



It's sweet when sweet making is made easy

## IMPROVED AVAILABILITY BRINGS SUBSTANTIAL SAVINGS

*The numerous production lines of the confectionery factory affect all the factory's processes. Therefore, measuring overall equipment effectiveness and locating problems is extremely important. The measuring also gives information on cost savings.*

The Fazer confectionery factory at Lappeenranta has a long tradition in Finnish sweet making history. Its roots are in the Chymos factory that was established in the 1920's. The production of the factory in Lappeenranta has rapidly grown during the last few decades after certain kinds of production have been transferred there from the concern's other units.

At the moment, the annual production of the factory is approximately 18,000 tons, and the staff numbers about 310. Altogether, Fazer Confectionery in Finland employs about 900 people and produces 64,000 tons of different taste sensations.

At Lappeenranta, there are roughly seventy production and packaging lines that in various ways depend on each other. It would be practically impossible to systematically develop the production manually or through statistical methods, so the production is being automatically monitored with the ARROW Machine Track system.

Thirty production lines out of seventy are monitored. The principle is that the system includes the most important lines, and those easiest to connect to the system. The newer the machine, the less trouble there is to collect data needed for the monitoring.

### THE PRICE OF AVAILABILITY IS UNAMBIGUOUS

Production Manager **Jari Vahersalo** says that at Lappeenranta, the monitoring is used to measure overall equipment effectiveness (OEE). This means that the components of availability, performance and quality are multiplied with each other. Even if in all these sectors we reach the promising level of 80%, the overall equipment effectiveness is still barely above 50% ( $0.8 \times 0.8 \times 0.8 = 0.512$ ).

“We know that at our factory, the improvement of one percentage point in OEE yields annual savings worth more than the annual labour costs of two employees. Knowing this gives motivation for searching the bottlenecks and critical points of production in exchange for a maximal yield”, he says.

According to Vahersalo, the best quality of ARROW Machine Track is clearness. At a single glance you see which lines are currently in operation. You can also see the recent operation history, that is, the availability during the last few hours.

“Already when entering the door to work the evening shift, you see the morning’s production performance. On the large 47-inch screen, everyone can see what the machine control tells about operation of the machines, and at the same time you can prepare yourself for the upcoming work”, says head of automation **Olli-Pekka Lohi**.

He says that although the information obtained through Machine Track mainly concerns the past, the data is still the reliable primary source of information about the cause and effect relationships, recurrence and seriousness of the occurring problems. In that regard, the data is fundamentally important, because it brings us to the very roots of the problems and helps improve the overall equipment effectiveness.

### A TOOL FOR REPORTING

The Fazer concern chose SAP as the primary tool for managing the operations. The company administration sets goals for the units, and the achievement of goals is monitored and reported to upper management.



According to Vahersalo, ARROW Machine Track is a convenient tool for reporting, because information obtained through it can be summed up and simplified. In this way, the information is visually available.

Machine Track is utilised in roughly half of the production lines. The emphasis is on the newest machines, because they are the most important from the viewpoint of total production. In addition, the newer the machine, the more likely that it is controlled with programmable logic. This means that the electrical impulses required by machine control are effortlessly obtained without separate sensors.

“As is typical of the food industry, our machinery consists of both new and old machines; the oldest wrapping machines are from the year 1967. Connecting them to the control system is hardly profitable, but the new machines are important to the whole production, and their control system automatically provides us with a large

amount of monitoring information”, says Vahersalo.

He says that different sweet assortments are becoming more popular year by year. In for example packaging, this means that different parts of production are even more tightly linked together. The sweet assortment cannot be packaged if there are no yellow sweets, and therefore also the packaging of other colours of sweets is delayed.

From the viewpoint of the factory in Lappeenranta, it is also a great advantage that the software supplier is Finnish. There is no language barrier or time difference, and the Finnish company culture favours customer specific tailoring and flexibility. The Finnish company culture easily allows swift customer specific changes, whereas the company culture in Germany, for example, is more inflexible and changes are first carefully tested inside the organisation. In Finland, the opinion is that it is easier to simply do the job than figure out how to manage the bureaucracy caused by changes. ■

## ARROW Machine Track

### MACHINE CONTROL

- + product specific monitoring
- + OEE measurement

### TECHNOLOGY

- OPC access to Siemens and Omron logics and Ethernet I/O
- Beijer E200, Siemens and Omron
- MS SQLServer
- Info screens at the factories