Automating the Quality Control of Fragrances

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Seven
Overview

• Who are Seven?
• Drivers for change
• Decision process
• Scope and Implementation
• System
• Evolution
• Results
• The Future
Who Are Seven?

“If we were to start with a blank sheet of paper and figure out what to do, if we weren’t afraid of failing, what is the most audacious thing we would try?”
Seth Godin - Purple Cow: Transform Your Business by Being Remarkable
Who Are Seven?

• Principal activities
  – Creation & development of fragrances.
  – Procurement of fragrance raw materials.
  – Compounding of finished fragrances.
  – Distribution of fragrances globally.

Sending out 150te of finished fragrance per month worldwide
Worldwide Customer Base
Drivers for Change

“To create a quality management system that is robust, secure and auditable…..”

Alistair Wilding Technical Manager - Seven Quality objectives 2008/09

• System in place was unreliable and without support
  – No traceability

• Alternatives
  – LIMS
    • Expensive, unnecessary
  – Statistical packages
    • Limited ability to store chromatography
      – Had good trending capabilities
Decision Process

• Stripped concept
  – Reduced requirements to fundamentals
    • Required database to capture Chromatography with the rest of the data

• Concept rebuilt
  – Required functionality re-introduced

• Reviewed available options
  – Potential could be seen in the ACDLabs package
Scope

• Multiple forms of testing
  – GC, RI/Den/SG, FTIR, Olfactive
  – Physical Properties
    • Mobile liquid, Non-volatile, Solid

• Sample Types
  – Finished Products, Raw Materials, Potential Purchases
    • Different output requirements

• Integration with other systems

• Trend Analysis

• Electronic Sign-off
Integration

• Data from each piece of analytical equipment
  – GC Chromatography
  – FTIR Spectra
  – RI/Den/SG .csv file

• Integration with WMS (Marco) system
  – Lot information
  – Approve / Quarantine / Reject
Implementation

• Workflows established
  – Each sample type

• Functionality added
  – System integrated with WMS test server

• Plenty of Beta testing – Project Creep
  – Forms and reports designed
  – Security profiles implemented
Sample Entry

New records require binding to a chosen workflow, dependant on sample type
Sample Entry

The Lot number and Description are mandatory for raw materials and finished products. The rest of the data is retrieved from the WMS system.
The System

More information available from WMS for raw materials
GC analysis

Differences seen show variance in GC conditions and sample preparation.

Reference data retrieved through use of unique product code.

Pink is the reference chromatography.
Blue is the sample chromatography.
System Evolution and Functionality

- System evolved throughout development to make the system more user friendly and secure
- Pass/Fail criteria
- Perfumer review
- QMS form
The QMS form allows for quick searching for previous examples of the same material, the reference data for the material, initiate GC and FTIR overlays, reprocess samples and search for all items for the perfumery departments attention.
Results

“Seven now have a fully transparent and auditable data management system to help ensure product quality and traceability……”

World Class Manufacturing Audit Findings (May 2010)

• Controls stock movement within the WMS
  – Automated status updates
• Collates all associated testing data with specified lot number
• Allows for secure auditable sign-offs
• Auto-generates Certificates of Analyses
• Reduce QC analysis time by 25%
Further Improvements

• New workflows incorporating QA functions
  – Supplier C of A’s
• Removal of obsolete workflows
  – Some initial workflows not used
• GC HQI results
  – To allow pass/fail criteria to be applied
• Trend analysis
  – Tracking supplier quality
  – Specification creep
    • Impact of naturals
Summary

• Seven
  – Worldwide fragrance company

• Drivers
  – Quality

• Implementation
  – Project creep

• System
  – Running with good functionality

• Robust, auditable and secure data management system
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