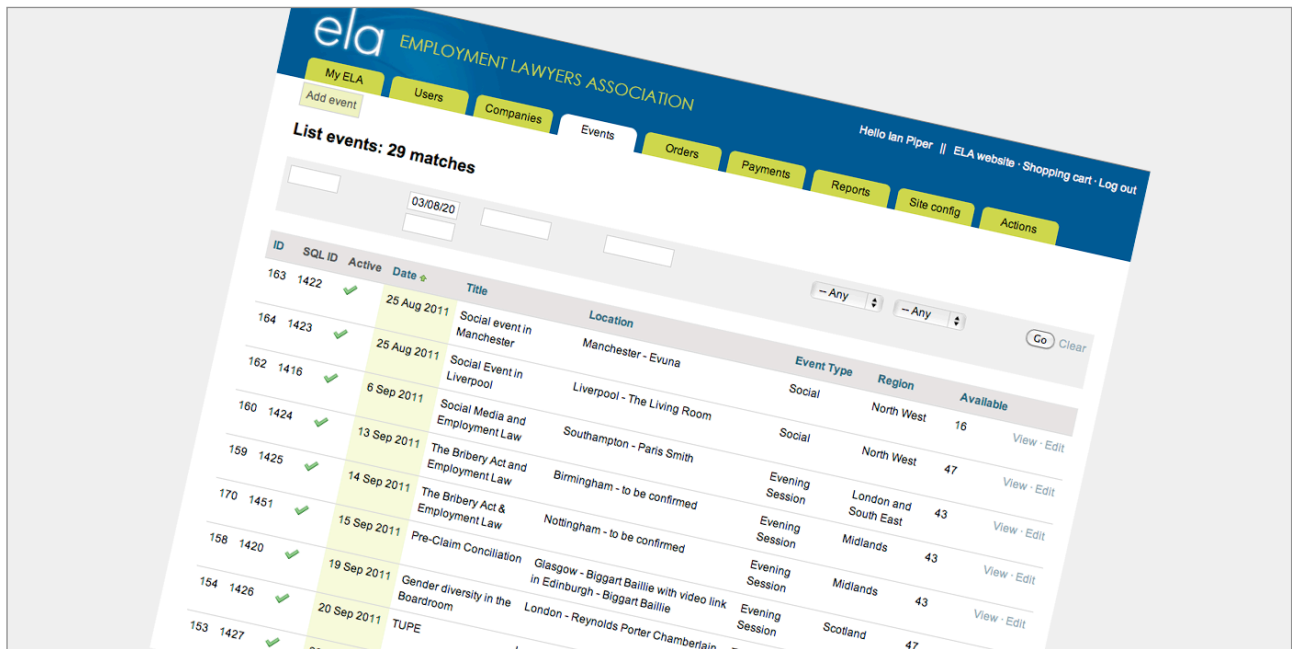


Client case study



The screenshot displays the ELA website interface. At the top, the logo 'ela EMPLOYMENT LAWYERS ASSOCIATION' is visible. Navigation tabs include 'My ELA', 'Users', 'Companies', 'Events', 'Orders', 'Payments', 'Reports', 'Site config', and 'Actions'. A user greeting 'Hello Ian Piper' and links for 'ELA website', 'Shopping cart', and 'Log out' are also present. Below the navigation, a search bar shows 'List events: 29 matches' and a date filter set to '03/08/20'. A table lists various events with columns for ID, SQL ID, Active status, Date, Title, Location, Event Type, Region, and Available count. Each row includes a 'View · Edit' link.

ID	SQL ID	Active	Date	Title	Location	Event Type	Region	Available	
163	1422	✓	25 Aug 2011	Social event in Manchester	Manchester - Evuna	Social	North West	16	View · Edit
164	1423	✓	25 Aug 2011	Social Event in Liverpool	Liverpool - The Living Room	Social	North West	16	View · Edit
162	1416	✓	6 Sep 2011	Social Media and Employment Law	Southampton - Paris Smith	Social	North West	47	View · Edit
160	1424	✓	13 Sep 2011	The Bribery Act and Employment Law	Birmingham - to be confirmed	Evening Session	London and South East	43	View · Edit
159	1425	✓	14 Sep 2011	The Bribery Act & Employment Law	Nottingham - to be confirmed	Evening Session	Midlands	43	View · Edit
170	1451	✓	15 Sep 2011	Pre-Claim Conciliation	Glasgow - Biggart Baillie with video link in Edinburgh - Biggart Baillie	Evening Session	Midlands	43	View · Edit
158	1420	✓	19 Sep 2011	Gender diversity in the Boardroom	London - Reynolds Porter Chamberlain	Evening Session	Scotland	47	View · Edit
154	1426	✓	20 Sep 2011	TUPE					
153	1427	✓							

A new membership system for the Employment Lawyers Association

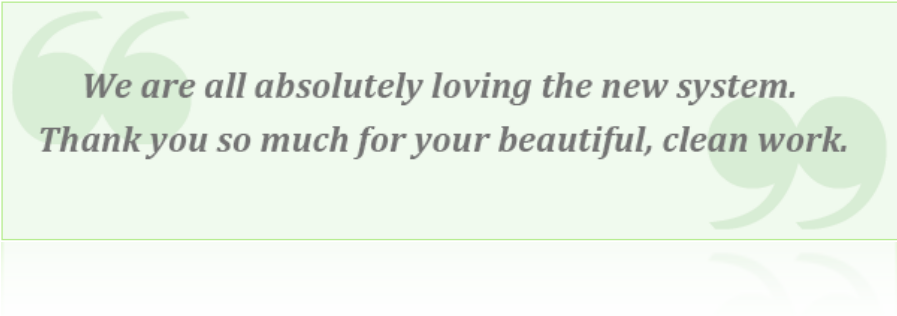
Spring / Summer 2011

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Case study key points

- Creation of a new subscription, event and financial management system for a professional membership organisation
- Project delivered to client's satisfaction, on time and in budget
- Use of Agile methodologies in project delivery was a key part of its success
- Product contains a number of advanced features including single sign-on, sophisticated financial transaction management and data interoperability between radically different computer systems
- Final product is built on open standards, lacks proprietary lock-in and is fully documented



*We are all absolutely loving the new system.
Thank you so much for your beautiful, clean work.*

Background to the project

The Employment Lawyers Association (ELA) is an apolitical organisation representing the views and interests of over 6000 specialist, qualified employment lawyers in the UK. Since its inception in 1992, ELA has become the voice of authority in employment law.

In February 2011 ELA awarded Tellura a contract to redevelop the web application used to manage its membership. The existing system had been constructed some years previously as an add-on to a bespoke content management system (CMS). As the original CMS was no longer under development and support options were limited ELA faced issues of future-proofing their data and introducing new features.

The project brief

The brief was to create a new system that:

- Provided improved administration of the membership, including tracking of member subscriptions, handling of orders and billing, html email newsletters and management of groups.
- Allowed for enhanced events management.
- Provided superior financial management and reporting features.
- Improved processes for handling membership queries.
- Interoperated seamlessly with the existing website and payment gateway systems.
- Provided future-proofing and minimised risk of future lock-in to technologies or development partners.

Analysis

It quickly became clear that the requirements mandated a bespoke system. We considered some of the many commercial off the shelf (COTS) membership management systems on the market, but none provided the flexibility or scope for enhancement that were required for this specific case. Having said that, a major issue for ELA was to preserve the legacy of their data and to avoid a future situation in which they had data embedded in an unsupported system. We addressed this issue in a number of ways:

- We designed the system using the widely-used PHP development language with the MySQL database. This solution enabled deployment on a wide variety of potential platforms, although we ultimately used Linux for the live system. This combination offers flexibility and speedy development, and the popularity of the tools means that the client should have no problems in maintaining or further developing the system. There is no proprietary lock-in and the client has a perpetual non-exclusive licence for re-use of the code.
- We adopted a standards-based, object-oriented framework approach to the design of the system. This used the Model View Controller (MVC) design pattern to ensure clear design with a low level of dependencies between components.
- We used and published unit tests for the classes that we developed.
- We documented the system thoroughly. We provided code-level PHPDoc documentation and high-quality System, Technical and User Guides for the system.

Through these steps we could assure the client that they would not be locked-in to working either with these technologies or this company in the future: other professionals will be able to take on further work with the minimum of learning curves.

Particular technical challenges

The needs of ELA presented some unusual challenges. They had decided to keep their existing CMS for the purpose of managing website content, and that system would remain with its existing hosting and management arrangements. The new system therefore had to co-exist and interoperate with the existing website, with a basic requirement being a single sign-on. A member or administrator logging in on either the existing website or the new admin system should be able to follow links seamlessly to the other system without needing to authenticate again.

- We solved the cross-site authentication problem by creating a mechanism to track and share the ASP.NET authentication cookies that had been used in the original system, and reproducing their functionality in the new system. This enabled us to share the authentication cookie as a token between the systems.

In addition, some information, such as event booking data, needed to be passed between the systems.

- We addressed this issue by creating SOAP-based web services in ASP.NET and PHP. Getting web services to interoperate between ASP.NET and PHP was not a trivial problem to overcome and we were pleased to develop an elegant solution.

A further challenge was that the system needed to allow members either to pay using a credit card payment gateway (Sagepay) or to request an invoice to be sent. This meant the construction of sophisticated mechanisms for handling different forms of ordering, invoicing, payments, refunds and credit arrangements.

- The final product had considerably more in the way of complex financial management features than we had originally envisaged, and offered sophisticated tools to allow for payments by credit card or invoice, splitting orders, creating partial refunds and credit notes and the production of PDF formatted invoices on demand.

Finally, a key need in the new system was the ability to analyse the membership data, a major shortcoming in the original system. We addressed this need by providing a number of tools:

- Logged actions. Most significant events in the system are stored in order to allow historical analysis, allowing administrators to understand, for example, how membership changes over a period of years.
- Built-in reports. Based on the real day-to-day business requirements of the organisation, we took a set of the most common analytical tasks and built them into executable reports, allowing the administrators to run and export analyses at will.
- Customisable menus. Where a user of the system selects options from drop-down lists, these options may change over a period of time. Accordingly we built forms allowing administrators to customised these sets of options. This ensures a lower dependency on support from the developer in the future.

Project delivery

From the outset we planned the project using an Agile approach. We used a variation on standard Agile development methodologies that was better suited to a small development team, picking out the most important features of the Agile approach:

- A very high degree of client involvement. We asked for and received an excellent level of collaboration with a senior member of the ELA management team working on the project team. It cannot be stressed too strongly that this collaboration is key to the success of an Agile project. Client involvement allows for rapid and flexible decision making and also ensures that the client is kept completely aware of the developing product.
- A single team for the project - no "Us" and "Them".
- Division of the project into small units of delivery called sprints. This project was delivered in seven two-week sprints.
- Each sprint would deliver working product. This gives the client confidence that progress is being made and allows them the earliest opportunity to test their ideas of what they want from the system. Finally, given that requirements inevitably change over the lifetime of the project, the earlier the client can make such changes the better. The capacity to handle changing requirements is at the core of Agile methodology.
- In place of a conventional (and usually ineffective) requirements specification we would create a set of prioritised tasks characterised by MoSCoW rules (Must Have, Should Have, Could Have, Won't Have Yet) summarised in a Foundation Document.
- Regular scrum meetings focusing on work packages delivered since the last scrum, work packages underway and any impediments to delivery.

Results

In a nutshell, the project was highly successful, delivering the product that the client wanted, on time and in budget. From the first sprint we consistently delivered working product - two weeks from the beginning of the project ELA were able to authenticate across two systems using a single sign-on, and carry out basic user administration tasks in a real working environment.

Like most projects, the development process uncovered new requirements and enabled some of the initial requirements to be demoted. This highlighted the huge benefit the Agile approach has over conventional waterfall project management: the process allows for both the identification of changing requirements and a response that allows those changes to be incorporated without compromising project delivery. It is also important to underline that having good client involvement here ensures that they know that they are in control and getting the system that they want.

Project collaboration

This project was a collaboration between Tellura Information Services Ltd and BR Enterprises. We have collaborated on a variety of projects over a period of more than a decade. Both are independent companies believing strongly in the values of high quality delivery and long-term client collaboration.

About Tellura

Tellura Information Services was set up in 2004 to provide information management, document management and website development services. Since then we have worked with clients of all sizes, in private and public sectors, in the UK and overseas.

To discover more about our services and how we might be able to help you to address your information management needs, please contact us:

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e contact@tellura.co.uk
w <http://www.tellura.co.uk>

Our monickr:



(scan it with your phone)

About BR Enterprises

BR Enterprises is the company name for Bronwen Reid, freelance web developer and consultant. Bronwen works on the underneath of websites, building web-based applications which are both functional and easy-to-use. She likes to work directly with clients, building one-off applications which are an exact fit for their needs.

Document control

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Version	1.3.20110806
Date issued	6 August 2011
Author	Dr Ian Piper, Tellura Information Services Ltd.