

# LabSystems Case Study: Kodak and LabSystems - working together on SampleManager development

## Company:

Kodak European  
R&D Laboratories, Harrow, UK

## Industry Sector:

Photographic Materials

## Environment:

R&D

## Software Used:

SampleManager v3.1-1

## Platform:

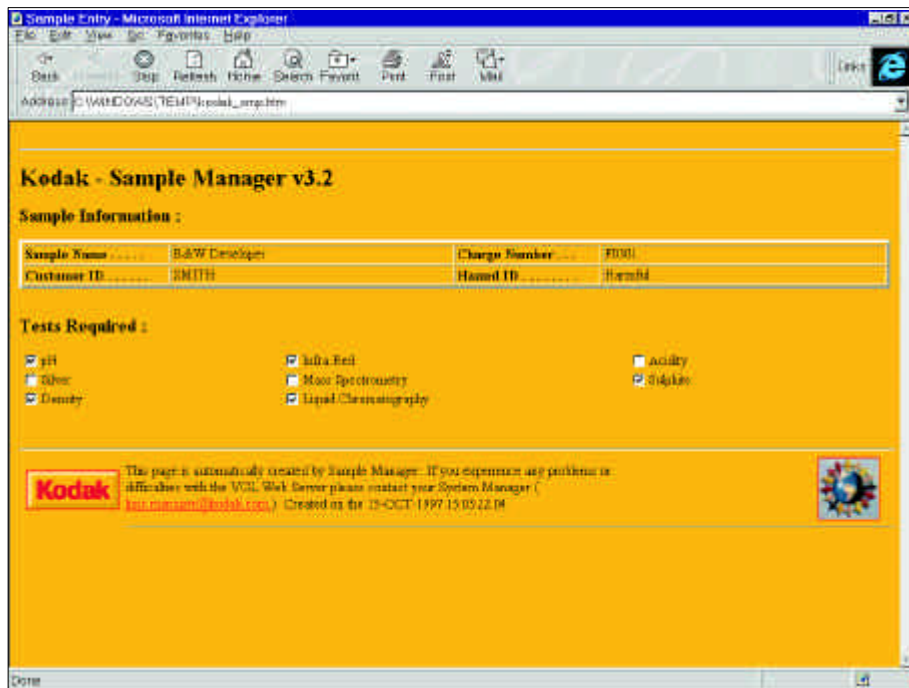
VAX on Open VMS

## Database:

Oracle®

Kodak European R&D is part of the worldwide R&D operation of the Eastman Kodak Company. Approximately 300 scientists are employed on the Harrow site, working on an extensive range of corporate R&D programmes for chemical and digital photographic products and materials. The Analytical Laboratories at Harrow, which are part of R&D, are UKAS accredited (United Kingdom Accreditation Service) and offer a range of services which support all aspects of photographic R&D, support the manufacturing operations at Harrow, and also supply some services to external customers. Its analysts are leaders in worldwide analytical technology, striving to develop the application of analytical technologies to Kodak's business.

Kodak has been a customer of LabSystems since 1989, and uses SampleManager to provide sample, test and results management compliant with the UKAS standard and to facilitate the integration of analytical data into R&D programmes and projects. In addition to its use at Harrow, the system is also used at two of Kodak's other European sites in Liverpool and Chalon-sur-Saone in France in support of their local manufacturing and R&D operations. There are approximately 220 users for the LIMS across the three sites.



Across the three sites SampleManager is used to provide sample log-in, test assignment, sample tracking and results entry for the services offered by the Kodak Analytical Laboratories. These services include Organic Characterization, Environmental Analysis, Processing Solutions analysis, Microscopy, analysis of photographic products and intermediates plus problem solving and method development activities. The laboratories utilize a significant range of analytical technologies, notably Chromatography, Mass Spectrometry, Vibrational Spectroscopy, UV and Spectroradiometry, Optical and Scanning and Transmission Electron Microscopy, Metals analysis (AA, ICP, XRF), Particle Sizing, Electroanalytical techniques, Microanalysis, Nuclear Magnetic Resonance, and a number of physical and photographic testing techniques.

Since at least 90% of the Laboratories' data is generated in electronic form, instrument interfacing is utilized wherever possible. Currently, about 50% of the results entered into LIMS are transferred directly from laboratory instrumentation.

In addition to sample and test management, a sub-system is devoted to the management of equipment calibration dates. This is largely a background operation, checking on a daily basis which equipment is due for calibration within the next four weeks, one week or whether a calibration date has been missed. Equipment owners receive automatic e-mails reminding them of due-dates, or pointing out if they have missed a calibration date. In the latter case, the Quality Manager also gets a copy of the e-mail.

Having utilized LabSystems' SampleManager LIMS for more than nine years, Kodak European R&D has a long-established experience of using LIMS. As well as an established business relationship with LabSystems, Kodak has had the honour of chairing the SampleManager User Group (SMUG) through John Trigg. LabSystems have regularly signalled their belief that an active User Group has a significant role to play in helping to maintain and develop their business.



# Case Study: Kodak

SMUG has been particularly active in developing a relationship with LabSystems that currently places a significant focus on Joint Application Development - a means of involving customer companies in the development and enhancement of products. This process ensures that after the purchase of a product, there is considerable opportunity for customers to have influence on further product development. This is achieved through participation in joint project teams which work together to establish requirements and to evaluate and refine prototypes. This process has now become an integral part of the User Group activity.

Implementation of LIMS in an R&D environment is notoriously difficult. Complex workflows, diverse data types and R&D scientists do not lend themselves well to a well-defined, structured environment. But LIMS brings powerful benefits to R&D in its ability to manage and track samples and deliver critical information about management of resources and costs. In Kodak's case, there has been a gradually emerging recognition of how LIMS should and how it shouldn't be used. This has led to three specific application points:

- By carefully implementing LIMS to meet workflow requirements, a wealth of management information can be acquired for free! The transactional nature of all LIMS inputs means that data (such as 'who', 'when') is recorded against each transaction.

Development of a few simple reports can therefore reveal a significant amount of information about resource utilization, lab performance, work throughputs, costs, etc. Although it was never a primary objective of the LIMS implementation, this has now become one of the most business critical deliverables of the system and plays a significant role in understanding and managing the 'analytical business'.

A number of background reports are run on a daily, weekly or monthly basis to gather information on test throughputs and turnaround times. This data is used, and

published internally, to illustrate the influence of laboratory workloads on turnaround times and to identify the analytical charges on R&D programmes. The use of LIMS data has been instrumental in helping develop a clear understanding of laboratory performance.

- A large number of LIMS accounts are held by users who are designated 'occasional users'; i.e. their interactions with the system are limited to a few simple functions such as sample submission, checking results, etc. To run the application software for occasional tasks such as these is not cost effective; these users often need more training and support than frequent users of the system.

A solution to this problem was jointly developed by Kodak and LabSystems, by providing a 'Web-enabled' interface to SampleManager. This interface ( a URL which can be located on the corporate Intranet and available to anyone with a browser and a LIMS account) allows a simple form to be filled in and then posted to the LIMS to provide either a sample login, or to make a query against the LIMS database. This has the immediate benefit of eliminating a significant amount of the support and training cost of occasional users, and also provides a user interface which is simple, intuitive and readily available.

Having originally identified the need, Kodak and LabSystems agreed a technical approach. Kodak provided the technical resource to develop the interface; LabSystems provided access to their development team and their in-house resources to ensure that the project proceeded in a standardized and consistent manner. The outcome was not only an interface developed to Kodak's specification to meet their business need, but a product enhancement which will subsequently be shipped and supported with later versions of

SampleManager.

- Sample management is only a part of the R&D business. The primary function is experimentation, within the framework of an R&D programme or project. LIMS therefore has limited applicability to the overall R&D process. But its integration into this process creates the opportunity to help exploit the intellectual property of an organization by providing seamless links from the higher level aspects of R&D programme management down to the individual data items which have been acquired, processed and analyzed within experiments. For this reason, Kodak is currently implementing an Electronic Lab Notebook to provide the appropriate facilities for managing its R&D programmes, and a critical element of this project is to develop an integrated link between the Electronic Lab Notebook and SampleManager so that samples may be submitted directly from the Notebook, that queries can be run against the LIMS database and results/reports are directly accessible to the Notebook.

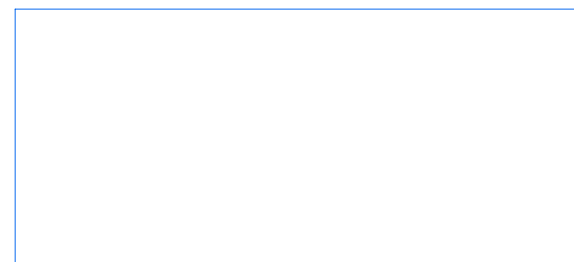
LIMS plays a fundamental and strategic role for Kodak's R&D Laboratories. Alongside data acquisition systems, data analysis systems and the Electronic Lab Notebook, LIMS is a key component of an information architecture which integrates Kodak's R&D programmes and provides a basis for establishing Knowledge Management as an everyday productivity tool for R&D scientists.

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