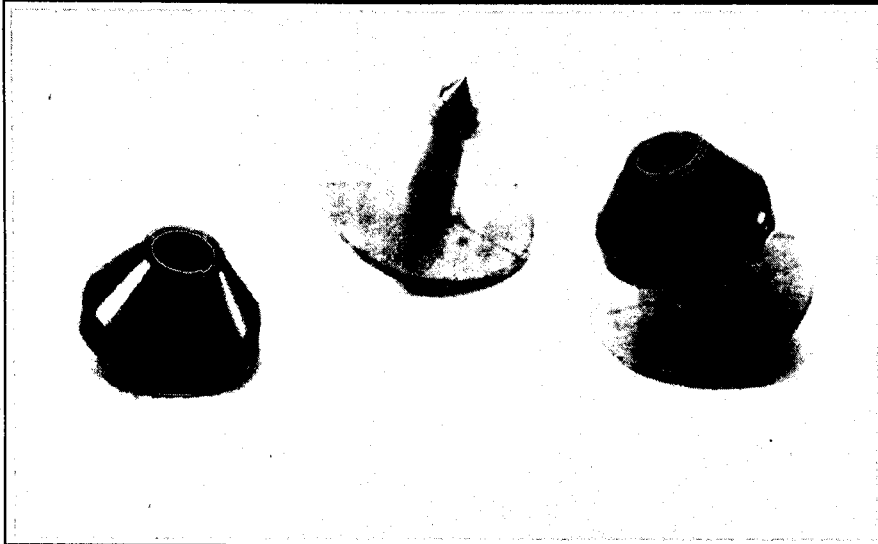
ca. 1/3 of all Dutch pigs are exported alive. To guarantee that a transponder is removed in e.g. an Italian slaughterhouse is very difficult to organize from the Netherlands.

The above-mentioned practical problems, together with standardisation and funding problems, forced PVV to put this promising initiative on ice.

### Technological stagnation

PVV's withdrawal as initiator and co-ordinator of the implementation of this IT has left the Dutch industry more or less in a technological vacuum. The luxury of "big brother taking care" is no longer there, the Dutch industry now has to find out for itself whether, how and which technology should be implemented.

Figure 3 - Electronic Ear Button



Our competitors abroad have never had a big brother and had to work out themselves all the answers to the contribution of this IT for the various links in the production chain (see Figure 2).

The technological developments have not stopped at the "icing" of the implant: on the contrary. The Dutch industry, however, still seems to focus too much on PVV to co-ordinate the implementation of IT.

This may result in the Netherlands being behind in technology, which can deteriorate its competitive position, especially now that a big storm, as described in the introduction, is coming up.

### State of the art in Information Technology

The technological developments have increased since PVV stopped the electronic I&R project.

By now a slaughter-process resistant Electronic Ear Button is available with which the problems of recovery and export are solved (Figure 3).

A second generation of dataloggers with built-in antennas is available for efficient and error-free data exchange (Figure 4). Automated carcass identification, based on the Button, ensures that all individual classification results are available for feedback to the fattener and breeder (Figure 5).

Slaughterhouse identification systems can be used for process control, as well as for liability and due diligence in the production process. Figure 6 shows an overview of a possible configuration when implementing this IT. In this system all links in the production chain can make optimal use of the information collected.

This information is continuously available for sound management decisions when fine-tuning the production process on efficiency, quality control and product improvement.

When setting up a system like this, the Dutch pork industry can create an infrastructure with which it can stand up to the challenges of a changing world market.

### Infrastructure

Setting up an infrastructure as presented in Figure 6 requires enormous dedication, decision force and investments. These are perhaps easier to achieve in the USA because of its private enterprise and large volumes, which, of course, result in fast decision making and huge resources for investment.

Compared with that, the Dutch farmer perhaps sees himself too much as a free entrepreneur who prefers the situation of not being tied to a programme or scheme.

This thought may have been able to hold under previous world conditions, now it

seems wise to reconsider the strategy if the Dutch industry does not want to follow the traditionally flourishing English motor industry.

But who should stimulate and co-ordinate all this? Maybe the major changes currently taking place in the international (mobile) telecom sector could serve as an example.

### Strategic Alliance

The international telecom sector is currently facing huge investments in setting up new infrastructures, especially for mobile systems. Each telecom company, of course, wants a share of that lucrative market, but only few are able to come up with the necessary investments.

The companies therefore are forced to enter into strategic alliances (even with future competitors!), in order to be able to come up with the necessary resources. The resources can sometimes also be found through subsidies or private money (shares).

It is important to realize that the role of the government is only a supportive one (because of employment, etc.), but that it is *not* co-ordinating.

Figure 4 - Second generation datalogger



After completion of the technology and infrastructure, each company will go its own way again. If the companies do not co-operate, they will not survive.

If we translate this situation into the Dutch pork industry, the IKB-organisations should jointly develop and implement the technology. The resources then have to be raised privately, possibly through shares.

The government (PVV) will not play a coordinating role but will only stimulate by means of subsidies.

The IKB-organisations remain competitors but can make effective use of the jointly set up infrastructure, in order to give the Dutch industry a healthy competitive position on the world market.

Hopefully the Dutch pork industry will realize the strategic importance of this IT in time and will also be able to find ways of implementing it.

Figure 5 - Automated carcass identification



Figure 6 - Integrated pig production and electronic identification.

### How can electronic identification contribute to integrated pig production

