

Industry: Food & Beverage

## Lotte SamKang

www.lotteSamKang.co.kr

*“Wonderware InTouch HMI is much better than I had imagined. We can make decisions twice as fast.”*

**Shin U-Infra,**  
Business Team Manager, Lotte SamKang

## An Integrated Production Management System for the Food Industry

by Maha Net Co. Ltd.

### Goals:

- To develop a new plant resource management system capable of supporting decision-making with real-time information and accurate reports of usage and operations.

### Challenges:

- The calculation of accurate manufacturing costs was non-existent;
- The old system wasn't able to track claims;
- Unable to collect operating and quality costs;
- There are large losses from errors in manual operation;
- Lack of accurate operation analysis data;
- Yield, operation rate, productivity, etc.

### Wonderware Solution:

- ActiveFactory software;
- InBatch software;
- InTouch HMI;
- Wonderware Historian.

### Results:

- Information on resources are sent to the ERP systems, with the additional ability of quality management tracking;
- Accurate calculation of unit product cost for corporate strategic planning;
- The Wonderware solution has enabled the effective planning of production activities.

**Seoul, Korea** – Founded in 1958, Lotte SamKang is the market leader in the Korean food market for the past 40 years.

In 1960's, Lotte SamKang established Korea's first sanitary facilities for the production of quality ice-cream with products such as the SamKang Ice Bar.

Since then they have produced many popular ice-creams such as Jjuju Bar, Amatna, Daeji Bar, Goo-Goo products, Hazelnut Café, Turtle Bar and many others.

Eventually, Lotte SamKang ventured into the manufacture of other products like condiments to special restaurant sauces, instant meals, coffee, baby food, bread and cookies.

**Background and Objective**

Lotte SamKang required a new plant resource management system capable of supporting decision-making by transparently reporting information on usage and operation of all on-site resources.

In addition to that, a real-time management system was required to strengthen the company's competency and develop new growth engines.

**System Development Objective**

Although the information system allowed the accumulation of data and support for decision-making, there was a need for dynamic real-time information management for field-oriented decision support, tracking of various production resources,

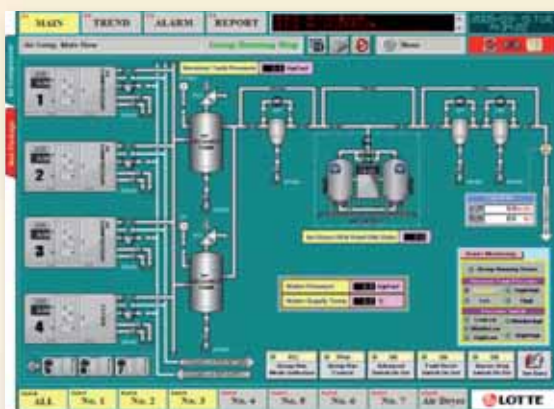


Figure 1: HAVC Utility Screen Example

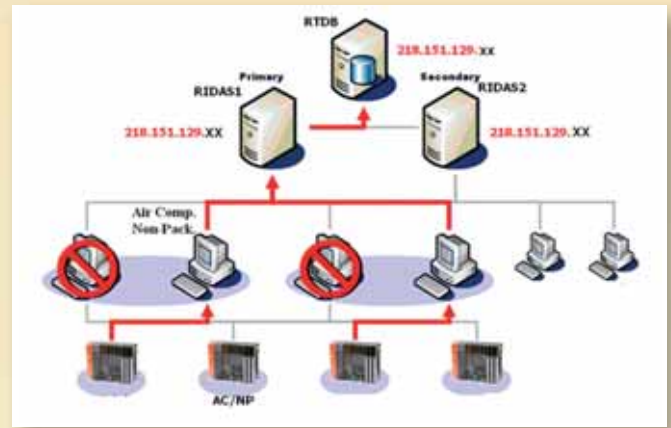


Figure 2: Utility SCADA System Structure.

and quality management.

**Real-time Production Information System capabilities**

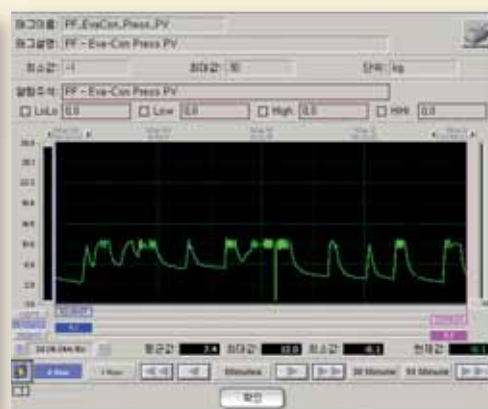
The capabilities of the integrated production information system included a real-time interface with the existing ERP, a human machine interface (HMI) connection to the automated production systems, an automated warehouse management system, and an enterprise asset management system.

**Integration with Utility SCADA**

All the PLCs at the Lotte SamKang plant are connected to the HMI where each unit operation equipment can be individually managed.

A Wonderware Historian collects all real time information.

The accumulated historian data is processed for use by the enterprise asset management system (EAM) or to the manufacturing execution system (MES).



The operating time data automatically extracted from the field equipment is transferred to the EAM so that the work orders can be automatically generated in accordance with the preventive maintenance strategy.

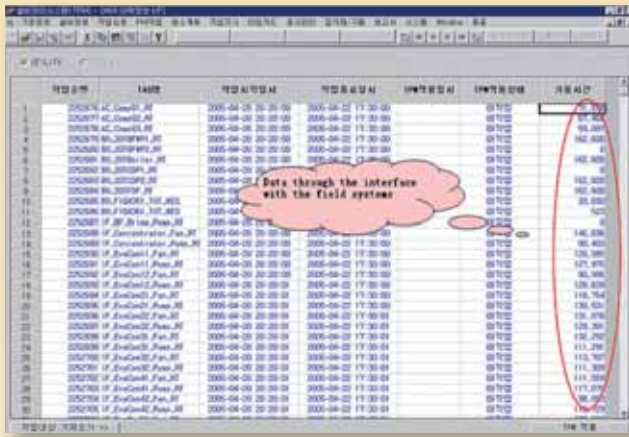


Figure 3: Use of System Operating Time by Enterprise Asset Management.

sent to the systems at the upper tier. They can be tracked for quality management.

In addition, the utility usage information is recorded along with the actual production, both by personnel and by product, to get an accurate calculation of the unit product cost.

The collected information will also be used for corporate strategic planning.



Figure 4: Integration of all Production Data.

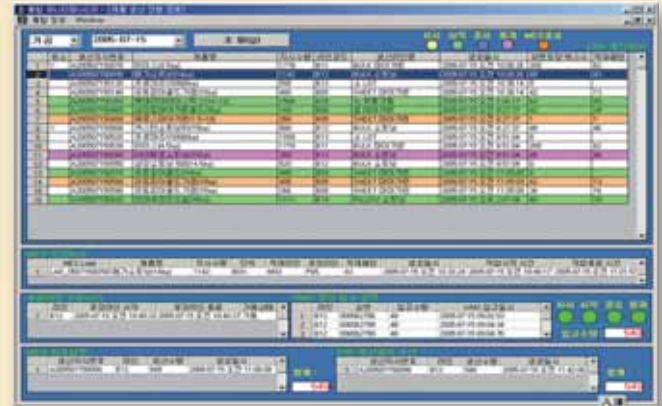


Figure 6: Monitoring of Production Status in One View.

### Production Progress Monitoring

In the past, an entire plant had to be patrolled in order to determine the actual production status. With the new system, all the necessary information is accurately displayed on the monitor in real-time. This makes production planning more effective and saves on personnel and operation cost.

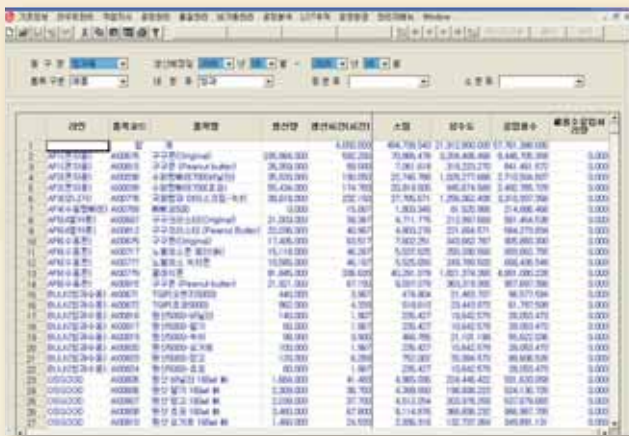


Figure 5: Utility Usage Status

### System Integration and Scalability

Lotte SamKang has considered the information system right from the start of the construction phase of the new plant and has invested heavily to integrate all the components that make up the solution.

### Integration of all Production Data

The information on all raw and semi-raw material input are collected by the HMI/ SCADA system and

The key feature of the solution is the dynamic configuration of the information system enabled by Wonderware. Any changes resulting from equipment or system addition can be easily adopted and deployed.

*This document was realized thanks to the support of: Lotte SamKang.*