

# **ComputerWeekly.com**

## **Guide to sourcing software developers**



**How to source the right software developer for your business**

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## **ABOUT COMPUTER WEEKLY**

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- Initiatives such as the CW500 club reinforces Computer Weekly's impact and influence amongst senior IT decision-makers
- Complete dominance of the national news agenda – over 750 mentions within the media in 2006

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## INTRODUCTION

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A professional software development company specialises in creating bespoke software that is tailored specifically to your company's needs. They can also provide a range of off-the-shelf software packages that can be tweaked to suit your business model. From CRM solutions through to warehouse management, and from single applications to larger architectural projects, software developers can work their wizardry to hugely improve the efficiency of your business.

Software developers will work with you to understand your business processes and create usable, bespoke software packages to integrate with your systems and ensure that you're running your business in the best way you can. Once the software has been developed, they can also provide support and consultancy to make sure you're getting maximum value from it.

The Approved Index is a great way to find a software developer. You can complete a simple form on our web site outlining your requirements and receive free, no obligation quotes from up to 6 leading software development companies.

[www.approvedindex.co.uk/indexes/SoftwareDevelopers](http://www.approvedindex.co.uk/indexes/SoftwareDevelopers)

This guide will give you an overview of software development and some pointer on choosing which company to use for your software development project.

## **BESPOKE VS. OFF-THE-SHELF SOFTWARE**

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When looking for a software solution, you have two choices. You can opt for off-the-shelf software, or you can commission bespoke, customised software. Remember, off-the-shelf packages and related applications will typically be run by thousands or even millions of users. However, bespoke software is custom developed for your particular organisation or business. There are various advantages and disadvantages to both approaches. Your best bet is to take a hard look at the facts before purchasing the software that could make or break your business.

### **Key differences**

#### **Price**

Off-the-shelf software is usually reasonably priced whereas a customised product can be relatively expensive to build. The cost of development of an off-the-shelf product is distributed over a number of buyers. Therefore, the pricing is spread over the number of licences that will be sold. Customised, bespoke software, on the other hand, is uniquely made for just one buyer.

#### **Generic build**

Off-the-shelf software is made for a wide range of consumers. In fact, one product is spread amongst a number of consumers, levelling the playing field for all. The development team provides a standard design and pre-defined framework. Since an off-the-shelf product is designed to be standardised, it may not cater to all requirements of every individual company. Usually there are adjustments that an existing organisation will need to make in order to make the best use of an off-the-shelf product. Customised software internalises current processes and builds an electronic framework to automate them. There is no requirement to change any processes. It takes a matter of days to familiarise yourself with the software. Customised software can change to suit your needs. You're also able to fine tune the software for better performance.

## Updates

Each time there is a revision in software that has been purchased off-the-shelf you will need to pay an update fee. Some off-the-shelf products may not have any updates for a long time, making you use obsolete software which might have negative repercussions on your business. Customised software has updates done based on the requirements and budget of the company. Note that off-the-shelf software is ready to roll the minute you slide the installation CD into the drive. Bespoke software is built to your specification.

## Pros and cons

### Off-the-shelf software: the pros

- Off-the-shelf software tends to be relatively cheap. The cost of development is shared by a large number of users.
- Off-the-shelf software can be very sophisticated as the revenue from a very large number of users equals a lot of resources that can be applied to its development. Have a look through the menus of a Microsoft's ubiquitous Office software (e.g. Word, Excel) and you'll see how much functionality is included.

### Off-the-shelf-software: the cons

- Off-the-shelf software can be highly complex. It will usually include large sections that you will never use. The average Microsoft Word user is reputed to only use about 10 % of the available facilities.
- Off-the-shelf software tends to be a compromise. By its very nature this software is designed for many different types of users. Each will have different requirements.
- Off-the-shelf software may take a long time to learn properly. This is because this software tends to be large and complicated.

- You may have to make adjustments. This means altering the way that you work in order to fit in with the way that the software has been designed. There will probably be operations that you require that you simply cannot perform with the software.
- Your competitors are on your level. As the same system can be bought by your competitors, it is very difficult to gain any competitive advantage solely from its use.

### **Bespoke software: the pros**

- Bespoke software is by definition unique. More importantly, it'll suit your pocket and your company's unique requirements.
- Bespoke software applications are written to meet specific and unique client requirements. In this way it offers many advantages over standard, off-the-shelf software as it can be tailored to fit in exactly with the way that your business or organisation wishes to operate.
- Bespoke software can develop with your business. It can be tuned to your specific needs, providing performance benefits that are feasible with packaged software. It is much more flexible than packaged, off-the-shelf software and can be modified and changed over time as your requirements and business practices change.
- Bespoke software is easy to use. This is because it works the way you want it to work. You are in control since you can make the changes you require when you like. It requires less supervision and results in fewer errors.
- Bespoke software increases productivity. Customised applications increase productivity by automating repetitive tasks.



- Bespoke software gives you the upper hand. Your bespoke software sets you apart from your competition. The use of professionally developed bespoke software applications can give you a significant business advantage over your competition. If you're fortunate enough to find good developers, then they can significantly add value to your company by suggesting alternatives, improvements and by acting as a source of IT advice and information.
- Business information is easier to understand. This is because customised applications incorporate your business knowledge. Information can be integrated from disparate existing applications.

## Bespoke software: the cons

- Without the source code of your software you're doomed. If you do not have the source code you are dangerously exposed. You're also completely dependent on the developers continuing existence and good will. To avoid this problem make sure you choose a developer who provides you with the full source code listing for any application they develop.
- You could risk unstable software. If the software is not developed to professional best practice standards it may be unstable, unreliable and full of bugs, although some packaged software also has these problems. Selecting a developer who works to accepted best practice standards should counteract any risk. The Information Technology Infrastructure Library (ITIL) is one such standard.

It makes sense to investigate every option before settling for something that might not do your business justice in the long run. It is better you purchase software that can give you maximum results, than software that gives you mediocre results. Your business could be at stake. Having a customised application developed can

potentially provide you with major business and commercial benefits and allow you to gain a significant competitive advantage.

## OUTSOURCING SOFTWARE DEVELOPMENT

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In today's business climate of increasing globalisation, recent figures show that more than half of Fortune 500 companies practice offshore outsourcing as a part of their overall business strategy, and this should come as no surprise. For several years now, the benefits of outsourcing specific aspects of your workload to more economical parts of the world so that you are better able to concentrate on your core specialisations have been well known. And in no area of offshore outsourcing has this been more valid or necessary than Information Technology, and in particular the development of new software. The principle reason for this is that IT uses a language and skills that transcend national and cultural barriers. The potential expenditure in time and money spent developing a bespoke piece of software for your company makes sourcing the cheapest provider a top priority.

Regardless of this, if your company is proposing to outsource an offshore software developer, it is worthwhile understanding the benefits and risks involved. A good way of minimising risk, for instance, is to use a UK based offshore software developer, or an agency whose business is to connect clients with developers matching certain requirements. The benefit of using a facilitator to outsource your software development needs is that they will have the experience to secure the best package with the minimum of fuss. In no time at all you will be able to get on with your core business activities while your software is built to your exact specifications. However, in order for this process to run smoothly, it is important to establish certain working conditions, which could equally be applied to any software development project.

- That there is a project manager on the ground, who is contactable during UK office hours and will give you daily progress reports by phone, text or email. Seek assurances that the same project manager will be with you for the duration of the project and will not be replaced by a more junior employee half way through.

- That there are regular opportunities for the people who will be using the end product to test the prototype and have a say in any improvements. Also, that any decisions about the development of the software above a certain level are referred straight to head office.
- That any future product enhancements or upgrades will be carried out by the original team of software developers using the same stringent quality and testing standards.
- A top of the range piece of software will only be useful to you if you understand how to get the most out of it. Ensure a clear user guide will accompany the final product and sufficient training is carried out during or after software implementation, as is most appropriate.
- Seek guarantees about the quality, usability and durability of the software and establish a clear timeframe and budget for its development, above which certain penalties will be incurred by the developer.

The time and effort spent establishing a good working relationship with an offshore developer is worth it because of the 40% to 60% cost savings you'll make compared to using a developer working solely in the UK. Alternatively, if time is more of a factor, it is possible to set up an onshore/offshore system, so that as the British team starts their day's work, the Indian or Chinese team is just completing theirs. Or perhaps you'd prefer an offshore developer who keeps similar hours to you, in which case contracting the work to South Africa makes more sense. An additional benefit of the South African model is that you will be able to conduct video conference meetings and emergency phone calls at mutually convenient hours and won't suffer from jet lag when visiting the site.

As should be clear by now, offshore software developing can be a winning formula for your company, so long as the client/developer relationship is strong, with benefits including improved access to local labour and IT markets in the world's fastest growing economies in addition to considerable cost savings. Thanks to the software outsourcing pioneers of the 1980s and 90s, offshore software development is now a highly competitive industry offering lower risk and higher gain. As such, there has never been a better time to outsource your next IT project to an offshore software developer.

# CHOOSING A SOFTWARE DEVELOPER

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The mere thought of selecting a software developer can be daunting if you are not technically minded, but be assured that your role in the selection process is one of assessing the developer, rather than that of assessing software technology. Successful software development relies heavily on a strong partnership with the developer. Thus, picking the right developer is crucial, and the following suggestions will assist you in hiring a reputable and proficient developer.

## Establish your software requirements

Software development cannot occur without a well structured and clearly defined set of your business's software requirements, as the work is in essence a process of addressing needs and solving problems. Consequently, development success will depend largely on the time and effort you dedicate to this stage of the process. It is only by analyzing needs and desired functions that a developer can provide you with as accurate a job proposal and cost estimation as possible.

Be extremely thorough and precise at this stage, including key employees' suggestions and needs, and compile a comprehensible requirements document, separating the mandatory needs from the optional. Draw up a list of potential developers by asking businesspeople you know for recommendations or by researching web directories. Send them the requirements document, as well as information about your company (such as business objectives) and your budget, so that they can in turn provide you with a job proposal and quotation.

## Assess the candidate developers

A preliminary assessment of developers' written proposals and quotations should give you a good indication of their suitability in addressing your needs, but a final decision should be determined by in-person interviews as well. Meeting face-to-face is crucial in

evaluating not only the candidates' services, but their personalities and communication skills too. The latter two are vital aspects in ensuring a strong collaborative partnership with the company, which will largely determine the success of the software development. In your assessment of the potential developers, consider these factors:

## **Experience and expertise**

You will obviously want to hire someone who is proficient in the field and keeps abreast of the latest software technology trends and discoveries. Be sure that the candidate is a genuine software developer able to suggest solutions to your problems, and not merely a programmer who wants exact instructions on what program he or she should write. Also be careful of developers who are preoccupied with their particular area of technology specialisation at the expense of your particular needs. A good developer should provide you with the type of technology most suited to your requirements.

It is preferable to choose a developer who is both experienced in their own domain and familiar with your particular industry. The reason for this is that they will be aware of the common needs (both clearly stated and implied), problems and general expectations in your line of work.

Visiting a candidate's website should give you a good indication of these aspects, but the best and most direct way to determine a candidate's experience and expertise is to contact former and current clients. Ask them specific questions about the development company's general service delivery, response to problems, and the efficiency of the developed software.

You can ask to see samples of software, and test it yourself to see whether it is user-friendly (although remember that training will be provided) and effective.

Industry awards are also obviously a good indication of a company's expertise.

## **Size**

There are advantages and disadvantages to both big companies and sole proprietor situations. A big company may house all the skills and services needed by your requirements, but you run the risk of getting lost among many clients. The opposite is true for a small company or sole proprietor. Therefore, size is not an important deciding factor. Rather, make sure that the developer you choose can cope with the size of your company, and either cover all your requirements or be able to outsource specialized skills to reputable contacts.

## **Personality and communication skills**

This may sound trivial, but your instinctual like or dislike of the person or group is significant in the selection process. You will be working in close partnership with the developer, discussing problems which can become draining and difficult, so it is vital that you get along. The ability to communicate clearly and patiently, without loads of jargon, is also imperative. Software development entails your description of needs and problems being translated by the developer into functional solutions. Misunderstandings are inevitable in such a complex communication situation, therefore be sure that a good basic level of interaction is evident from the start

Also note their interest in the work and in your vision. Passion for a subject will generate creative problem solving.

## **Support**

Your company will need technical and administrative support during and after software implementation. This includes staff training, user manuals or help documentation, and debugging of software. The company should also be committed to the general improvement of



your software and the software should support integration with your existing applications and major systems, and comply with all platforms. These issues, along with specifications of the amount of support provided, should be clearly stated in the contract.

## Price

This is another factor which should not solely determine your choice of developer. Software development is a complex process and you should expect to invest a substantial amount of money in the process.

More important issues of price in choosing a developer are those of costing methods and charging for changes. Avoid companies that charge hourly rates without specifying the amount of time that the job will take. A good developer should be able to make a fairly accurate cost estimation that constitutes fixed fees, providing that your requirements have been clearly and completely stated. Be prepared, however, for possible added costs later in the development process if changes are needed (which they usually are). Changes cannot be predicted, but be certain that you understand the developers means of dealing with and charging for changes (this should also be stated in the contract).

## Legal issues

An important aspect that should be stated in the contract is that of licensing. Ensure that you will be able to use the software on all the computers that you need to, and be aware of any specific copyright claims the developer might have. A guarantee as to the end product's effectiveness should also be stated.

## Questions to ask

When choosing between candidates for a software development project, you should ask any and all question you have and be sure

that you receive satisfactory answers. First of all, the more general questions:

1. What is the estimated timescale for carrying out the work from conception to installation? Will this include the creation of prototypes and demo versions that I can try out? And will my observations of the prototypes be factored into the final version?
2. Will your research into and selection of optimal technologies be influenced by pre-existing relationships with other companies or will you start the process free of any particular affiliations?
3. How much liaising would be expected while detailed specifications for the project are drawn up? I understand that the software programme will be custom made for me, but how much of a say will I have in the process?
4. How much time do you put into the creation of project documentation (such as detailed descriptions of the source code, system architecture and system protocols) so that our in-house IT experts can follow what is going on?
5. User documentation will be required so the system can be used by employees who are not technically orientated once the software is developed and up and running. Will the user's manual, troubleshooting section, installation guide and FAQ section be written in as clear and easy to follow language as possible? Is this work done in-house or outsourced to a professional copywriter?
6. What post-installation product support and remote administration services will you be able to offer? Will training be available to ensure that users make the most of the software? Are there any guarantees that you will be on hand to fix any problems that

might arise and will you take full responsibility for any problems that do arise?

7. Can the software be upgraded in the future as new technology becomes available? Also, can additional features be implemented as and when they are required and the software reused at a later date for other systems?
8. Can you give guarantees about the security of the site and its resistance to bugs and viruses?

The answers to these questions should give you a good picture of how adaptable the software development company is and the level of service, support and security you will receive from them, both in the short- and in the long-term. As you consider the answers to these questions, you should also review their employee turnover, years of tenure and the number of contracts of your size that the company has previously had. And ask questions about the terms of payment, and whether this is performance related.

Once you have had your questions satisfactorily answered and the software development company seems reliable and adaptable and able to match your requirements, you can go ahead with drawing up a contract. However, if the company is offshore, additional questions come into play that will enable you to assess whether you can work with them and if they will be able to complete the development project to the standard you expect:

1. Will a project manager be assigned to me as a contact person? Will this contact person be available throughout the time the software is being developed?
2. Will he send me a progress report on a daily basis detailing the work that has been completed? What other pieces of information will he update me on? Will the progress report include a plan for

the week? If I make a request or submit a question, how soon will it be answered?

3. What system of cost tracking do you have to ensure that the software development is completed on time and within budget? If, for any reason, there is a delay to the project or it has gone over budget, will I be notified of this development immediately?
4. Does the work you do include any warranties, and are you available for system support and maintenance in the period after the warranty has elapsed?

## **Begin the development**

After considering all these factors in the evaluation of candidates, you should be able to hire one that you are happy with. After signing the contract and starting the development, remember that communication is key. Address problems and announce required changes as early in the process as possible. The beginning of development will involve a more in-depth analysis of your company needs by the developer. This may include interviews and observation, and should demand a fair amount of your time. Keep in mind, however, that this is the most crucial phase of development and therefore a sound investment of time. The developer should then provide you with a functional specification of your requirements, which can be signed off to commence the project. Make certain, however, that signing off the requirements does not bind you to them, but allows for changes to be made for an added fee. The remainder of the process entails the development of prototype(s), testing, implementation and post-development training, support and maintenance.

## PRICE GUIDE

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As with any bespoke project, software development costs are incredibly difficult to estimate. No two development projects are the same, and the specific requirements, development steps involved and problems to overcome for every unique project can affect the price that you pay. As such, the below should be viewed as guidance only, and for any real estimates you should request quotes from software development companies.

In general, the cost of a development project will be based on the number of hours of programming required. Since computer programming is a skilled and highly specialised occupation, hourly rates can be very high, from £30-50 at the bottom end, up to hundreds of pounds per hour for experts in esoteric or obscure systems and programming languages. You should never find yourself in the position of paying an hourly rate for a particular software project; instead, having analysed your requirements, a software development company will be able to give you a fixed price for the project. While this may still be subject to some variation, particularly if major changes need to be made, or requirements change during development, such variation should not be too significant.

As a very rough guide, a typical software project which involves customising or adapting an existing system or piece of software will cost at least £2,500, rising for more complex, feature rich, or challenging solutions.

A fully bespoke software application, written from the ground up, requires a significant investment, and is worth the money to get a tailored solution for your business needs. Expect to pay at least £5,000 for a relatively simple solution. Again this price will increase as the application demands more sophisticated solutions or is integrated with existing systems.