

Case Study: National Deaf Children's Society and FRED

All about NDCS

The National Deaf Children's Society (NDCS) is the leading charity dedicated to creating a world without barriers for deaf children and young people.

There are over 45,000 deaf children in the UK, 40% of whom also have additional needs. 90% of deaf children are born to hearing parents with little or no experience of deafness or knowledge of how to communicate with a deaf person.

The key to unlocking a deaf child's potential is the family unit. That is why families of deaf children must receive the full range of support and information to which they are entitled. This is not currently the case, but the NDCS is there to help make it happen.

NDCS is an organisation of families, parents and carers, providing emotional and practical support through a freephone helpline, a network of trained support workers, a wide range of other support services, and both electronic and paper publications.

As the leading provider of impartial information and individual advocacy on every aspect of childhood deafness, NDCS can help families with welfare rights and benefit claims, and advise on education choices, health, audiology and technology.

They also campaign for improvements in services aimed at families with deaf children, working with central and local government, health authorities, education professionals, social services, manufacturers and voluntary organisations.

It is a truly national organisation, with a head office in London, regional offices in Birmingham, Belfast, Cardiff and Glasgow, and home-based support workers covering every part of the UK.

Why FRED was needed

In 2005, NDCS found itself a victim of its own success. Ten years of growth had seen staff numbers quadruple and income increase more than tenfold. As is so often the case, the supporting infrastructure had been left behind by the rapid growth, and management were struggling to make decisions based on incomplete and unreliable information.

Multiple databases

Also typical of such situations, local managers and teams set up their own support systems to help them do their jobs. Although the fundraising side of the organisation had a centralised database which supported their

activities very well, the operational side did not: their central system was old, very slow to use, and lacked the functionality needed by the different departments which provided services to the NDCS clients. Consequently, there were at least 32 different local databases and spreadsheets in operation in the different support areas, all set up to meet their own specific local needs. Because data was held in this way, it was impossible for senior management to get a clear picture of what was actually happening overall in the operational side of the organisation, so strategic decision-making was often based on expert opinion, but backed up by inadequate or incomplete data.

It was clear the situation was unsustainable, so an independent consultant was recruited to head up a project team of representatives from all the operational services departments, tasked to put together a comprehensive specification of their requirements and find the best solution provider to implement a new system to support them.

"As well as the obvious considerations of technical ability and system functionality, an important consideration for us was the cultural fit between us and the chosen supplier. We wanted a very personal service from a supplier who was prepared to get to know us and the way we operate in every detail, and be very flexible in developing the system to best meet our needs both at the outset and also in the future, as we changed our approaches over time. Infoworks fitted that profile very well, and have lived up to our expectations."

A fresh approach

NDCS were open-minded about the type of solution they wanted – the team looked at straight packages, customisable packages, and completely bespoke solutions which would be developed from scratch. After evaluating the tenders submitted, and receiving presentations from shortlisted suppliers, they decided a bespoke solution provided by Infoworks would best suit their particular needs.

Why FRED?

The team believed it was important that the new system had a memorable name, to help integrate it into the organisation. The name FRED (supposedly standing for Friendly Relational Entities Database) was chosen by popular vote from a long list of suggestions, and very quickly became assimilated into “NDCS speak”.

How FRED was developed and implemented

PaperBuild

The system was developed from scratch, using Infoworks' PaperBuilding methodology. First, the system was designed on paper in a series of workshops with key users from all the affected departments, then the outputs from the workshops were fed into Infoworks' PaperBuildDB, a software tool developed by them which automatically generates a basic system from the requirements input to it. Then the more complex functionality was hand-coded by Infoworks developers.

“The PaperBuild methodology enabled the key users to fully understand what they needed to support their activities, and very quickly see what they were going to get. The very fast transition from paper sketches and lists to “real” screens on a computer was exciting and inspiring, and kept expectations very high throughout the development process.”

The PaperBuild workshops were held in August/September 2005, and the results were signed off by NDCS senior management in October 2005. The base system was then generated, and the hand-coding began. Modules were released for testing as they were developed, and the whole system was complete by January 2006.

Expert users

Comprehensive user acceptance testing was a key part of the implementation. This was done by the NDCS project team members, who thus became very familiar with the system. They were then classed as “expert users” on the system, responsible for local user support after implementation. They also acted as a focus for reporting any issues and further developments to the project leader, who was the single point of contact with Infoworks, thus avoiding confusion and replication.

Data set-up

Data set-up was a major challenge in the implementation. First, what can be classed as “static” data had to be set up – things like the values that appear in a drop-down list on certain fields, for users to select. Many of these were new to NDCS, so they had to be agreed by the relevant users/managers.

Second, the “dynamic” data had to be set up just before implementation – things like contact records or case

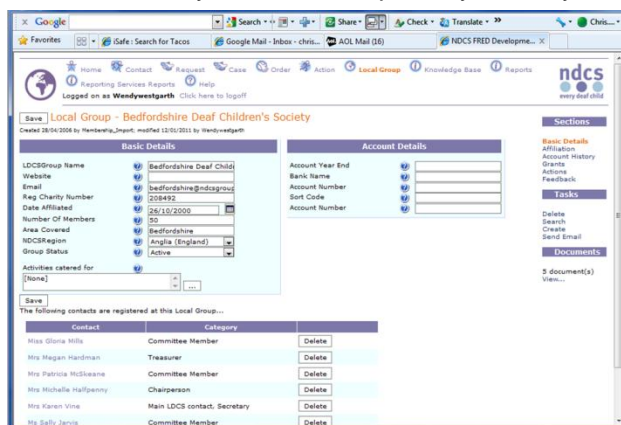
“If I want to know how many new cases have been logged today, or what percentage of requests don't get dealt with within 48 hours, I've got that at my finger tips. We can really feel the pulse of the organisation.”

records. This posed a particular problem, as data was held in so many different places, in different forms, and with massive duplication across the organisation.

The approach taken to deal with this was to identify particular people to be responsible for specific groups of data. Each of these people created standard spreadsheets into which “their”

data was collected, duplicates were identified and merged, and missing fields populated. The data from all these spreadsheets was then uploaded into the system just before implementation.

It was recognised that this approach would only produce a partially-clean database, so a second data cleaning exercise would be necessary after implementation. However, with all the data in one place, it was much easier to get it right.



Training

The NDCS project leader worked with the expert users to create training courses for all the different types of user, and user training took place as close to the implementation as possible. After training, users were able and encouraged to use a “play” version of the system, to retain their knowledge and get as familiar as possible with the system while they waited for it to go live.

On-going development

FRED was implemented in May 2006. Since then, it has been steadily updated with new functionality to support the ways NDCS has changed as an organisation – change which has largely been prompted and enabled by FRED, as the prime source of information about the services NDCS provides and the people it supports.

“FRED helps us to react quickly to changing needs - if we need to support a new activity, we don't have to twist a package to make it fit. We build the system around our needs.”

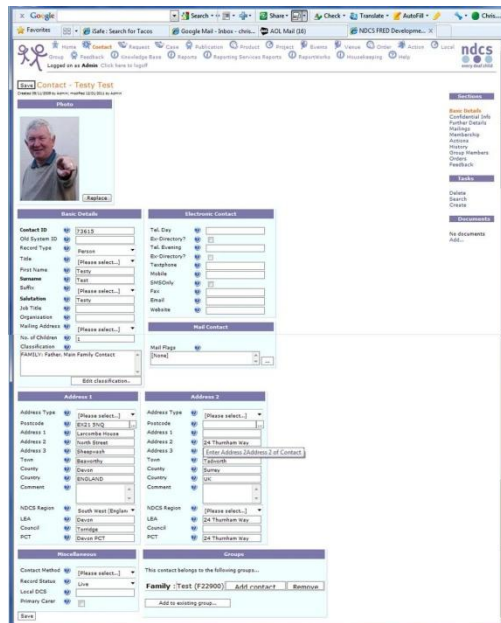
What FRED is

Browser-based

FRED is a big, beautiful, browser-based application suite (meaning it isn't installed on local PCs, it runs through their web browser). This is unusual for information systems in general, but normal for Infoworks.

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 – this means support and installation costs are also typically reduced by 80%.
- The system can be used from anywhere, as long as there is an internet connection. This particularly suits a geographically-dispersed organisation like NDCS, particularly as many regional staff work from home.
- Investment in hardware is concentrated at the centre, and the database-webserver-browser model is much more efficient than the traditional client-server model.



Look and feel

FRED's appearance – like that of any good website - is completely controlled by “cascading stylesheets” (CSS), so although there are many parts to the system they all have the same look and feel. Although FRED is actually a one-off bespoke suite of software written just for NDCS, it has the familiar, reassuring feel of a package.

Users just see the bits of the application they have the security rights to see. So, for admin level users, FRED is a very big system, but for temporary staff entering new requests or member details it's quite small.

Very user-friendly

Simple menus and hyperlinks make it very quick and easy to navigate round the system – a single click can take you to any of the last ten records you looked at in a module. When you are in a particular module, you can jump straight to other associated records - for example, if you are looking at a particular contact, a single click can take you to the cases they are involved with, or the events they attended or are due to attend, or the publications they receive, or the groups they belong to, etc.

Every field and every screen has an online help text pop-up associated with it, which is written and maintained by the expert users. It is a testimony to the user-friendliness of FRED that hardly any of these help text pop-ups have anything in them!

Technical details

FRED is an n-tier asp.net over SQL Server application integrated with Report Services. 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 over 200 tables and 2000 stored procedures.

What FRED does

FRED is the prime support system for the operational services side of NDCS – it helps them do what they exist to do. It does this by capturing and directing information around the organisation, and providing reliable analytical management information to facilitate operational and strategic decision-making.

Contacts, groups, and membership management

NDCS exists to support deaf children and their families, so the contact module is at the heart of FRED. There are almost 80,000 contacts on the system, all categorised as deaf children, family members, organisations, professionals, volunteers, trustees, staff, and many more. A single contact can belong to one or many of these categories – for example, a parent of a deaf child may also be a professional working in the field, and a volunteer.

Also, groups of contacts can be set up for any reason (family groups, organisation groups, special interest groups, etc.), and contacts can belong to as many different groups as required.

NDCS don't have clients, they have members, and, like contacts, there are different categories of members, to facilitate better, pertinent communication – for example, parents of a deaf child will want a different approach to a professional working in the field, or a volunteer.

“Some of our managers were worried about going for a bespoke system, but they were soon won over. It may seem a luxury to have a system built just for you, but I can't think of a better way to really get an organisation moving forward. Progress in these last five years has been stunning.”

FRED manages all of this complexity through flexible, data-based categorisation, which enables the users to tailor everything to the needs of a particular type of contact in a particular situation, so they can adopt a truly individual approach to every person they deal with, whilst still maintaining the ability to analyse the data in meaningful ways.

In the contact module it is also possible to do a simple search for a list of particular people – for example, volunteers, or parents of

deaf children - and then click a single button to automatically add that list of contacts to a mailing list, or send them an email, or send them a text. This makes targeted communication with lots of contacts very easy, fast, and effective.

Helpline

NDCS receive about a hundred calls a day on their helpline, all of which need to be recorded, managed, and, usually, progressed for further action – for example, sending out information or publications, or referring details to a caseworker for more in-depth or hands-on assistance.

The helpline operators use FRED to capture all the relevant details and automatically progress requests further as required.

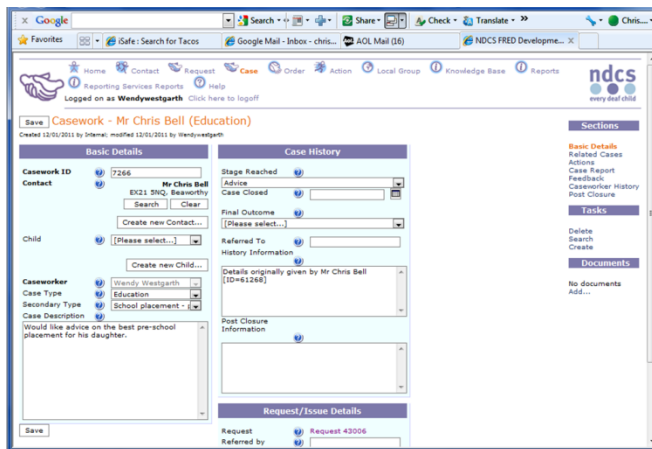
For example, if a caseworker is needed, the request is converted into a case record which appears on the caseworker's home screen as a new case requiring action, with all the contact and issue details already populated for them.

“FRED has helped us to transform the quality of our overall operations. NDCS is now much more effective and efficient, a pretty tight ship.”

Case management

NDCS provide in-depth advice and assistance on all aspects of childhood deafness, so the cases they manage range widely in scope and subject matter, from helping families communicate with a deaf child, to advising on Disability Living Allowance appeals, or education decisions or appeals, or providing direct support to young people.

FRED is used to capture all the information about every case, so it is both the primary work tool used by caseworkers and the main source of information to measure the effectiveness of the service NDCS provides and the ways in which it should develop in the future.



Events

NDCS run a wide variety of events, all of which are set up and controlled on FRED. Events can be broken up into specific elements, and each element can be managed separately. This includes bookings, attendee management, volunteer management, special requirements, and post-event feedback – everything needed to make an event successful, and provide information on improvements for future events.

The screenshot shows the NDCS FRED system interface. The main content area is titled "Event - Communication Skills Workshop - London (Volunteer Training)". It is divided into several sections:

- Basic Details:** Event Title (Communication Skills Workshop), Event Code (333), Event Training Category (Volunteer event), Start Date (24/02/2007), End Date (24/02/2007), Start Time (11am), End Time (5pm), Event Organiser (Rachel Xerr), Event Capacity (25), Volunteers Needed (0), Interpreters Needed (0), Event Owner (No Staff selected), Event Primary Contact (No Contact selected).
- Location:** Venue Venue (No Venue selected), Accommodation Venue (No Venue selected).
- Elements:** A table showing the breakdown of the event into elements:

Name	Capacity	Number Booked
Participants	15	14
Staff	5	2
Participants dropped out	10	3

Publications

All NDCS publications are stock controlled on FRED, and all publication orders are processed through FRED.

Technology test drive

NDCS members can borrow equipment to “test drive” at home before they buy it. FRED controls this whole process - stock control, issuing equipment, prompting returns, and managing any repairs.

LDCS management

There are well over a hundred Local Deaf Children’s Societies around the country. FRED holds records on them all, and facilitates communication between them and NDCS.

The Listening Bus

NDCS operate a Listening Bus, which visits schools and other locations around the country, raising awareness, providing information, and showcasing different technology. All the visits are controlled on FRED, including post-visit feedback.

Project management

Like a lot of other organisations, NDCS has a lot of individual projects running at any one time, all of which are completely different in scope and subject matter.

FRED has a simple project management module, designed to be very flexible and customisable, so it can be used to manage just about any project. This means all the projects are controlled in one place, so they are all visible to management, and can be reported on easily. More organisations should have this capability!

“It’s hard now to imagine how we managed without FRED. Before, there was no clear overview, and everyone had their own way of doing things. FRED has been a truly unifying influence - what was a bit anarchic is now organised. We’ve got our direction back.”

Knowledge Base

There is a simple knowledge base module on FRED, searchable by key words, which acts as a repository for information which may be of general use in the organisation.

Management information/reporting

Good management information is obviously key to good decision-making, and it has to be timely and pertinent. Consequently, there are four different ways to pull management information from FRED:

- Every module has a simple search screen, where users can filter records by putting values into the fields shown. The search then displays a list of the qualifying records which can be viewed on screen, or downloaded to a spreadsheet for further manipulation, or they can “drill down” into any one of the records listed.
- Infoworks have written standard reports which are “built in” to the system, and can be run any time.
- Expert users can design their own reports in ReportWorks, the reporting tool which was integrated into FRED when the system was designed by Infoworks. This produces listings which can be viewed on screen, printed, or exported to a spreadsheet. All these reports can be saved and “promoted” to the main reports menu, where they can be run by any user with the appropriate access rights.

“Having good, comprehensive management information highlights what you’re not doing, as well as what you’re doing. FRED shines a light onto where we need to go next.”

- NDCS ICT staff can produce reports in Reporting Services, which they can also “promote” to the main menu, where they can be run by any user with the appropriate access rights. These reports can be very complex, and can display results as graphics without the need to export to a spreadsheet.

Using these four methods, any information can be pulled from FRED at any time, in the most appropriate way, from a quick listing to a publication-ready PDF.

Actions

A key way in which FRED facilitates day-to-day operations at NDCS is through the use of actions. Every module has functionality built in which enables a user to attach actions to a record – a contact, an event, a case, etc. These actions can be a reminder to themselves, or an action they assign to someone else.

All actions are listed on the relevant user’s home page, so FRED acts as a prompt for things that need attention. If the action relates to an activity that is managed on FRED, the user can go straight to the relevant place in a single click.

FRED isn’t just about managing information, it also helps facilitate and manage workflow.

“FRED didn't make NDCS successful, but it has facilitated our success - it just wouldn't have happened with the other glossy packaged solutions we were almost tempted by.”