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CASE STUDY: ICT SUPPORTING HORTICULTURAL BUSINESS AT SADPOL

Abstract

Sadpol is one of the largest Polish and European producers and wholesalers of fresh berry fruit (mainly strawberries). To facilitate the co-ordination of time-constrained tasks, like picking, packaging and delivery of fruit to ensure their adequate quality and freshness, as well as to improve workforce management, Sadpol introduced a centralised computer system to monitor and control different phases of production. The system includes wireless handheld devices to manage and record the output of fieldwork. Its implementation enabled the company to increase the scale and reduce the costs of production, to properly monitor the work and to duly balance the accounts of hundreds of workers.

Case Characteristics	
Full name of the company	GOSPODARSTWO OGRODNICZE Sadpol [Horticultural Farm Sadpol]
Location of the company	Poland Headquarters: Wierzbica 05-140 Serock Office: 81, Złota St., 00-810 Warsaw Plantations: Wierzbica, Winnica, Kondrajec Panski
Sector	Food and beverages industry, NACE: 15
Year of foundation	1995
Company size (no. of employees)	ca.100 on permanent basis (in summer – up to 3,000)
Turnover in last financial year	ca. EUR 2.5 million
Primary customers	Other businesses, mainly wholesalers abroad and food industry and retailers in Poland
Most significant markets	EU countries, the USA, the domestic market and Scandinavia
E-Business Focus	
Workforce management (including financial aspects and performance)	***
Production control and monitoring	**
Quality assurance	**
URL of the company	www.Sadpol.pl
* = in implementation stage; ** = used in day-to-day business; *** = critical business function	

Background

Sadpol is one of the largest Polish and European producers and wholesalers of fresh fruit with an overall yearly production exceeding 4,200 tons. It exports mainly to European Union countries and the USA, Poland being only a minor market.

The company was founded in 1995, when Janusz Glinicki –its henceforth owner and president– bought a bankrupting horticultural co-operative with a large area of apple orchards. At that time, demand for apples slowly began to shrink, while the aging orchards needed more and more maintenance to keep the same level of production. The new owner immediately decided to change the profile of the production and move to strawberries. The orchards were gradually liquidated and strawberries became the farm's main product. In the meantime, additional plantations were either bought or leased to increase the production.

Currently, Sadpol operates on 715 hectares, and owns fields in three villages: Wierzbica (the original location and the headquarters), Winnica and Kondrajec Panski. More than 40 hectares have been covered with foil tunnels (patented technology), thus lengthening the vegetative season by at least one month. The company has its own sort-houses and cold stores, with capacity of 10 thousand tons of refrigerated fruit.

Products and market positioning

Strawberries occupy the main part of Sadpol's production (60% of the total), followed by raspberries (30% of total production), wild strawberries and cocktail tomatoes. It is the largest producer of strawberries not only in Poland but also in the EU and its main competitors include wholesalers who buy fruit from small farms.

Sadpol used to sell to the Polish market, but gradually its export capabilities have increased and recently more than 50% of the production is being shipped abroad: mainly to EU countries (Germany, Netherlands, France, UK, Cyprus), the USA, and Scandinavia. A growing, but still small, number of clients come from the East European countries. The main customers include food processing companies (like Danone, Nestle, Scholler,) and retail chains (e.g. Carrefour, Gros Markt, Tesco).

Activities

For Sadpol, a need to computerise its control systems appeared in 2000, when it became visible that it was impossible to efficiently control and co-ordinate the work of hundreds and then thousands of workers picking fruit during summer months. Furthermore, workers would wait for weeks for their payment, never being sure when they would get it and whether it was correctly calculated. To cope with the increasing number of such problems, the company decided to invest in a computer-based management and control system.

Implementation

An internally executed study showed that an ideal solution would be a central server receiving and processing all data related to the work of field workers and fruit collected. These data concerned the quantity and type (quality) of fruit picked up by an individual, the time and place of their work, and the time when each cage was placed on transporters and/or into the refrigerator.

To collect and transmit these data to the server, a set of remote units (handsets) with bar-code scanners was necessary. 20 hand-held devices (equipped with cards enabling radio transmission and being weather-, dust-, impact-proof to enable open-air operation) were purchased from an American manufacturer (Symbol Technologies Inc), along with a system of 10 access points placed on masts high enough to offer coverage on all fields. .

The server application necessary to control the system was commissioned to a small local IT company and developed in a close collaboration with Mr. Grzegorz Garczarek – Sadpol's main IT person (both then and today). The software soon appeared to be inadequate and it was necessary to implement a number of amendments and patches. The most important features of the new application were the following:

First of all, it had to be a user-friendly and easy to use, as most of the would-be users of the mobile handsets were middle-aged, mostly computer-illiterate field managers, supervising the work of up to 100 workers, who appeared to be reluctant to use the new technology.

Additionally, the application had to be integrated with the existing company's software (used for accountancy and order processing). The adaptation was all done by Mr. Garczarek, who, since then, has been maintaining and developing the system.

Last but not least, specific training programmes had to be offered to the forepersons.

Technology description

The system is based on a quick, mature and reliable input method, namely bar code scanning, which also eliminates the need for typing in data manually. Each worker is identified by a unique code. The same applies to any kind of information on fruit – a foreperson reads appropriate parameters with a scanner from a special card. The data is then transmitted to the central server for processing. All necessary information (including a given worker's record) can be made available instantly.

In its current shape, the system allows to:

- monitor and record the work of all field workers (time, place, quantity and type of fruit picked up, etc.);
- report on work of a given worker in a given period, and – based on these data – to easily calculate the payment due to him/her;
- monitor the quality of fruit picked up and being stored for transport (including size, quality, type, time of picking);
- precisely control the quantity of fruit picked up.

The latter function has proved to be very important, since it allows to quickly respond to customers' needs with no overhead costs of an excessive or inadequate quantity of fruit. Before, an instant order of a precise amount of fruit (e.g. 3 tons) was executed on the basis of estimates from experienced forepersons who could not accurately decide whether the workers picked only 2.5 tons (and the customer would not be satisfied) or 3.5 tons (and the excessive amount of fruit would be wasted). With the system in place, the exact amount of fruit, which has been picked up and stored so far, is constantly monitored. Thus, the work ends precisely at the moment when the required quantity has been collected.

Lessons learned

The implementation of the IT system has proved to be very useful for the company, it allowed Sadpol to:

- increase the scale and reduce the cost of the production;
- improve quality of fruit offered to customers through continuous control;
- reduce costs related to fruit collection and storage
- cope with the workforce management and payment processes.

Cost savings have not been quantified by Sadpol management, therefore no figure is available.

Sadpol experience highlights the importance of the human factor when introducing ICT in a company. People, especially in non-IT firms, tend to be reluctant to technological innovation and need to be properly trained. The Sadpol case study is interesting as it demonstrates that e-business solutions can be successfully introduced even in a context where human resources are rather unqualified for the use of ICT.

Sources and references

This case study was conducted by Adam Turowiec (adam.turowiec@expert.virt.pl) on behalf of the *e-Business W@tch*.

References:

- interviews with Mrs. Monika Zielińska, assistant to Sadpol's President Mr. Glinicki, and Mr. Grzegorz Garczarek, Sadpol IT administrator (January 2005)
- www.Sadpol.pl

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