designed with you to work the way you work

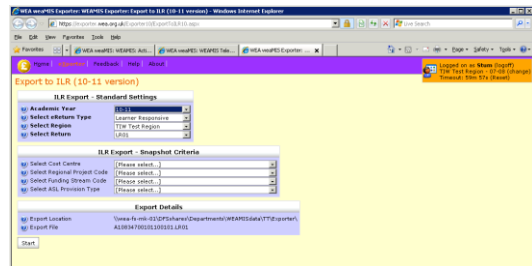# Case Study: Workers' Educational Association

& weaMIS

Overview

Imagine10,000 courses for 110,000 learners each year, run by 6,000 session tutors in 4,000 venues organised from offices in 9 English regions and 1,000 branches across the country with the help of 40,000 voluntary members…
…and you've imagined the WEA – the largest voluntary provider of further education in the UK

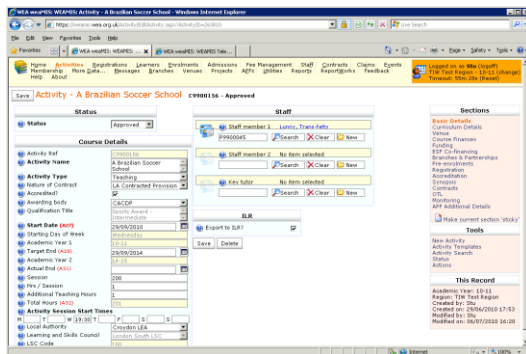Now imagine the **information system** that keeps all the cogs of this large enterprise turning smoothly…
… and you've imagined **weaMIS**, the fruit of a partnership between the staff of the WEA and Infoworks which began in 1993.

This case study gives a snapshot of what weaMIS is; it tells some of the secrets of the success of the partnership and some of the story of how it came about.

What it does

The core of weaMIS:
- administers **courses** through their life cycle from idea to completed course
- provides batch entry for **learners** and **registrations** and administers the stages they pass through
- handles HR functions for the **tutor** panel, including all **contract** admin, pay **claims**, payroll integration and **staff training**
- facilitates **member** admin and mailing

- records & administers **branches**, **projects**, **partners**, **venues**, **resources**, **mailing lists** and **enquiries**.

There are modules for specialised services:
- Course organisers, field staff and other remote users login to a smaller interface version of weaMIS just to administer **course proposals**
- Another module is used just for **ILR export**, ie the export of learner returns for the Skills Funding Agency
- The public are able to enrol on and pay for WEA courses through an **EnrolOnline** module of weaMIS accessed through the WEA's main website
- The public can also call up and enrol on and pay for courses through a special **EnrolByTelephone** module

What it's like

WeaMIS is a big, beautiful, browser-based (meaning it isn't installed on your pc; it just runs through your web browser) application suite.

It's appearance – like that of any good website - is completely controlled by 'cascading stylesheets' (css) and therein, according to Marilyn Lynch, WEA's Strategic Operations Manager, lies the key: "Our previous desktop system was boring, battleship grey - our new one is, well, whatever colours we choose for the activity in hand. We currently have pastel yellow, blue & green for the main system; a contemporary deep orange, black & white for online enrolment; a more edgy purple & green for the call centre module; and pastel lilac

and gold for the ILR export suite. We spend our working lives staring at these things, we might as well make them pleasing on the eye!"


Users just see the bits of the application they have the security rights to see. So, for admin level users it's a very big system, but for temp staff entering enrolments it's very limited.
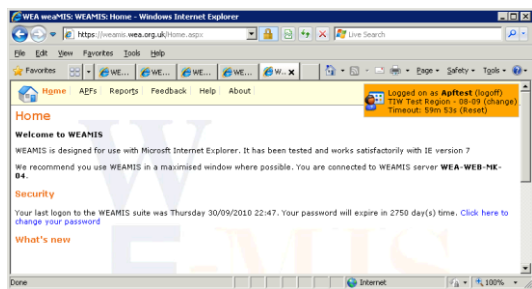
There are many, many parts to the system but they all have the same look and feel – it's actually a one-off bespoke suite of software written just for the WEA, but if you used it you'd probably think you were using a package.

Workflow – if you enter, say, a course proposal, then – as in any system - there is a lot of data that must be entered just to save the record. But when you go to approve the proposal, a further set of data is required or checked for consistency. For the course to be marked as 'in-progress' further data checks are made, and so on - weaMIS makes extensive use of this technique to regulate the workflows of key business processes involving courses, enrolments, pay claims, staff recruitment, contracts and so on.
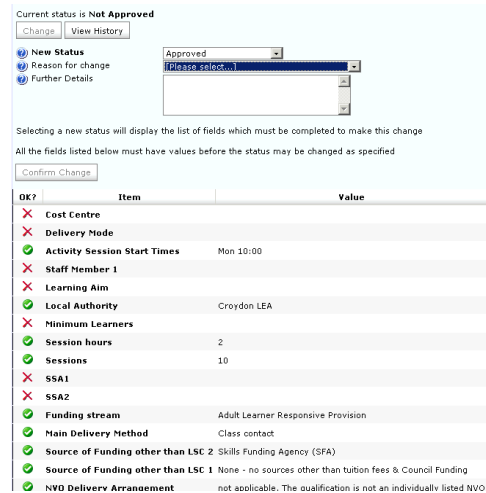
There are two things worth noting about this:
1. These workflows are stored as _data_, so the system manager can extend them throughout the system / throughout the business without changing the software.
2. Requiring users to enter different details at different times helps to ensure consistency at all points in a process, or as WEA's Strategic Operations Manager, Marilyn Lynch, puts it, "WeaMIS is helping us to standardise our business processes and transform the quality of our overall operations."

Regional "blinkering" – the WEA Regions used to be separate registered charities. When we first started providing information systems for the WEA, on of the key aims was to bring the organisations practices into line. The organisation is still very regionally focused, and the information system reflects that. The users in South West Region, for example, can only see data in their region. Some centralised functions - like payroll - cut across regional boundaries so they are allowed to data specific to their function across the association. Users get the data they need to do their job by a mixture of regional filtering – or blinkering - and function based security profiles.

What it is

WeaMIS is a bespoke suite of software written just for the WEA.

All weaMIS modules are 100% browser based – this is unusual for information systems in general but normal for Infoworks. WEA's Strategic Operations Manager, Marilyn Lynch, explains how this came about: "When we first planned weaMIS as a browser based system, we thought we'd need a

traditional desktop system alongside to support some of the more complex & intensive operations. We didn't - the web based system does everything we need. And when you design something complicated to run in a browser you're forced to think simply, the result is a simpler system which is easier to use and support,"

Being completely browser based has had a number of key advantages:
- everyone knows how to use a web browser: training costs are cut by roughly 80% when an organisation moves from desktop based software to browser based software
- no installation is required to use the system on a new PC: support & installation costs are also typically by 80%
- the system can be used from anywhere there is an internet connection, this particularly suits a geographically dispersed organisation like the WEA
- investment in hardware is concentrated at the centre, and the database-webserver-browser model is much more efficient than the traditional client-server model

Strategically
WeaMIS is a key channel through which the WEA both reacts and instigates change: "WeaMIS is ours, we own it. When we see an opportunity to get better by changing the way we do something or adding support for a new process... we can act quickly. We don't have to ask permission or wait around for a usergroup to agree, we're in control and we take advantage of that," says WEA's Marilyn Lynch.

Technically
WeaMIS is an n-tier asp.net over SQL Server application. The upper tiers of the application consist of Aspx pages with code behind, a business logic layer and a data access layer. The database structure is extensive – it consists of around 4000 stored procedures, 2000 views and 500 tables.

The system was firstly built on paper in 2006 using Infoworks' PaperBuilding techniques. We then created an HTML mockup of the system.
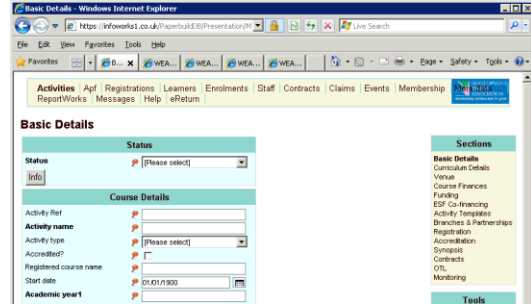
Once stakeholders were confident we were on the right track, the real build began. The system went live in September 2006 – at the time, about 95% of the application was actually generated directly from Infoworks PaperbuildDB requirements database.
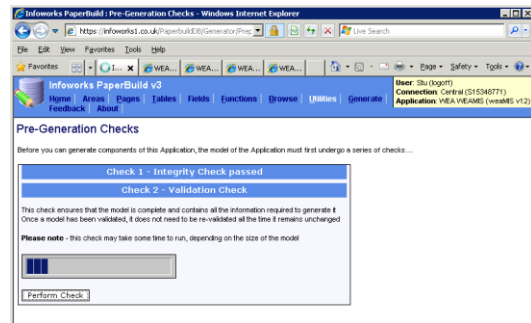
Since then, further generated elements have been added along with a lot of hand-coded business logic. Today, the balance is closed to 60% generated, 40% hand-coded – this is more a reflection of continuous change in the sector and the WEA's continuing growth and adaptation.

For those with a similar burden it may be interesting to note that the ILR export facility is based around one single, large SQL Server procedure. In it are documented the why and wherefore of conversions from weaMIS to ILR representations of data for all elements of Learner and Learning Aim datasets, for both LR and ASL returns. The procedure is year specific, as are the necessary variations in SQL views it draws upon. A small amount of post retrieval logic is used for (eg) programme data sets, then the data is sorted and sifted for output. The key element of this design is that the vast majority of business logic and yearly churn is concentrated in one single, fast and efficient database operation.

IT infrastructure
The Core application is server by two virtual web servers running IIS6 over Windows Server 2008, load balanced by a hardware firewall in a co-located data centre in Milton Keynes. They in turn are served by a non-virtual SQL Server. The online and telephone modules are served by another similar

virtual web server, and the same is true of the ILR export system.

The WEA has far sighted IT infrastructure strategy. Its provision is extensive and of a very high quality. The needs of the business information systems are always at the fore in procurement policy.
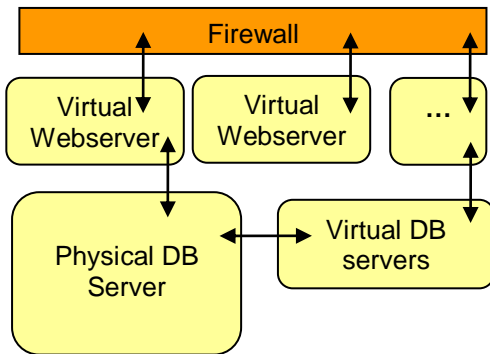

How the team operates

For the last 17 years, we've always had a similar project structure:

WEA project manager - who reports to management, interfaces with users and Infoworks. The project manager's is a business rather than IT role – it's a small but crucial point.

Infoworks project manager – who reports to WEA management and interfaces with Infoworks developers.

Infoworks development staff – as far as possible we try to keep this down to one highly skilled developer. 10 years ago it was never possible, today it generally is, as software tools and Infoworks techniques have both developed significantly.

All Infoworks development and the whole story of weaMIS are tracked through Infoworks' web based project management system called iSafe.
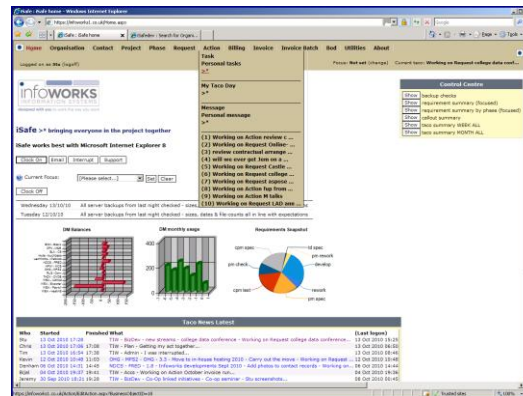
All major development phases go through several stages of analysis and modelling before development commences.

All individual development tasks go through a prescribed workflow in which team members are responsible for doing and documenting their individual jobs.

The operation of the team isn't perfect, but it consistently works very effectively and very efficiently.