

At SI, everything we do is geared around helping our customers to run their perishable food businesses as efficiently as possible, whilst enabling them to fulfil their customer expectations. They rely on us to provide superior levels of control throughout their businesses to provide a real-time understanding of what's going on. By working with us, and using our specialist software, they can make informed, effective decisions and fine-tune their operations in real-time.

At SI, we know that a business relationship is based on mutual trust and understanding. We work alongside our customers to get under the skin of their operations and define the very best solutions to fit with the way their businesses work. The SI difference is our combination of a proven solution,

created directly for the food production industry, and the unrivalled knowledge provided by our specialist team.

Our values underpin everything we do – straightforward, innovative, tenacious, committed and trusted - and are the direct result of our own customer feedback when we asked them what we were like to work with and how we were different to other suppliers.

Whatever the challenge, we are driven by a common purpose to ensure our customers are always satisfied. We never give up; we always take ownership; we make it work for you. Our drive, tenacity and commitment are the foundations of our longstanding relationships.

“What makes you different from the competition? Specialist solutions. People. Real service. **Faccenda Foods**”

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Powered by **integreater**

## At SI, we know cheese.

From monitoring the recipe make, maturation and grading, through to the block of cheese being cut, its yield, giveaway and distribution. We've invested our know-how to design a set of software to manage and add value to every one of your processes.

### Unique Cheese make sheet software.

Our Integreater software manages all ingredients that go into the vat, providing real-time data capture for all your make processes, allowing you to hone in on best conditions to maximise cheese quality.

### Track your cheese – from the minute it's made.

Our software provides real-time visibility, even when stock is constantly changing throughout maturation and grading. It will even change all batch product codes and automatically alert you when re-grading is due.

### Improve yield, reduce giveaway and increase profitability.

Whether you're a cheese maker or a processor, our software uncovers the business cost of your giveaway. By simplifying your planning and forecasting, you always know the customer specification, cheese profile and product suitability of every order.

With Integreater food productivity software in place at your business, traceability from farm to your customers will be straightforward and wastage will be minimised.

SI works closely with many leading cheese makers and processors alike, including:

- South Caernarfon Creameries
- Butlers Farmhouse Cheeses
- Cropwell Bishop Creameries
- Long Clawson Dairy
- Caledonian Cheese Company
- Dansko Foods
- F J Need
- Exton Foods



# The difference between standard ERP software and Integreater?

## Chalk and cheese

### The cheese process



**Managing the raw ingredients**  
Milk delivery → Pasteurised or non-pasteurised → Tested for quality → Safeguarded against pathogens.

**Mixing the ingredients**  
Cultures added including rennet for coagulation and lactic acid. Additional ingredients may be added to counteract bacteria, or determine colour.

### The **si** effect



**Automate your cheese make sheet**  
Our cheese make sheet module records and analyses all conditions – from milk supplier details, the vat, temperatures and moisture, through to pH levels – to hone in on best conditions to maximise cheese quality.

# 9,530

# litres of milk = 1 tonne of cheese

(source:DEFRA)



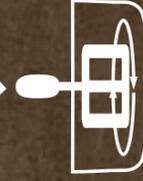
**Curds and whey**  
Product transferred into vats → Curds and whey cut → Fineness of cut determines moisture and texture of cheese → Curds remain suspended in whey with stirring.



**Data capture - every step of the way**  
Temperature taken and recorded automatically. Data capture tracks entire cheese making process. QA records key information, including moisture levels.



**Cooking**  
Heat treatment regulates size, limits acid producing bacteria and promotes contraction of curd.



**Final stirring**  
Further development of lactic acid and more whey exuded from curd grains. Curds separated according to method of cheese production.



**Moulding and pressing**  
Curd milled and salt added. Product pressed into moulds or sent for cheddaring. Additional processes include salting, waxing, shrink or cloth wraps, or spraying with mould.



**Ripening**  
Product moved to cheese store → Flavour and texture determined during ripening resulting from microbiological, physical and biochemical changes → Climate impacts ripening time, weight and resulting rind.

**Gain real-time view and know how each cheese is "moving"**  
Automatically record storage details, for how and when cheese is moved. Gain live visibility of stock and ensure older stock isn't forgotten.

Track where your test block is within your stored pallet. Understand how each cheese is "moving" through maturation.

Analyse make, maturation and storage conditions for high quality cheeses to better enable replication of future batches.

# 80,000

UK dairy workforce (source: Dairy UK 2016)



**Product suitability**  
Cheese may meet legal and safety requirements but be deemed unsuitable due to appearance, flavour or texture defects.

A real-time view for every block, its grade and location automatically update entire batch whenever a block is graded. Know when re-grading is due with automatic alerts.

Whenever cheese is regraded, Integreater changes all product codes in the batch.

Easily identify which products are suitable for your customers through individual cheese profiles.

# 700

named cheeses produced within the UK (source: British Cheese Board)

**Improve yield, decrease waste and increase profitability**

Through real-time analysis of production runs, you can improve yield and minimise giveaway on fixed weight product and mass balance.

Recognise why a block or batch is producing more off-cuts than usual, with real-time data.

Yield and giveaway

# 7-8%

Grated and sliced cheese market growth per annum.

Prime finished products

Secondary offcuts

Waste

Know what should be processed, by customer spec, plan and forecast

Scan prime finished products for production and measure in real-time. Box, weigh and label. Catch product giveaway on fixed weight product.

Weigh and label. Sell or reissue into production for further processing.

Automatically capture waste for mass balance.



**QA & traceability**  
QA determines conformity of the cheese to legal standards, customer requirements and grade to achieve payment.

Complete forward and backward traceability assured

Electronic data capture to ensure complete traceability and reduce recording errors.

Identify variances, stock anomalies and rejections against standard cost to assess stock valuation.

Stock valuation



# Maximise your cheese quality

**We're often asked how Integreater differs from mainstream ERP solutions. There are many well-established ERP back-office solutions, but these systems are unlikely to cope with the specific requirements for cheese making and processing, without significant modification.**

Integreater is different. It's purely designed to work in your environment and we've also invested our knowledge to create specialist cheese manufacturing applications.

With Integreater, you have the choice of selecting either the complete ERP solution or choosing just the modules that will meet your current challenges, whether on the shop floor or in the back office. And, due to the flexibility of Integreater, 3rd party software integration is also available.

## **Automate your cheese make sheet**

You know what it takes to make a great cheese, we know that keeping a detailed record of the process is imperative. That's why you can now throw away the paper and go digital, thanks to our unique automated cheese make sheet.

Our Integreater cheese make sheet software manages all the ingredients that go into the vat and the conditions of the make. It records and analyses conditions - from suppliers, the vat, temperatures, moisture, PH levels, through to blocks out and ready for storage. It automatically picks up process points in real-time, including volume of milk in the vats, the milk density, the amount of fat within it, when temperature has been taken and for how long, and checks on salt content. Ultimately, it provides you with all the information you need to compare each cheese make with the grade and quality of the end result.

“ **Our unique software defines exactly how the cheese make was delivered. So, when one good batch is compared to a less valuable one, we can, over time evaluate data that will help to pinpoint where the make process influenced the maturation process.** Rob Stephens, CEO, SI ”

## **Stock control and valuation**

When you have control of your stock, you have control of your business. But when the stock is constantly changing, it adds layers of complexity. Our software provides live visibility of stock, the exact location for where it's being kept, no matter where it moves within the storage area.

Our Integreater software not only provides details of current stock levels, but also enables quickly and easy access to the value of stock as it is graded. This is achieved by identifying any variances, stock anomalies and rejections against the standard cost.

## **Regrade and automatically update your product codes**

Electronic data capture not only ensures complete visibility and traceability, but reduces recording errors, typical in manual paper based systems. When changes need

to be applied to all products within a batch, Integreater changes all the product codes automatically, whilst maintaining all the original data. The solution also provides the flexibility for authorised staff to add and record ad-hoc information, whenever necessary.

We've also simplified reporting. Just select who should receive each report, when and how often, then define what information needs to be provided. For example, within our cheese grading application, you can define which products are due for inspection during the following week or identify any overdue items.

The grading application can then be configured so that the required reports are automatically generated, including QA and grading information, and then issued. Reports can also be produced on demand.

[Check out our illustration on the inside front cover to find out how SI's unique cheese software can help you manage the entire make process.](#)



# Reduce giveaway by $\frac{1}{3}$

Giveaway less and profit more with SI



Being able to reduce giveaway by 50% is not uncommon, as it's often the case that businesses don't think they have a giveaway issue, until they see our combined real-time reports, showing potential six figure savings. Paul Marston, SI Technical Expert. 

## It's too hard to stop giving product away!

That's a statement that we hear at SI all the time when we talk to customers about how to manage giveaway more effectively. Both cheesemakers and processors have the same problem; it comes down to the difficulty they have with uncovering the true cost of giveaway and its impact on the bottom line.

The answer lies in having the right information, at the right time. This is why we have technical reporting specialists like Paul Marston, who work with customers to develop reports based on real-time information that combines data from our integrated planning, forecasting and production modules.

As Paul explains, "Unless you have the right data in a usable format, you can never have the right information you need to hand, to ensure the cheese profile and product suitability meets your customer specification every time. Our reports and dashboards can show giveaway and costed giveaway, right down to the detail of the product codes.

"Equally, unless you have specialist applications, like our yield manager, you can't predict margins before the raw materials are processed and determine the blocks should be used to account for all variants and complexities. But, because we understand each of the steps in both the cheese make and cheese processing sectors, how and when to capture weight, when it comes to yield, we can combine data into useful information to optimise raw materials, reduce waste and maximise profit margins.

"In addition, as yield specifications can be set for each product, and performance measured by comparing actual results against these criteria. Our software can then deliver real-time information, through dashboards and reports, to immediately alert operators to any discrepancies or for further analysis. All of this adds up to improved margins, thanks to increased yield and reduced giveaway."



# How much energy are you wasting keeping cheese in stock that just won't make the grade?

Through our unique collaboration between the food sciences department at the University of Nottingham and South Caernarfon Creameries, we are using research to create a model that will help you answer this question.

So instead of guessing what to stock and what to sell, see how you could work with SI and benefit from a world first technology and research collaboration, funded by Innovate UK\*, for the benefit of the whole cheese industry.

Read on to find out more about the research and how it could help your business.

\*Innovate UK is the UK's innovation agency, sponsored by the Department for Business, Energy & Industrial Strategy.



# Cheese Collaboration

“The research findings could allow SI to predict how a batch of cheese will develop and, as a result, help its customers to decide which cheeses to keep and which to sell, minimising wastage. Bill MacNaughtan, Food Sciences Laboratory Manager, University of Nottingham.”

Even as the food industry has embraced technology to control and standardise their production processes, cheese making retains more than a few reminders of its unpredictable origins as a craft. Every cheese recipe that a site produces will be slightly different, and while this can be great for enthusiasts, it can sometimes prove problematic for the manufacturers.

However, a partnership between SI, South Caernarfon Creameries and researchers at the University of Nottingham, may be able to provide a solution that limits wasted energy and time, without changing the product itself.

Unpredictability is a natural consequence of the cheese production process, but maturation can require the product to be held in storage for up to 18 months as its chemistry changes. Keeping stock in this way comes at a considerable cost in terms of both inventory value and storage, especially as the cheese needs to be kept chilled throughout. Currently, cheddar producers will typically overstock in the knowledge that only a proportion of their total inventory will actually meet the required maturation. Out of those that do mature, only some will have the optimum texture and consistency to provide the best yield when cut for retail pack.

Cheese making is unlikely to ever become precise enough to ensure that every cheese produced matures in the exact same way, so instead SI decided to see if there was a way to predict and model how the products will react before placing it in storage.

In this unique research collaboration project, the company teamed up with South Caernarfon Creameries, who have been providing both samples and several decades of cheese making experience, together with the experts at the University of Nottingham's Food Sciences department.

With the aid of a grant from the Government's Innovate UK initiative, the project has been studying mature cheeses in minute detail, to find out exactly what parameters indicating maturation and cutability could be measured and how they might be influenced by the cheese make process.

“Using a texture analysis machine, you can measure how crumbly the cheese is, how elastic it is, and other physical properties,” explained Bill MacNaughtan, Food Sciences Laboratory Manager at Nottingham. “As well as that, we've been taking spectroscopic measurements that can give an idea of the chemical makeup of the cheese, and thermal measurements that let us determine its melting point.”

Pictured: Yangyi Chen, Food Science graduate at University of Nottingham, analysing the cutability data for cheddar.

Continued...

“We’ve been making a note of all these measurements at different points along the maturation process and, in the longer term, hope that when we combine it, we will be able to produce a very reliable model of cheese maturation and cutability. This could then allow SI to predict how a batch of cheese will develop, helping its customers to prevent wastage and decide which cheeses to keep and sell. For example, if producers could predict how certain parameters will change, they could minimise energy and storage costs for a cheese that won’t ever develop into a mature vintage product, and this could result in significant cost savings.”

#### Making use of data

SI’s unique cheese processing technology already tracks a huge amount of data about each batch of cheese, from the raw ingredients right through to the finished product. Now, the plan is to integrate any information uncovered by the researchers at Nottingham, in the hopes of creating a package that allows manufacturers to better predict maturation and cutability.

“Through tighter data capture and detailed information, the research team has already unearthed ways to provide benefit and add value to the product. “When data is compiled over the course of weeks and months, it could reveal that many manufacturers aren’t being as consistent in

their processes as they believe themselves to be; small changes over time can quickly add up,” explained Rob Stephens, SI’s CEO.

“If, because of this collaborative project, we unearth a way to predict which cheeses will mature, it will be a major breakthrough for the industry. This predictive model would also complement our unique software that can already deliver significant benefits to cheese makers and processors. Our unique electronic version of the traditional cheese make sheet captures live data from the processing equipment used to create each batch. Using this software, we can define exactly how the cheese make was delivered, pinpointing things like changes in temperature. So, when one good batch is compared to a less valuable one, we can, over time gather information that will help to pinpoint where the make process influenced the maturation process.”

With this information at their fingertips, cheese makers can look to prevent those small changes in the cheese make that will make a big difference to the end result. And through our ongoing research and development, SI can help to make the cheese industry more sustainable, through a reduction in both energy and unnecessary storage costs.

Interested in finding out more about the research? Send your details and request for further information to [info@siltd.co.uk](mailto:info@siltd.co.uk) to register for updates and a copy of the full report.



“When data is compiled, it could reveal that many cheese makers aren’t being as consistent in their processes as they believe; small changes over time can quickly add up. Rob Stephens, CEO, SI