Procuring Bilingual Software

For many organisations that deliver services to citizens in Wales, procuring a software solution requires that it is bilingual. This presents challenges in how to define this requirement and ensure it doesn't deter otherwise capable suppliers.

This guide will provide advice on how to express this requirement in a clear, unambiguous and measurable manner with approaches to encourage and facilitate suppliers who might otherwise 'qualify out' if their solution currently lacks this capability.

The Challenges

When procuring software or a website where bilingual capabilities are needed, this is often done in a 'loose' manner. For example, identifying that legislation exists, or that the system needs to be 'fully bilingual' and leaving it to the supplier to respond with a description of how their solution might comply.

There are usually two main motivators for this:

1. A belief that the market in general and some particularly desirable suppliers might struggle to meet the full set of requirements. Specifying detailed requirements might lead a supplier to consider that their solution would fall short and decide not to bid.
2. Uncertainty about what exactly is required and how to specify it.

There are issues with this approach:

- Suppliers who don't have a sufficient capability or that don't fully understand what is really needed can interpret a minimal specification, proposing a 'token' solution;
- Suppliers that do have an effective and complete solution aren't able to differentiate themselves in a quantifiable manner;
- Suppliers with a solution that only needs minor improvements are unable to identify and quantify these;
- A solution deficient in its bilingual capability leaves the buyer in an awkward situation where they are unable to use a non-compliant solution (or carry the risk of doing so), yet unable to effectively dispute this with the supplier (who has delivered the solution according to the accepted proposal).

There is a straightforward solution to this: specify the detailed requirements that need to be met in order to deliver the expected (compliant) bilingual capability.

But what about the concern that in doing so, otherwise competent suppliers, and potentially otherwise preferred suppliers, are discouraged from bidding?

In this guide we'll present and propose solutions to these two challenges:

1. How to specify bilingual requirements that are clear, unambiguous and measurable.
2. How to do so in a manner that doesn't discourage otherwise competent suppliers.

Interceptor® Solutions Ltd
Enabling **Languages**

Specifying the Requirement

Improving outcomes when procuring software with a bilingual capability can invariably be achieved simply by providing a detailed specification of the requirements.

This will have been done for other areas of functionality, so that the supplier understands and commits to deliver exactly what is needed.

A specific requirement produces a specific response that can be measured when making the purchasing decision and validated when the solution is delivered.

Benefits of this:

- It details exactly what is required in an objective and measurable manner that allows proposals to be scored and compared;
- Acceptance criteria for the delivered solution are clearly and unambiguously stated;
- Many suppliers will already have, or can easily implement, an effective solution for the requirements. Providing clarity over exactly what is required will increase their likelihood to bid and reduce costs related to risk over uncertain expectations;
- It shares an understanding of what we mean by a 'bilingual' solution with the supplier if they lack the context and understanding of what is required to deliver bilingual capabilities but are entirely capable of meeting requirements when they're clear.

So, what are the requirements that need to be specified? Firstly, lets define what we mean by a bilingual software capability:

> **"A bilingual software application is one which enables a user to interact with the application in their preferred language, providing equal support and capability in either language, and allowing a user to switch between languages at any time."**

Though this explicitly requires a switchable bilingual interface, depending on the nature of the application it also implicitly extends to data storage, transmission (interfaces) and any other functionality that is required to fully support both languages in an equivalent manner.

Further, there are operational overheads in maintaining a bilingual system, e.g. bilingual content management and features that are specific to a bilingual/multilingual environment such as cross-lingual searching, multilingual SEO, bilingual address management, mail merge, etc. Requirements can be specified that will reduce ongoing operational cost.

Though the exact set of requirements for each application will vary depending on its purpose and functional capabilities, here's a set of requirements that you may choose to specify:

Equivalence	The layout, structure and content of the application should be identical in both languages. Look for the underlying architecture of the application to support this and consider the ongoing operational effort required to maintain this equivalence. Separate implementations/instances of the application, or separate sites linked by a language selector are likely to be poor and expensive to maintain. A single internationalised application with switchable languages will be inherently more equivalent both initially and over time. All functionality should work equally well in both languages, including notifications and messages.
Completeness	All text and other language-related content should be completely available in each language. This is in the user interface, emails, reports, stored data and elsewhere. All language-related aspects of the user interface should be fully and exclusively in the selected language, and should cover all aspects of the user interface, i.e. menus, forms, content pages, user notifications, system messages, etc.

Selector	A language selector should be in a prominent location in the user interface (top right is preferred). This placement should be consistent throughout the application and equally prominent for each language. The language options should be text (not flags) and be the name of the alternate language, in that language, i.e. ‘English’ for English and ‘Cymraeg’ for Welsh. Once an explicit selection has been made, it should be stored and used as the default for future sessions. The language selector should be available throughout a user's interaction with the application, a language preference expressed outside the application (e.g. in an operating system) should not be relied upon.
Switching	A user should be able to switch language at any point of – and remain at the same place in – their interaction with the application, i.e. the switch will not take the user back to the start/home page of the application or website. A user’s explicit selection of a language should override any implicit assumption of preference. All further interaction with the application should be in that language until the user selects otherwise.
Initial Selection	When the language preference of a user is unknown, it must either be determined without implied default, or a proactive language choice offered. Determining the language preference of a user implicitly can use various methods such as having a domain name in each language, sensing the locale of the user’s environment (browser locale, operating system, etc), explicit indicator in a link, or other method. When doing this it needs to be equal for each language, i.e. not presume a default. If this is not possible a proactive choice, such as a splash screen, should be used.
Language Quality	All text, translations and language packs should be of an equal linguistic quality. Machine translation should only be used as part of a translation process that includes editing and quality checks.
Maintenance	When editing any user interface text in one language, it should be similarly easy to edit text in the alternate language.
Changes	Any changes or upgrades made available for one language should be made for the other language at the same time to maintain equivalence.
Character Set	It should be possible to enter, store, process, transmit and display all characters for each language. i.e. an application should use Unicode throughout. Diacritic marks are common in Latin script alphabets. In Welsh there are seven vowels (a, e, i, o, u, w & y), each can have one of four diacritic marks (Acute: á, Grave: à, Circumflex: â, Diaeresis: ä). Allowing for upper and lower case, this is 56 diacritic characters in total. The Ŵ, ŵ and Ŷ, ŷ are the most common to lack support.
Sort Order	Where content or data is ordered alphabetically, the sort order should be correct for the language used. This is most commonly the case where a list in the user interface is translated, the list should be re-ordered so that it is correct for the translated items. In addition, sort orders can vary by language, particularly where digraphs (e.g. Ch, Dd, Ff, Ll, Ng, Ph, Rh, Th in Welsh) are involved. It is not always possible for an application to support these in each language, but a statement of the sort order used and consistent use of it should be a requirement.
Preferences	A user should be able to select their preferred language for any communication originating from, influenced or tracked by the application. Where multiple communication modes are managed (email, SMS, letter, voice, etc), a user should be able specify a language preference for each.
Accessibility	Any accessibility aids, including embedded text should be equally available in each language.
Emails	All emails from the application should be sent in both languages unless a preference for single language emails has been stated by a user. Language aspects of an email include the content, subject line and reply address. Templates should enable the ‘mail merge’ of the correct data field for each language. When producing a single multilingual email, the order of languages should reflect the user preference. Often, a separate email for each language is simpler.

Links	Any links to other applications, sites or other resources should link to the same language as that currently selected by the user, where that language exists in the linked resource.
Reports	All reports and other system outputs should be produced bilingually unless a language selection has been made or preference stated. The specific approach taken will depend on the nature of the output. The application must both be sufficiently flexible to support all required approaches and be able to support bilingual outputs (with preferred language most prominent). Where data fields are included, they should be the one appropriate for the language.
Search	Search functions should work equally in either language. Cross-lingual searching, where a search is across both languages displaying results in the selected language is desirable and potentially an optional requirement.
Addresses & Maps	All geographical information, including postal addresses, maps and related data should be available in each language. For postal addresses (entry, storage and use), both language variants of the address should be handled, with the relevant language variant used as appropriate. Maps should have place names, to the extent possible, in each language with data overlaid on maps being in the relevant language.
User Assistance	Help files and other forms of assistance should be equally available in each language. Where this is integrated into the application, it should have the same language support (switchers, search, navigation, metadata, etc) as the rest of the application. Any resources embedded in this content, such as screen shots, need to be in the correct language.
SEO	Where the application is a site on the Internet and indexed by search engines, the site should provide equal information and priority for each language for aspects of the site that will influence search engines. There are a variety of considerations here including metadata, domain names in each language, translation of URL paths, etc. The core requirement is that each language has equal prominence and will result in (to the extent that the site can influence) an equal ranking in search engines.
Metadata	Indication of content and data language (metadata) should be supported and treated equally for each language. Metadata should exist in each language with a direct relationship between the language variants of metadata items.
User Content	Where users have the ability to customise user interface text, this capability must be available for each language. Where this facility exists, the order (i.e. precedence) of the languages in the editor interface should be consistent with the selected language.
Data Transmission	Where data is sent or received, data in both languages is to be equally available and supported.
Language Tools	If language support tools (e.g. spell checkers) are provided for one language, an equally capable tool should be provided for the alternate language.
Usage Metrics	It is ideal to be able to identify the use of each language through anonymous collection and collation of usage measurements.

The degree of compliance that you require for each requirement will likely vary. Some, such as supporting the full character set should be mandatory, others may be aspirational.

It's not an exhaustive list, so if you have requirements not on this list and are willing to share them, please email us at **guidance@interceptorsolutions.com** to let us know and we'll update our list for the benefit of future users of this guidance.

Encouraging Suppliers to Bid

Where a solution needs to be bilingual, there is often a fear that inclusion of detailed requirements might cause otherwise viable suppliers to decide not to bid. That is if they assess they can't meet them cost-effectively or they can't justify the resource needed to meet them for what they may consider to be a relatively small market.

But, if the only suppliers submitting proposals are those that already meet all the requirements this could mean an otherwise competent supplier does not bid, potentially the market leader or other desirable supplier. It will also reduce the overall competitiveness of the purchasing process.

Where the requirement is essential, there is little option other than to include it. So, how can we present the bilingual requirements in a manner that encourages maximum participation?

1 Clear and detailed specification.

Providing a clear and complete statement of what is required will encourage suppliers.

It reduces both real and perceived risk for the supplier by informing them of exactly what is required so there is less room for misinterpretation and ambiguity. Importantly, it reduces the impression that the procurement is targeted to a specific (known) supplier that has an informally agreed understanding of the requirement.

A supplier will be able to quantify where they already meet requirements, where they can meet a requirement with minor effort and to reliably cost any new capabilities.

This also reduces risk for the buyer by ensuring that the supplier is fully informed and therefore accountable for delivering a capable solution.

2 Offering expertise and resources.

Often a supplier is less familiar with the bilingual context than the buyer. This will translate into perceived risk and cost for the supplier.

If the buyer indicates a willingness to provide direct and indirect support in these areas, it can reduce the 'gap' between the requirement and existing capability, and therefore encourage suppliers with less experience in this market.

It also provides a signal to suppliers that, though the requirements are clear and expected to be met, that the buyer will be collaborative and supportive in an area with which the supplier might be unfamiliar.

Examples of such support and buyer contributions to the solution include:

- Provision of translation;
- Testing resource (relating to language quality and coverage);
- Willingness to permit the supplier to reuse translations and other resources for other customers;
- Guidance and advice in requirements specification;
- Willingness to suggest third party specialists if/when needed or helpful;
- An understanding that the supplier might be developing these requirements for the first time and that there will be a tolerance for this in pre-sale demonstrations and delivery timescales.

Indeed, it may be possible to provide useful and supportive guidance and resources within the tender specification itself, such as:

- A link to Cymdeithas Cyfieithwyr Cymru (Welsh Translators Association): **https://www.cyfieithwyr.cymru/en** if the supplier is to provide translation.
- References/links to relevant guidance such as this document from the Welsh Language Commissioner: **Technology, Websites & Software: Welsh Language Considerations.**

3 Suggesting acceptable approaches and alternatives.

Whether for the whole set of requirements or for a subset, there may be existing approaches, resources, tools, etc, that will meet some or all of the requirements.

It will be useful to identify these in the specification. For a supplier unfamiliar with the market this will provide some encouragement on how to meet the requirements.

Encouraging Suppliers to Bid

It will also give a potential supplier confidence that the buyer will consider a solution in which the suggested capabilities are correctly integrated as valid and viable.

The set of resources to suggest will depend on the nature of the solution being procured. Some examples are:

- User Interface. This needs to be available in Welsh and switchable between languages. Many applications will have such a capability (i.e. a MUI – Multilingual User Interface), just lacking a Welsh Language Pack (LP).

  If this is the case, and particularly if the buyer is willing to assist with translation, the supplier may realise that they largely already meet language requirements. If not, easily integrated solutions such as LinguaSkin can add this with minimal additional effort.

  A way to phrase this requirement can be to require a "MUI (or some other way of providing a switchable internationalised user interface) either directly or using a companion product such as LinguaSkin".

- Linguistic tools. Where capabilities are required that relate to language, the Welsh language should have equal support to that provided for the English language.

  There are many Welsh language resources that can be integrated to provide this capability, e.g. spell checkers, grammar checkers, natural language toolkits, text-to-speech & screen readers, voice recognition, etc.

- Platforms that are already bilingual. There are platforms and development environments that already have a bilingual (Welsh/English capability. Use of these can go a large way towards meeting the requirements.

  Where a specific platform is a part of the tender specification, identification of the capabilities within that platform that would be considered sufficient will help, as well as those where specific configuration/ development is known to be needed. For instance, Microsoft SharePoint has a well-established Welsh Language Pack and environments as diverse as Minecraft, Moodle and Scratch have existing and good Welsh language support.

- Bilingual Addressing. Royal Mail maintain the Postcode Address File (PAF), built from the Local Land and Property Gazetteer (LLPG) data provided by local authorities. There is a Welsh variant of the PAF.

  Many PAF resellers will provide the Welsh PAF at no additional cost. If a procurement is from a local authority (or related body), offering access to the Welsh addresses in the LLPG can also be a zero/low cost approach.

  This is a great example of where a more detailed specification, combined with information on available resources and potentially an offer to provide them to the supplier can demystify unfamiliar requirements and help a supplier realise that they can build an effective solution with minimal incremental cost.

These are some examples, more will exist – we'll be happy to add to this list, please email us at **guidance@interceptorsolutions.com** with any that you are aware of.

4 Allowing future development.

When assessing the likely level of compliance with requirements, it may be that some aspects are not currently available with solutions from known potential suppliers.

If so, and where appropriate, identify which requirements can be fulfilled later.

Essential requirements could be implemented subsequent to contract award but prior to live users accessing the solution. These should be tied into the overall acceptance criteria and hence into contractual commitments.

For others it can be an intended future development. If so, require a firm timescale to achieve these and have the contract reflect this with warranties, withholding, penalties or other mechanisms as you would for other essential functions.

This approach mitigates investment risk for a supplier as they can defer any new development until they have the assurance of having won the contract. But ensure that language compliance isn't then side-lined, make it an essential part of delivery.

Encouraging Suppliers to Bid

5 **Gateway to the market.**

In deciding to respond to an opportunity that requires a supplier to develop an additional capability for a productised solution, a risk/benefits analysis will take place.

While this will largely be around the immediate opportunity, if the supplier is aware of the potential of a larger market, this will increase motivation. Risk can be spread, investment can be recouped and improvements become a future differentiator.

Any indication of a larger market potential and a willingness to support a successful bidder in accessing this market will help influence their assessment. For example, indicating a willingness to act as a reference site and case study, subject to all requirements being fully met in a timely manner.

Other Considerations

When creating your set of requirements to procure bilingual solutions, think beyond the immediate functional requirements and also consider:

A **Ongoing costs.**

Will bilingual capabilities be maintained in future upgrades of the solution? Does the supplier consider this to now be a part of their supported product or do they consider Welsh language support to be a bespoke/custom aspect of their implementation for you?

B **Language maintenance and customisation.**

When working beyond their default/main language (usually English in the UK market), a supplier will often have less familiarity and quality controls over additional languages. So new text may not always be translated into Welsh and/or translation quality reduces.

A good way to eliminate this risk is to have the ability to edit the text in a language pack. This not only covers the risk of a poor translation quality but also allows language to be tailored to your setting. If this is possible, make sure any editing you make is both compatible with future product upgrades and is also not overwritten by them.

C **Bilingual = Multilingual.**

Bilingual requirements can often be easily met by solutions that are already multilingual.

The reverse is also largely true. A solution that is good in a bilingual context is often very easily extended to be multilingual. Depending on your organisation's activity, considering a broader multilingual use of a solution can provide an extended return on investment.

A great example is in Higher Education. A requirement to have bilingual student-facing systems (recruitment, welfare, accommodation, etc) to meet Welsh language obligations is easily extended to Chinese, providing marketing USP and increased revenue.

Conclusion

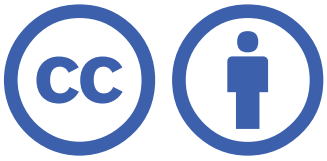
We hope that this guide has helped with suggestions on how to improve the capability and compliance of procured solutions for bilingual requirements whilst encouraging and broadening the engagement of suppliers.

These approaches will not only help with specific procurements and in the short term. Over time, as suppliers become more familiar and educated as to what is required, the level of provision in the market will increase and will normalise these requirements.

Indeed, many software suppliers already have sophisticated internationalised solutions. A clear and detailed specification of what is needed often helps them to realise the relevance of these capabilities to the bilingual requirements for Wales.

If you found this guide useful, have any comments, suggestions, corrections or things you think we should add, please do let us know at: **guidance@interceptorsolutions.com**.

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