

The Future of Software Development

in Australia

Survey Report February, 2010

In December 2009, GLiNTECH commissioned IMQ Strategic Consulting to conduct an independent review into the future of software development in Australia. The intention was to seek input from IT decision makers about the current state of the industry and gain insight into emerging trends. As part of this review IMQ designed an online survey that focused on the use of development methodologies and programming languages. In total, 77 respondents participated in the online survey.

Participants represented a broad cross section of industries, including; banking, financial services, insurance, education, telecommunications, utilities, software and technology. The size of the organisations ranged from large multi-nationals with 90,000 employees to small consultancies of just two employees. The respondents hold a variety of roles from chief technology officers, managing directors to analysts, architects and solutions consultants.

Methodology

Utilising open source software, an online survey was created. Invitations were sent out via email, LinkedIn groups and promoted on the GLiNTECH website.

Survey highlights

- SOA & Web services related initiatives are driving development methodology change;
- Java is the most popular programming language used;
- Capable, compartmentalised development is the most important factor when assessing new languages;
- Open source has a big future and is here to stay;
- Cloud computing is the 'next big thing' in software development;
- Investment in IT is growing.

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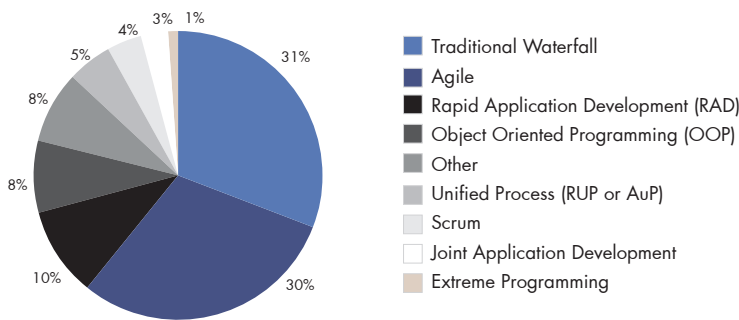
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Development Methodologies

Respondents were asked a series of questions about their use of development methodologies and to rank these in terms of their capabilities. Those intending to change in 2010 indicated which methodologies they would be using and their reasons for the change.

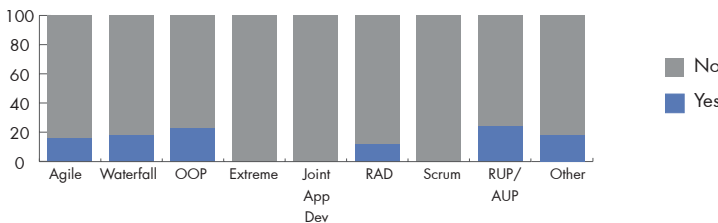
Highlights

- Traditional Waterfall is the most popular methodology used, with 31% using this as their primary method;
- 16% of respondents are planning to change their primary methodology in 2010;
- SOA & Web services related initiatives are the number one reason people are changing;
- Of those changing methodologies, 40% will be using Agile.



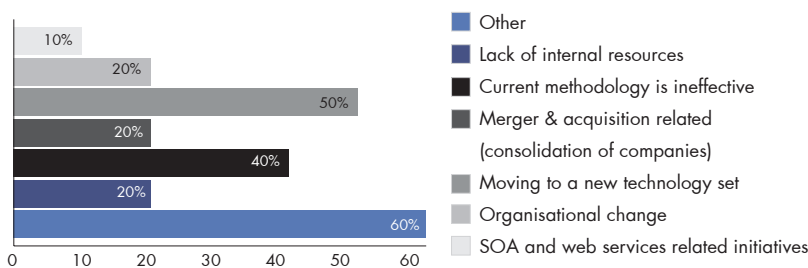
Primary methodologies used

Perhaps unsurprisingly, the use of Traditional Waterfall and Agile accounted for the majority of respondents, with 61% using one of these as their primary methodology. For the remaining 39%, development methodologies are very fragmented. Those using customised methodologies accounted for 8% of respondents and these were all from large enterprises.



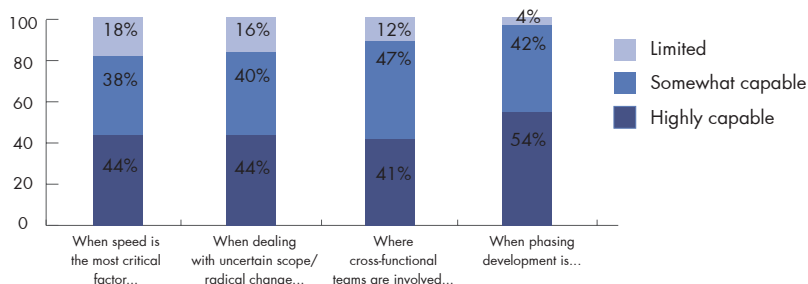
Who is changing methodology

16% of organisations are changing their core methodology in 2010. Interestingly, an overwhelming 23% of OOP users are intending to change methodology in 2010.



Why are people changing methodologies?

With 16% of organisations changing their primary methodology in 2010, the top three reasons for change are; SOA & Web service related initiatives, ineffectiveness of current methodology and a move to a new technology set. It is interesting to note that a lack of internal resources is driving methodology change for 20% of organisations.



Methodology capabilities

Respondents were asked to assess their primary development methodology in the following situations:

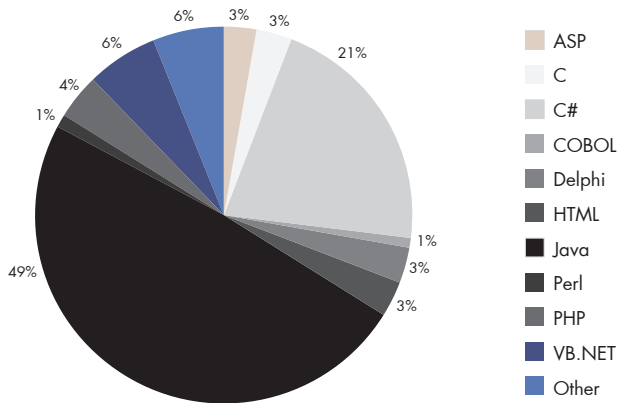
- When speed is the most critical factor ..
- When dealing with uncertain scope/radical change..
- Where cross-functional teams are involved...
- When phasing development is...

The future of programming languages

Respondents were asked to rate their current programming languages and indicate the reasons why they were considering changing in 2010.

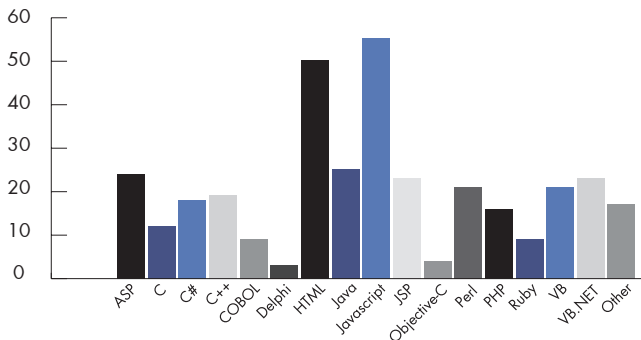
Highlights

- Java is the most popular programming language, with 48% of respondents currently using it;
- 90% of respondents state that technology change is the number one driver of programming language change;
- 100% of Delphi language users are changing in 2010;
- Cost is only considering by 10% of respondents as a reason for change in 2010.



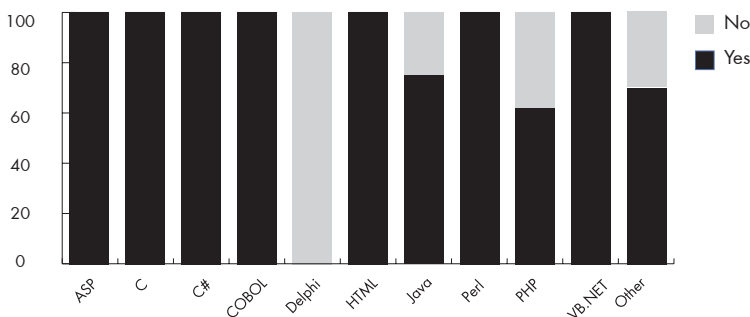
Primary and secondary programming languages used

The vast majority of respondents primarily used Java as their primary programming language. Whilst C# was the second most used language, the remainder was very fragmented.



Other development languages used

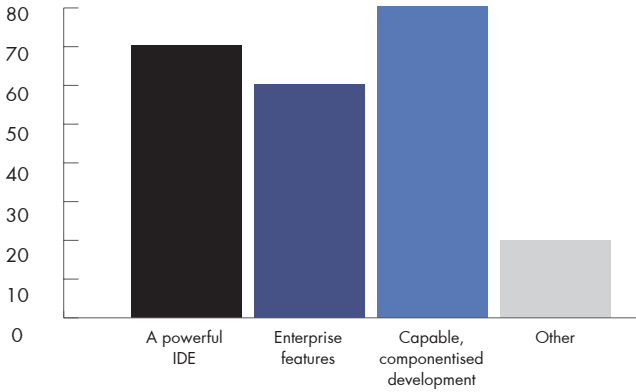
Apart from the primary languages used, additional languages were also used extensively. The most popular secondary language used was Java Script and HTML. Emerging languages such as Ruby, Perl and PHP were also used across the board.



Who is changing languages?

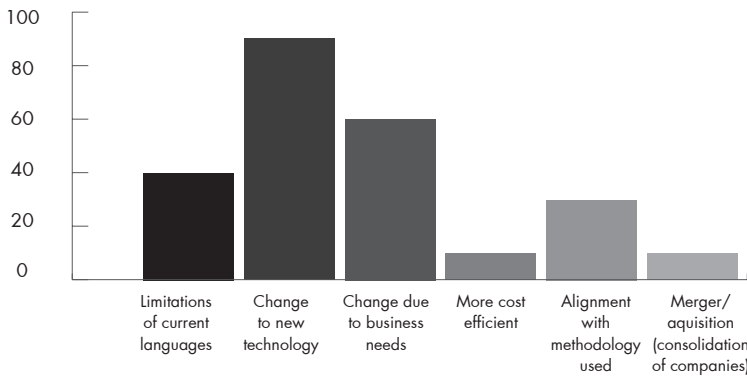
15% of respondents are changing their primary language in 2010. The chart indicates the users who are changing. Interestingly 100% Delphi users are changing whilst users of ASP, C, C#, COBOL, HTML and Perl are not intending to change.

The future of programming languages



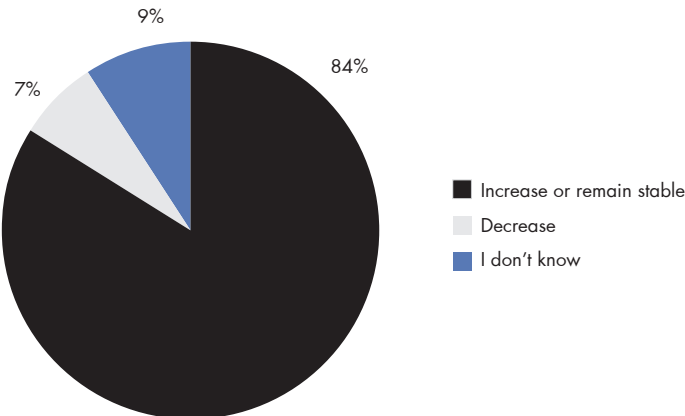
Important qualities of programming languages

80% respondents rate capable, componentised development as an important quality when considering a new language. The 20% of respondents that rated 'other' listed the following; 'fun', 'easy to learn' and 'ease of implementation' as important.



Reasons for changing languages in 2010

90% of those considering changing languages are doing so due to a technology change. Cost was only an issue for 10% of those changing.



IT expenditure in 2010

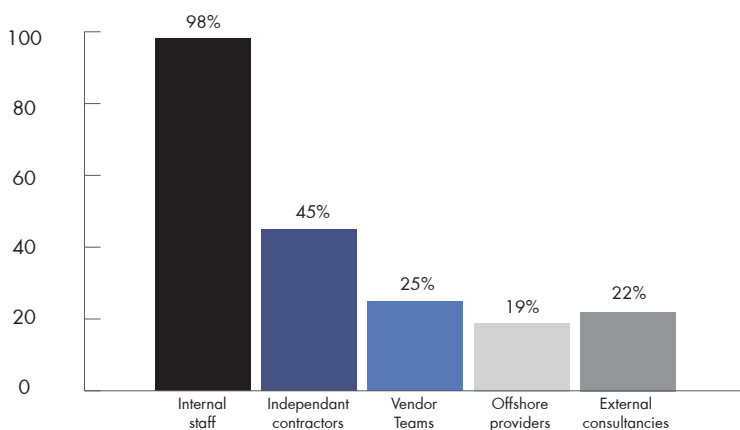
An overwhelming 84% of respondents expect that their IT budget will grow or remain stable this year. The results are across the board, with size of company not making a difference in this response.

Who makes IT decisions?

Respondents were asked about their perception about IT decision making and implementation.

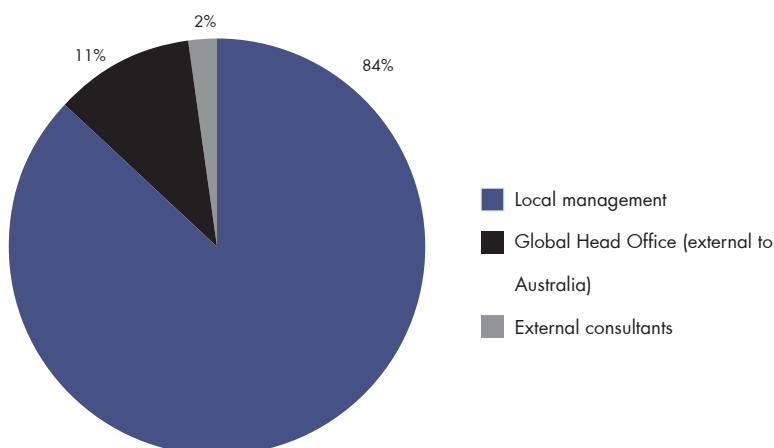
Highlights

- The majority of respondents use a combination of internal and external sources for IT implementation;
- Almost all companies have an internal IT resource for implementation;
- Global head offices set the IT direction for 11% of companies.



IT implementation

Surprisingly the overwhelming majority of companies use a combination of both internal and external resource for IT implementation. 19% of respondents state that they use offshore providers to deliver this. It will be interesting to conduct further research to find out if this is growing or declining and the rationale behind this decision.



Who sets the IT development direction?

Whilst 84% of IT decisions are made by local management, in 11% of companies the global head office sets the direction. Of those that where local management sets the direction, 9% of those do in fact have a regional or global head office. It is intriguing to note that 2% of companies rely upon external consultants to set their IT strategy.

Open Ended Questions

The future of open source

68.8% of respondents believe that open source has a big future and is here to stay. An overview of the responses is listed below.

"powerful and will continue to be a major factor in the decision making process"

"open source software is here to stay"

"here to stay, proprietary software will die"

"it will continue to take market share"

"Open-source will gain traction, particularly in government sectors. We will see more IT consultants and vendors offering open-source solutions"

"It will continue to grow and evolve. Vendors will continue to exist but will have to adapt their model to incorporate more open source commitments"

However, others did not agree

"avoid it like the black plague"

"I don't believe that it is 'open' anymore"

"useless"

What will be The Next Big Thing in software development?

The main themes from the responses are that cloud computing (19%) and open source (11%) will be the next big thing.

"All software platforms seem to be consolidating towards the big 3 - IBM, Google and Microsoft."

"Unless the requirement is niche, it will become less and less effective to perform custom development or use proprietary platforms. The next big thing appears to be the move to the "cloud" and outsourcing parts of your platform to save on costs although everyone is a bit unsure about this at the moment due to risks and lack of direct control."

Techniques that can be used to optimise power efficiency for green software development

This question seemed to cause some confusion and this is not surprising considering all the uncertainty within organisations in general about the direction of green business. Some interesting comments were made that ranged from use of hardware and attitudinal issues.

"better algorithms during development - using older computers and replacing them with energy efficient ones."

"proper recycling of pcs, work from home policies"

"Passive cooling. No more fan in the desktop."

"To include environmental costs in implementation analysis"

"Factor in resources for code re factoring and performance improvements"

"Developers should become more memory conscious in designing and implementation phases"

Conclusion: Overall, there was little consensus in regards to the open-ended questions. With all the uncertainty about the future of green business is it not surprising that IT respondents were unsure as to how to answer this question. More research and time needs to be dedicated to investigating techniques to improve power efficiency.