USER EXPERIENCE AND TESTING
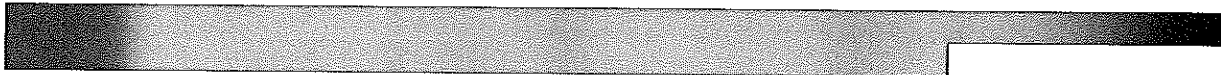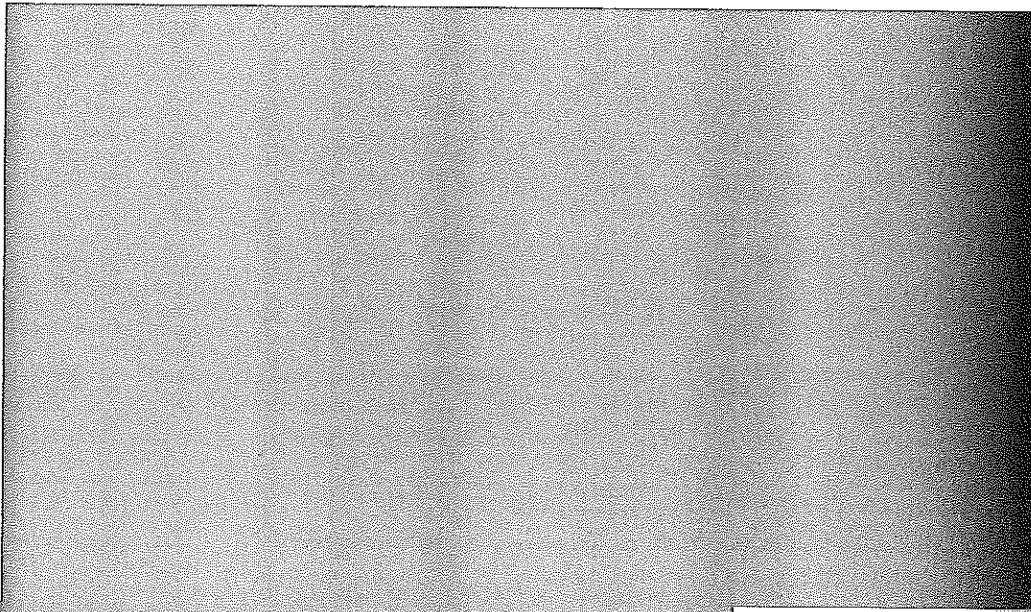
We deliver UX and testing for clients, e.g. FSS, QMS and Scottish Government.

Our methodology:

a website should provide useful solutions to the user's enquiry at the right time/place
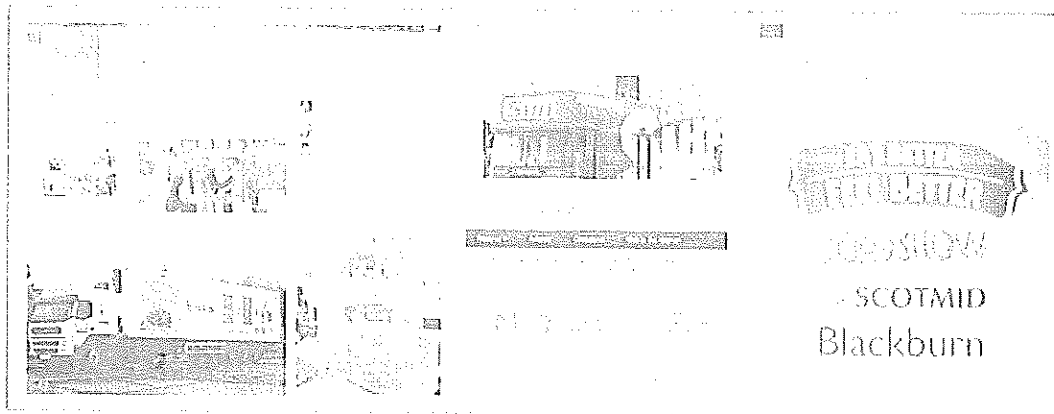
PARTNERSHIP

Our Union Connect division is one of Scotland's leading partnership specialists. We were responsible for the Scottish Government's first-ever marketing partnership in 2007, and since the have worked continuously across PSB topics.
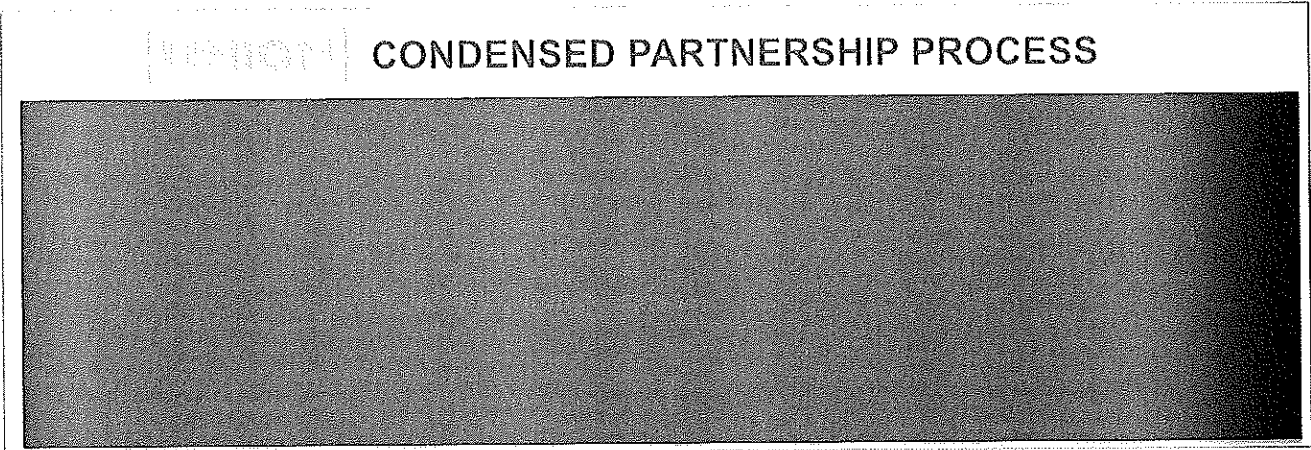

Eat Better Feel Better partnerships delivered ROI of £27:1.

A small selection of our database of partner contacts.

Our core process is tailored to partnership marketing:

CONDENSED PARTNERSHIP PROCESS

The Union's condensed partnership process.

[1,782]

Question 2.2.4 (Weighting – 25%) (Word Count 1800)

Website Design and Development Services can include, but not be limited to, the following services:

- *digital transformation of existing services;*
- *web based application development;*
- *mobile application design and development;*
- *desktop application design and development.*

Please provide details of how your organisation will deliver website design and build services paying particular attention to the following:

- *website development across multi-platform including standard desktop and mobile operating systems;*
- *how web based applications will comply with World Web Consortium (W3C) Web Accessibility Initiative Standards to WCAG 2.0 level AA (or any equivalents) and any future revisions;*
- *your organisations ability to use style sheets (e.g. CSS) and coding standards using a formal grammar, (e.g. XHTML)*
- *how web based systems will be viewed using all major web site browsers including, but not limited to, Internet Explorer, Chrome, Safari, Firefox, Opera and Edge;*
- *your organisations use and experience of Open Standards and Open Source solutions;*
- *how your organisation would deliver and implement assistive technology requirements.*

Tenderers must also provide details of any services which will be carried out by Sub-Contractors in relation to Website Design and Build services.

2.2.4. WEBSITE DESIGN AND DEVELOPMENT SERVICES

INTRODUCTION

The Union uses differing models of project management/web development depending upon the type and scale of the project. We use ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ in our project management processes.
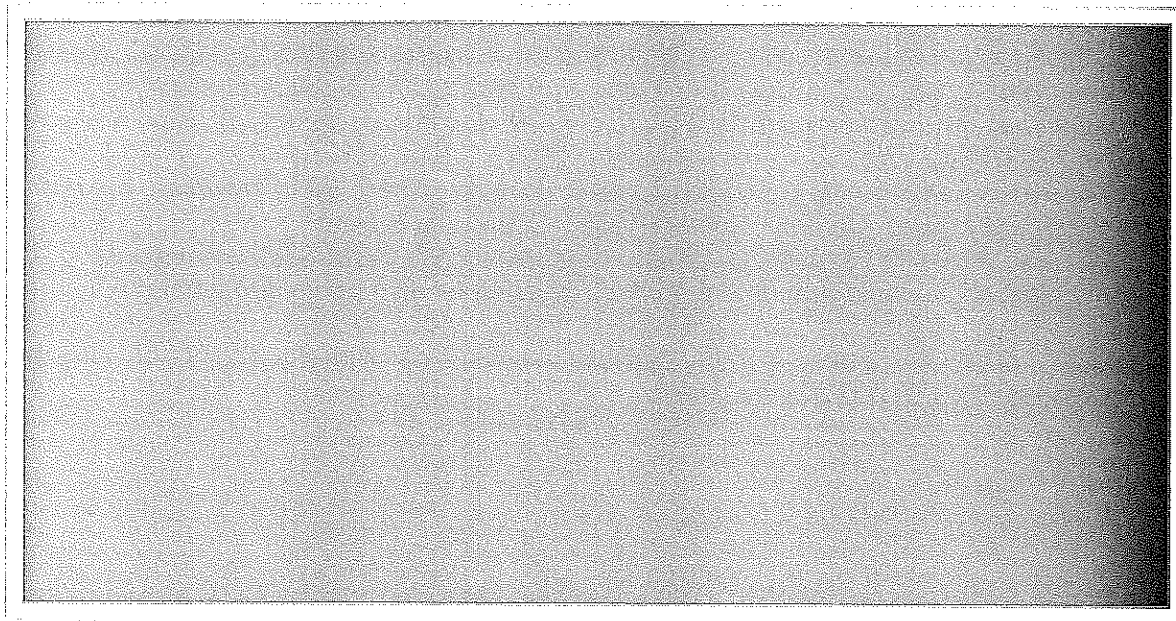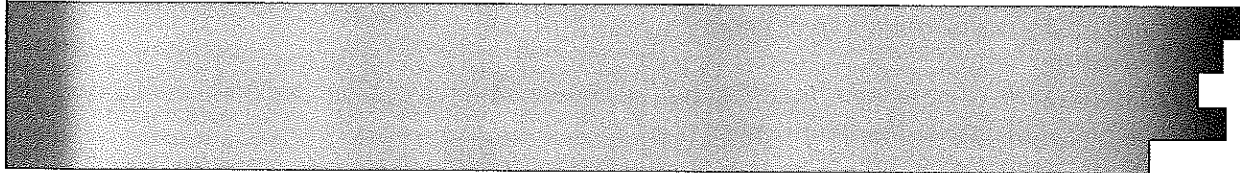
Our Account Managers are trained in these methodologies, either through official certification (or training for certification) for traditional Waterfall projects, and SCRUM/AgilePM certification for Agile projects.

PRINCE2 is another approach, for which we have certified managers ▮▮▮▮▮▮▮▮▮▮▮ ▮▮▮▮ This may be used for large projects.

Our digital design processes create all templates in industry standard programs from the Adobe Creative Suite - Photoshop, Illustrator, After Effects, Premiere, InDesign and Lightroom. All Designers are proficient in their use and in the specific design requirements inherent to web, mobile, app, and desktop app development, integrating closely with Developers and Project Managers.

DIGITAL TRANSFORMATION

For larger digital transformation projects, i.e. updating and improving current and legacy Government service design projects, we favour an Agile or Hybrid approach. The core focus of these methodologies is to provide continuous improvement of the product, team interaction and input, and scope flexibility in order to delivery a quality solution. This is particularly important when

working on Government projects, as one of the three key elements of a project (delivery date/budget/scope) is often unalterable.

User-centred design is essential for transformative projects. A process of constant iteration and presentation of different prototypes and/or minimum-viable-products is necessary to ensure that the project is as useful to as wide a selection of the Scottish public as possible.
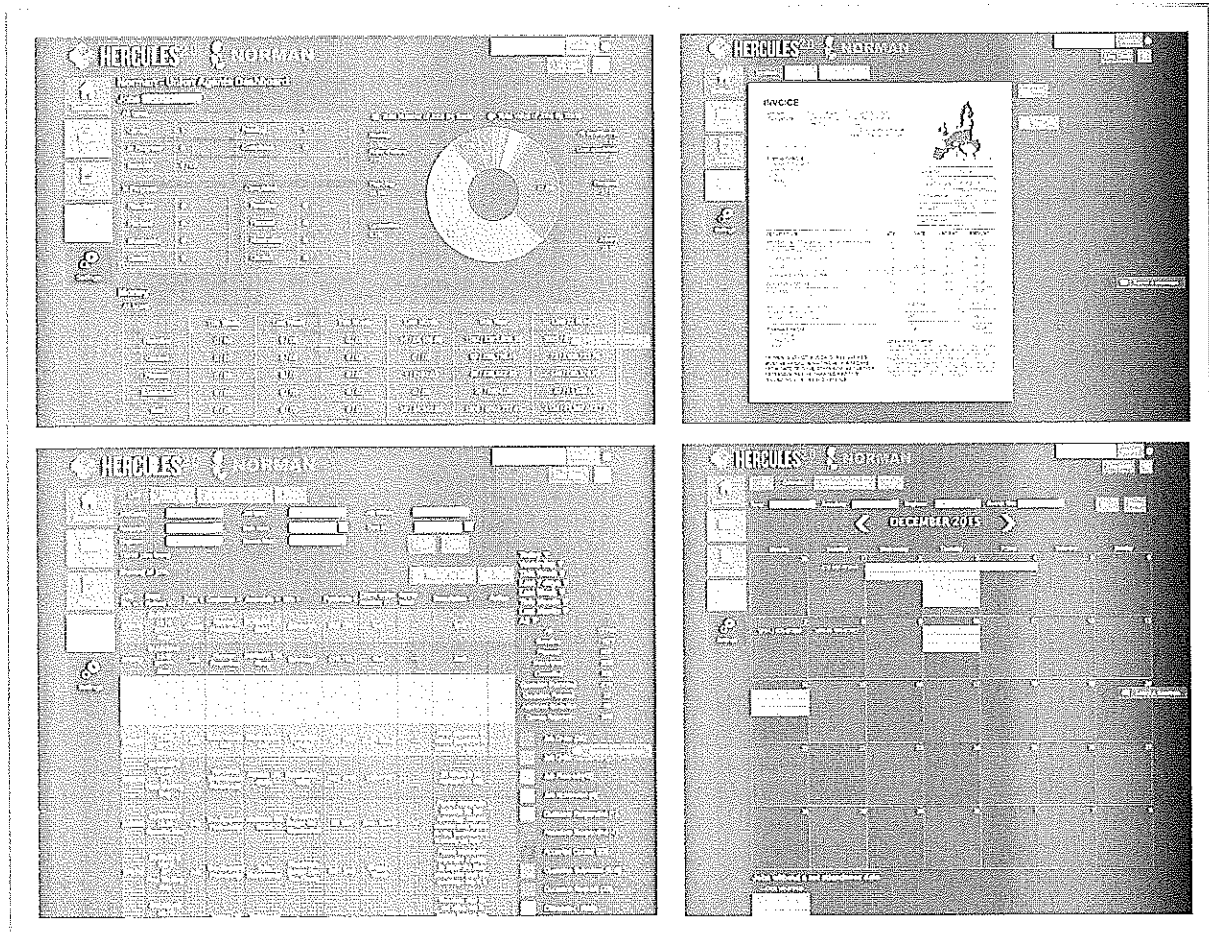

Union transformation project for Norman. Company project management/financial operation given a web interface for staff/suppliers/clients.

We have wide experience of digital transformation projects working with clients such as Scottish Athletics (CRM database interface); Norman Europe (facilities management and finance site); and Homeless Word Cup (tournament/membership/fundraising).
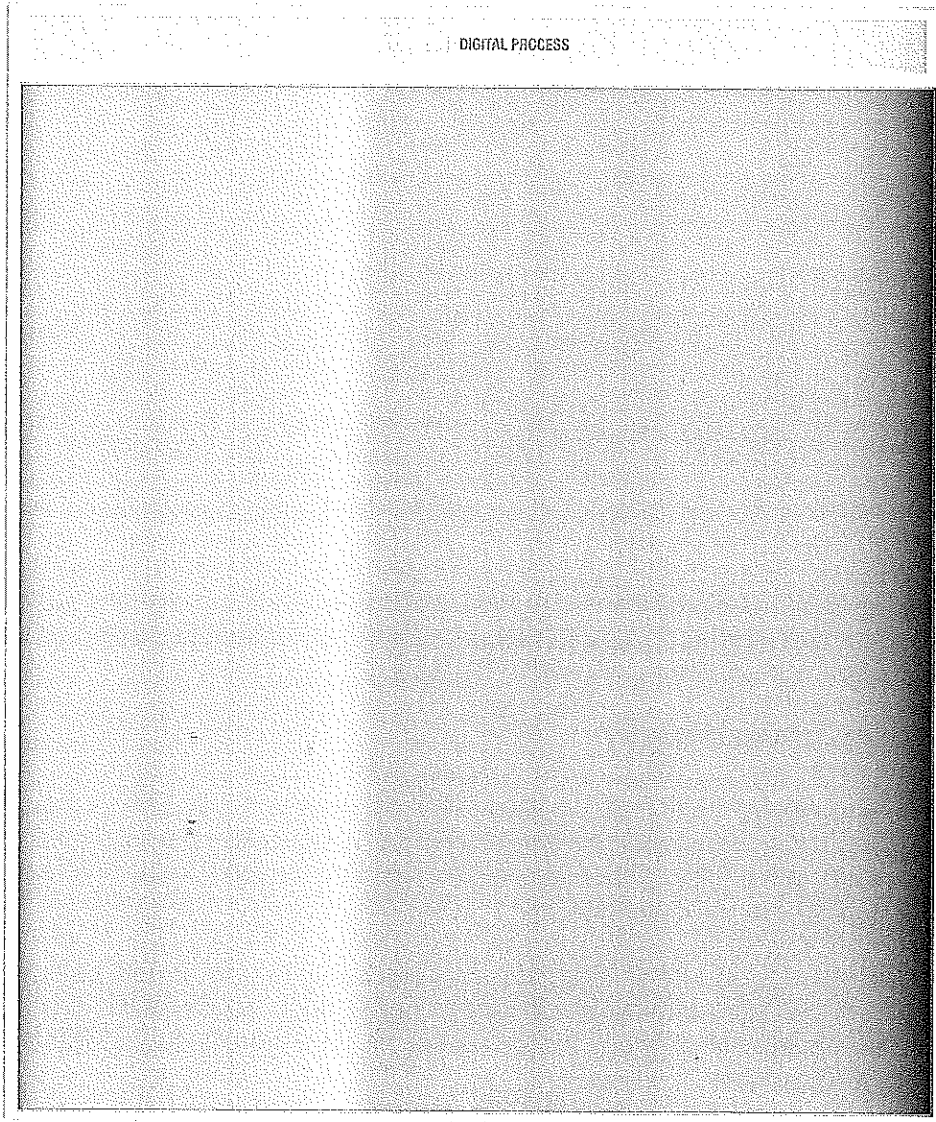
WEB APPLICATION DEVELOPMENT

To provide the best maintainability and the least technical debt (extra cost/work incurred in the longer-term by using short-term solutions) we provide web application development in an open source framework, using PHP and either Drupal/WordPress and associated PHP frameworks such as Laravel.

We are able to provide any type of web application build, ranging from simple calculators to complex database-driven sites with restrictive and complex data protection requirements interacting with many parts of the public sector – such as the Organ Donation Scotland site we currently manage and maintain.
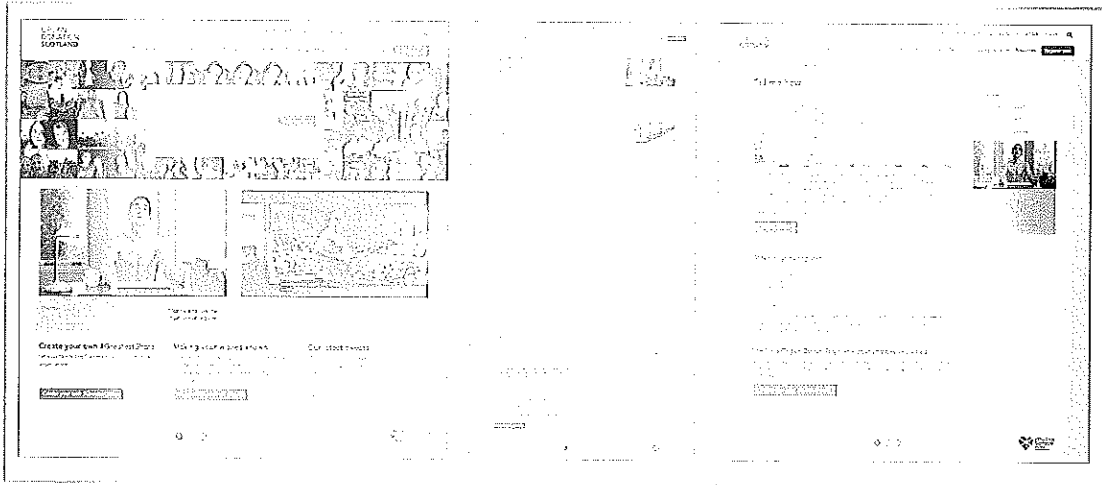
We manage the Organ Donation Scotland site.

DIGITAL PROCESS
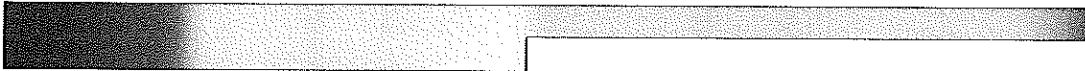
To reduce code bloat and improve speed/usability, all of our code is created by hand from scratch rather than using templated or "bundled" frameworks such as Bootstrap.

MOBILE APPLICATION DEVELOPMENT

When creating mobile applications, we design/create apps using a cross-platform mobile application environment such as SAP or Sencha. This saves significantly on costs - rather than creating multiple distinct applications and codebases, we can create apps which require less translation from Android, iOS and Windows mobile.
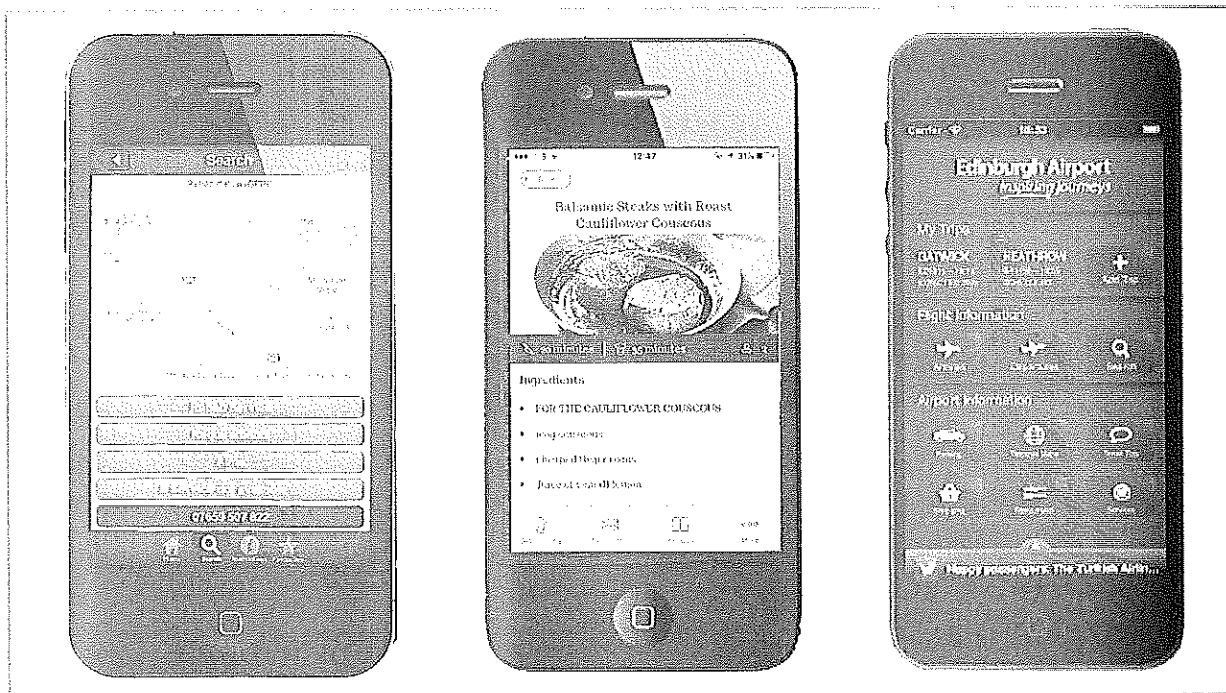
Some mobile apps developed by The Union: NHS GG&C, QMS, Edinburgh Airport.

We have strong experience in mobile app design, development and release on all major platforms. Our work includes projects such the flight information app for Edinburgh Airport, the QMS 'Perfect Steak and Roasts' app and the NHS GG&C Community Health app.

DESKTOP APPLICATION DEVELOPMENT

We create desktop applications and other functionality-based applications – such as web scripts for automating tasks, spreadsheets with macros for data processing, and fully-featured desktop applications. We use languages such as Java, C, JavaScript, PHP depending upon requirements, but always use to open source software.

We prefer using a cloud-based system, so that there are as few barriers as possible to installs; many Government services have strict IT requirements, thus simple installs and maintenance are paramount.

RESPONSIVE AND MULTI-PLATFORM DESIGN

Union builds websites, products and apps with a mobile-first approach. Mobile traffic has now overtaken desktop – therefore, building usable, lightning-fast, accessible mobile optimised sites is critical for the public sector.

We think about how the site will work on *mobile first*, before considering desktop designs/wireframes for web applications. This is especially important for interacting with harder-to-reach C2DE demographics who may not have access to a standard desktop.
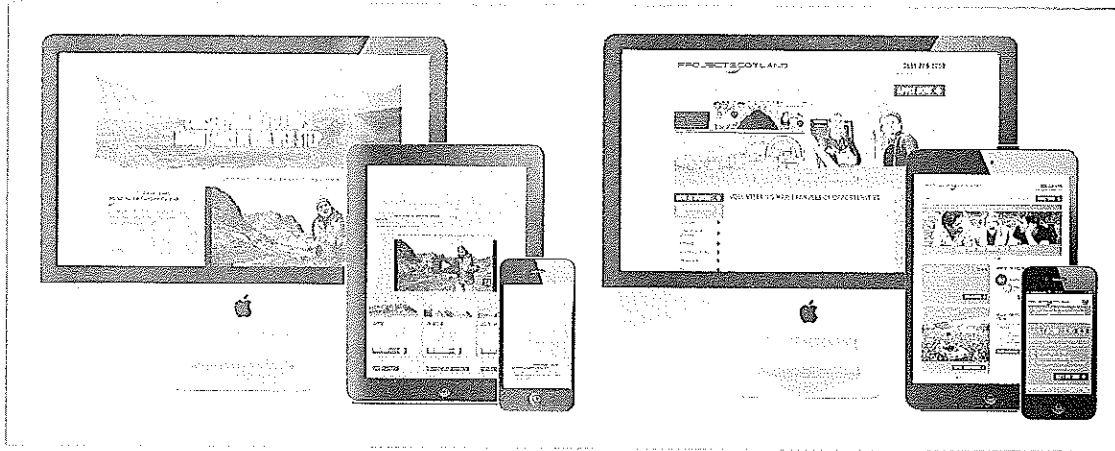
Two examples of our responsive design: National Trust for Scotland and ProjectScotland.

What this means is that the on a low-end broadband connection or 3G phone anything we build should load in under 2 seconds, ensuring that the users do not bounce off the page/application.

Speed is also critical for usability, accessibility, and SEO purposes. We design for desktop, tablet, and mobile browsers, and we test performance with online tools such as Browserstack as well as with physical devices and operating systems.
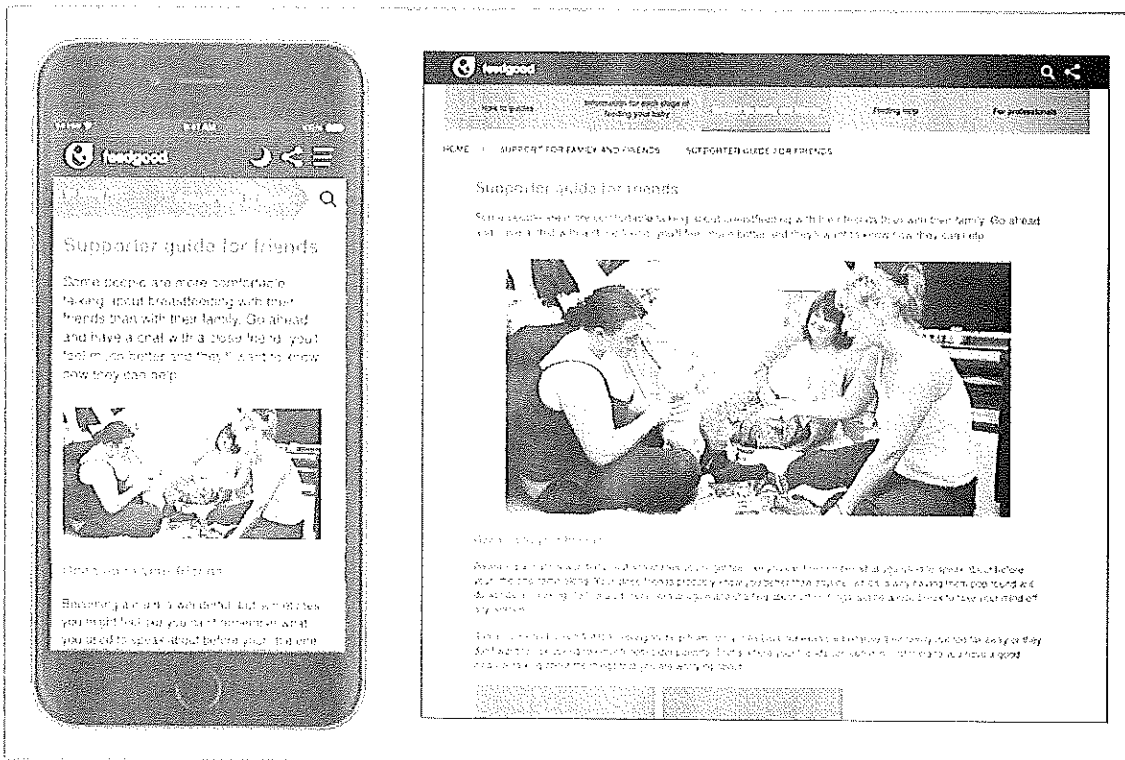
Example of mobile-first design for www.feedgood.scot.

We ensure our designs operate across every common screen resolution, desktop or mobile OS.

New Scotch Kitchen website for QMS is fully responsive.

W3C ACCESSIBILITY COMPLIANCE

We build all websites/web applications to meet standards outlined in WCAG 2.0 level AA. We meet level A and level AA level accessibility standards across all builds. If necessary, we build a site to AAA standards for users with extra needs.

All Developers are trained in accessibility standards using a checklist to reduce the need for revisions later in the project. We ensure that colour palettes meet accessibility standards (i.e. contrast/readability guidelines) during design phase.

We audit all current sites against any new guidelines when there is a major update of accessibility guidelines.

STYLESHEETS AND CODING STANDARDS USING FORMAL GRAMMAR

We use the most up to date HTML 5 and CSS 3 standards for markup, adhering strictly to them, with fallbacks to previous standards such as HTML 4.01 Transitional or XHTML 1.0 where needed.
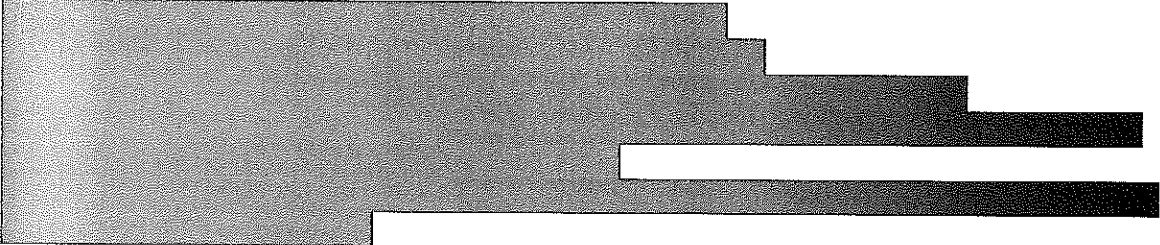
We ensure markup complies strictly to W3C guidelines by using online testing such as https://validator.w3.org/. However, where suggested changes conflicts with usability, accessibility or speed, we always prefer the solution which puts the user first.

RESPONSIVENESS AND BROWSER TESTING

We perform functional, system integration, and non-functional (UI) tests on all our projects. This encompasses browser compatibility testing (*Internet Explorer, Chrome, Safari, Firefox, Opera and Edge*) and performance testing, which ensures sites are compatible with all devices and browsers as well checking that the output is responsive and stable.

We use unscripted exploratory tests to uncover defects that may otherwise not be detected, and this is carried out by users, clients, and Union staff.

We test all of our websites/apps across the following

- ☐
- ☐
- ☐
- ☐

- ☐

We test these resolutions across a range of OS on

- ☐
- ☐
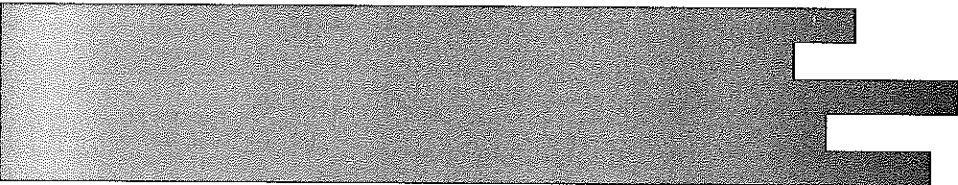- ☐
- ☐
- ☐

This accounts for over 98% of the current OS landscape. If required due to legacy Government/public sector requirements, we test and build any website or app to work with deprecated/legacy versions of Internet Explorer, Windows, or other browsers or operating systems.

DEVELOPING FOR OPEN STANDARD AND OPEN SOURCE SOLUTIONS

Union is familiar and conversant with the relevant frameworks laid out in the Digital First Service Standard (http://resources.mygov.scot/standards/digital-first/) and High Level Operating Framework (http://www.gov.scot/Topics/Economy/digital/digitalservices/HLOF). We meet these standards set out when working on all public sector work.

We train all relevant new starff on this (in bi-yearly workshops) during their induction period, and provide annual refresher training to all staff.
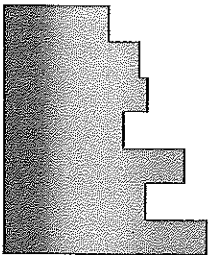
as necessary. We do not use any closed source or proprietary solutions, in line with the Digital First Service Standard.

ASSISTIVE TECHNOLOGY REQUIREMENTS

When developing for any public-facing web service, we ensure that at minimum the site is suitable for both screen readers, screen magnifiers and text-to-speech services. This functions as part and parcel of WCAG 2.0 AA accessibility work.

The Union has consulted with RNIB and other stakeholders on accessibility of digital resources for our work on Smarter Scotland: Digital Participation. We are familiar with various alternative and augmentative communications (AAC) requirements through our marketing strategy work for the NHS Education for Scotland AAC project.

For any complex requirements, we would consult directly with users needing assistive technology requirements. For instance, we have recently worked with Euan's Guide, a website and app specifically dedicated to assistive technologies and accessible spaces for disabled people. We ensure that differently abled users are engaged as stakeholders throughout the entire process.

Example of The Union's work on the Digital Participation campaign.

We continually keep astride of developments in the field, working with other stakeholders and HCI (human computer interaction) specialists as appropriate, to ensure we always deliver the best possible service for users with extra needs.

OUTSOURCING

For continual control, we don't outsource Government/public sector sites with complex data protection requirements.

We outsource to

[1,798]

Question 2.2.5 (Weighting - 10%) (Word Count 500)

Please provide details of how your organisation will deliver website testing, paying particular attention to the following:

• details of how you will provide User Experience (UX) testing, providing information on user interaction with the application interface;

• details of how you will provide System Performance testing, to ensure the application is fit for purpose and meets the original requirements specification;

• details of how you will ensure that the application meets appropriate security requirements and provide assurance on the confidentiality, integrity and availability of the application and its data.

Tenderers must also provide details of any services which will be carried out by Sub-Contractors in relation to any of the website testing services.

2.2.5. WEBSITE TESTING

INTRODUCTION

We undertake development testing throughout the build process; and quality assurance testing at the end of the phase for Waterfall projects, and at the end of every sprint for Agile projects.

The product first undergoes internal User Acceptance Testing, which includes functional and non-functional tests, system integration tests, performance testing, and browser compatibility testing. Once this stage is completed and internal issues raised are fixed, this is followed by Client Acceptance Testing.

We also offer testing through our ███████████████████████████; this is especially helpful for clients with international audiences (e.g. VisitScotland, SDI, QMS.) Issues are tracked ██

The Kanban board allows all stakeholders access to the status of every issue with an easy and intuitive user interface.

UX TESTING

User Experience (UX) testing and UX design projects are delivered ████████████ ████████████████████████ We have experience in usability testing/audits/UX process.

Food Standards Scotland   QMS   LENS SELF STORAGE   DOLLAR   BUCCLEUCH   children's hearings scotland

Clients who have used our UX testing service.

At the start of projects we run workshops to understand organisational needs and the desired goals for users of their product. Later in the project ██████████████████ █████████████ we engage users with the following process:
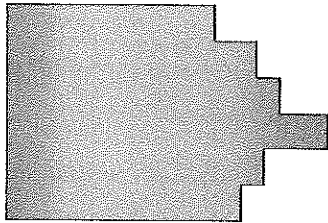
SYSTEM PERFORMANCE TESTING

To ensure applications are fit for purpose and meet original requirements specifications, we undertake performance testing using tools such as Loader (http://loader.io.) This helps understand system parameters including responsiveness/stability under various workloads (site traffic).

Performance tests applied:
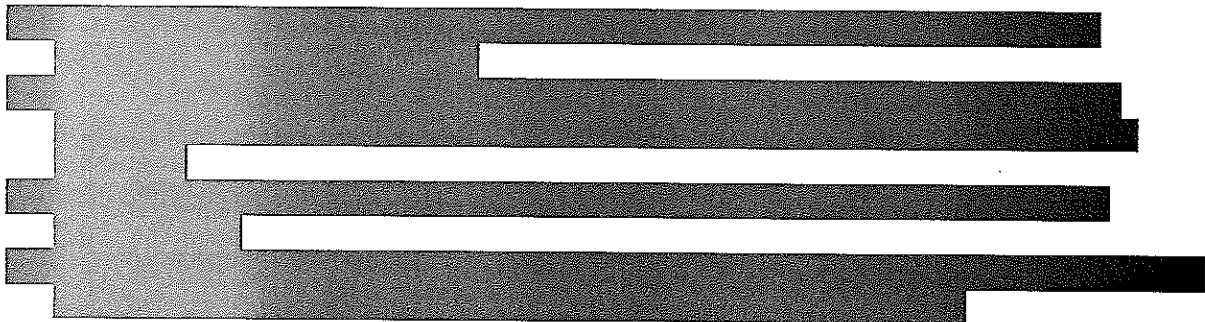
Our Technical Director, ████████ has final approval of testing.

SECURITY REQUIREMENTS AND TESTING

We patch all the software ███████████████████████████████ as and when new releases are available. Server software on Rackspace is automatically updated, and AWS servers are set to auto-apply security updates.

We comply fully with The Data Protection Act 1998 and keep monthly back-ups of all databases and sites. We use automated tools to comply with PCI DSS compliance.

For continued control over security during testing, we never use sub-contractors at this stage.

[500]

Question 2.2.6 (weighting - 10%) (Word Count 500)

(Revised question from Circular Advice Note 2)

Please describe your organisations approach on the provision of the following services by:-

Support & Maintenance: providing details on how your organisation will provide support services in relation to the core development, including performance analytics and management reporting;

Data Migration: providing details on your organisations ability to extract data from other systems including any common data formats used;

Security Services: providing details on how your organisation will provide security services directly related to digital applications, (e.g. secure website certificates, secure data storage and secure data transfer protocols).

Hosting Services: Providing details on how your organisation will provide website hosting services, (NB: at present Scottish Government have their own Hosting arrangement in place) paying particular attention to the following:

- *security;*
- *networking facilities;*
- *documentation standards;*
- *compliance with ISO 27017 or equivalent;*
- *government security classifications;*

Tenderers must also provide details of any services which will be carried out by Sub-Contractors in delivering these service requirements.

2.2.6. HOSTING SERVICES

SUPPORT AND MAINTENANCE

We provide 24/7/365 support/maintenance with a rota of three Directors on call, as well as group email for key staff. Support is instigated via mobile phone/email. Response guaranteed within 30 minutes.

Rackspace provides a fully managed service for our dedicated server:

- Server monitoring/active response
- 24/7/365 telephone and ticket support from engineers
- 14 day backup (weekly full / daily incremental)
- Regular update of operating system
- 100% Network Uptime guarantee.

We provide managed support for AWS servers through Rackspace.

Passwords/account information stored in an AES-compliant encrypted database accessible via individual user accounts, which can be locked down to specific entities.

Individuals' identifiable information is encrypted in a compatible format.

PERFORMANCE/MANAGEMENT REPORTING

Servers are monitored for service availability, hardware faults and vulnerabilities. Two external server monitors regularly check for service availability for each of the sites we host, the primary monitor is displayed on a projector in the developer team's room and automated notifications are sent both via email and via our messaging system so any event can be investigated immediately.

DATA MIGRATION

To migrate like-for-like installations, we export the database/archive the related assets.

Depending on type of data, we migrate using:

- CSV – 1D/2D data
- JSON/XML - structured data

HOSTING SERVICES

Demonstrating our experience in hosting, we host ███████

Some of the ███████ *hosted.*

To provide secure shared hosting, we use Rackspace for our dedicated hypervisor server, running five virtual servers. For high traffic/segregated sites we use Amazon AWS.

SECURITY

Servers are protected by a firewall, which sits between servers/the outside world and controls flow of network traffic, allowing us to determine which connection types to allow. Delivery of secure hosting services involves the following:

- Rackspace - uses physical Cisco ASA firewall administered via securecontrol panel - locked to specific users
- Rackspace certified to security standard ISO 27001
- Rackspace provide proactive fully managed intrusion detection service
- AWS - provides "security groups" which function as firewall
- Block SSH, FTP and admin control panels from anyone other than Union and authorised clients/third parties
- Servers patched against latest known vulnerabilities through automatic security updates

NETWORKING FACILITIES

Rackspace provide:

- 10Gigabits/second network speeds, load balancing, advanced IDS/WAF appliances from AlertLogic/Imperva
- High-performance bandwidth, ensuring fast and stable network traffic
- Nine network providers, for multiple redundancies which will help ensure server availability
- Multiply redundant internet lines

DOCUMENTATION STANDARDS

Specification is provided that describes aspects of the product and will ensure that applications achieve the desired tasks. It also aids future developers - conveying the intent of features/code.

For server management/deployment, our process document describes steps to manage these securely.

ISO 27001 & ISO 27017

Rackspace and AWS certified for ISO 27001 and AWS for ISO 27017.

We use Rackspace for dedicated servers and AWS for cloud hosting.

GOVERNMENT SECURITY CLASSIFICATIONS

All classified official information provided by PSBs will be handled/processed in conformance with our Corporate Information Security Policy.

SUB-CONTRACTORS

Contractor	Services	Relationship (Years)
Rackspace	Hosting System monitoring Automated backups Backup performance & reporting Predictive hardware failure monitoring Online ticketing	■
AWS	Hosting	■

[500]