

# THE FUTURE OF SOFTWARE DEVELOPMENT IN AUSTRALIA 2011/12

## SURVEY REPORT NOVEMBER 2011

### Survey Highlights

- 32% of respondents said they currently use Agile as their primary methodology and OOP with Waterfall as their secondary methodology. SOA and web services related initiatives was the main reason for considering changing methodology.
- 45% chose Java as their primary programming language and 58% chose Javascript as their secondary programming language. The most desirable quality of a programming language was capable, componentised development (74%).
- 77% IT development direction is set at a local level. 70% expect IT expenditure to remain stable or increase in 2012.
- 67% of respondents indicated that the most important way IT leaders can support customer satisfaction was by improving and increasing the communication between business and the software development team.

# INTRODUCTION

Each year GLiNTECH undertakes a market survey in order to gain perspective on the current state of the IT software industry in Australia, the key factors driving software requirements and future trends for the wider industry.

## Methodology

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

The analysis of the results is presented in four distinct sections:

- Current Development
- Planned Development
- Development Expenditure
- Future Trends

The first two sections contain graphical illustrations and supporting commentary explaining the results of the closed questions asked in the survey. The third section is a summary of open-ended responses.

The questions and choice of answers in the first two sections were the same as 2010. The future trends included topical questions as well as the generic 'what is the next big thing?'

GLiNTECH employ the services of an external marketer to collate the results into this report. GLiNTECH use Beaumont Consulting to supply this resource.

This year there were 104 respondents from a variety of sectors including banking, finance, insurance, education, telecommunications, utilities, software and technology. The size of the participating organisations ranged from two to 187,000 employees and the respondents came from a myriad of positions; analysts to architects, CEOs to consultants, developers to directors.

## Future Trends Summary

In regards to the question of the 'next big thing' in IT software, 23% of respondents indicated Cloud computing as a main feature - an increase of 4% on the figure from last year. The other common reply to this question was the development of mobile platforms, including applications, which accounted for 18% of responses.

When asked about the possible effects of Web 3.0 on software development, 42% of respondents considered it to be either too early in its life cycle to be able to tell, to have a limited impact or were unaware of the existence of Web 3.0.

In response to the question of what the main advancements made in areas of the NBN, cloud computing, collaboration software and mobile technologies would mean for software development teams, 22% of respondents believed that working remotely would be the most immediate increasing trend. A further 14% believed that more development would be outsourced or moved off-shore, while 9% suggested that software teams would need to become more flexible in a rapidly changing environment.

67% of respondents indicated that the most important way IT leaders can support customer satisfaction was by improving and increasing the communication between business and the software development team.

# CURRENT DEVELOPMENT

Participants were asked to respond to a series of questions regarding their current development methodology and programming language, and the capability of these existing functions to perform to the required level.

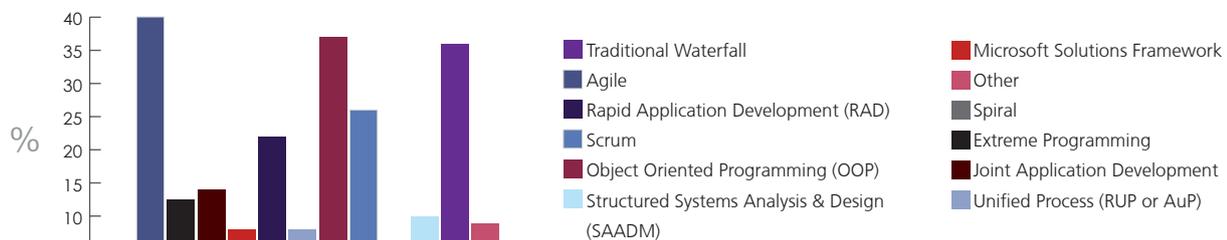
As was the case in the 2010/11 survey, the two most popular development methodologies as a primary source were Agile and Waterfall. But unlike last year, Agile was the clear standout with 32% of respondents favouring it over Waterfall (22%).



PRIMARY DEVELOPMENT METHODOLOGIES USED

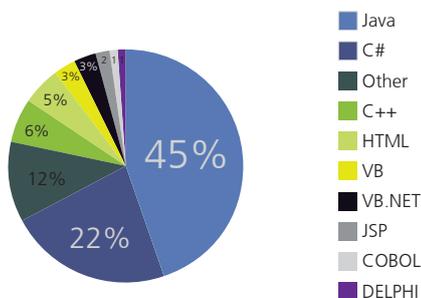
The trend towards Agile may help to be explained in the results of last year's survey in which 15% of respondents had indicated they were planning on implementing a new development methodology for the year ahead and, of those, 65% had indicated Agile as being their preferred option.

As a secondary methodology, Agile and Waterfall were again the front-runners, though the spread was much more even with Object Oriented Programming (OOC), Scrum and Rapid Application Development (RAD) all accounting for a significant portion of responses.

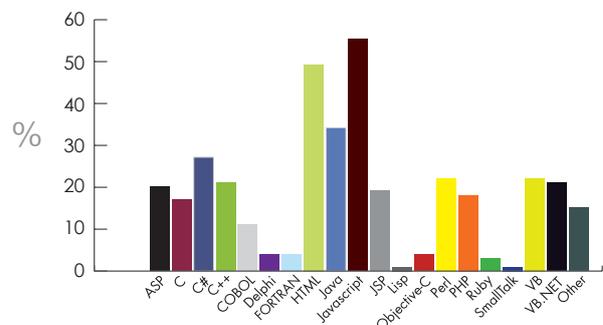


SECONDARY DEVELOPMENT METHODOLOGIES USED

In regards to primary programming language, for consecutive years Java was a clear favourite (45%) with C# the runner-up (22%). Also mirroring last year's results, the most popular 'other languages' used were Javascript and HTML.



PRIMARY PROGRAMMING LANGUAGE



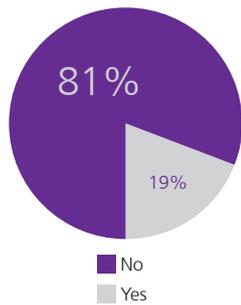
OTHER PROGRAMMING LANGUAGE

Overall, respondents felt that whatever development methodology and programming language was used, they were capable of fulfilling the requirements of the organisation at that point in time. The closed nature of this question does not necessarily indicate the exact problem areas that organisations did have and further investigation will need to be carried out so these factors can be determined. However, some general areas of concern were identified and are mentioned in the final section of this report.

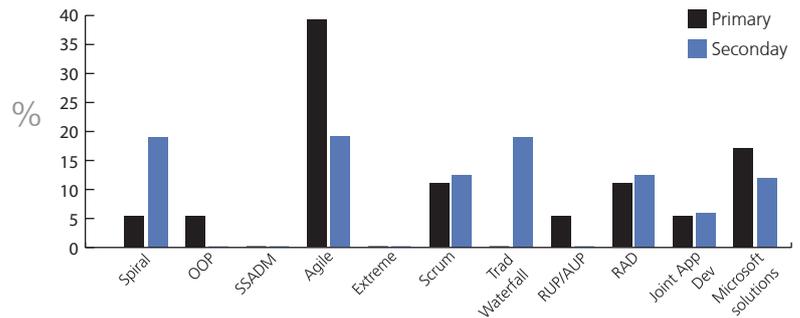
# PLANNED DEVELOPMENT

Participants were asked to respond to a series of questions regarding whether they intend to undertake new development methodologies and development languages, the main reasons for pursuing change and the qualities being sought.

In response to the direct question of whether their organisation is planning to change development methodologies in the coming year, 19% declared that they were looking for a change. As was the case in the previous survey, of those intending to change, 58% were planning on the uptake of Agile in either a primary or secondary form.

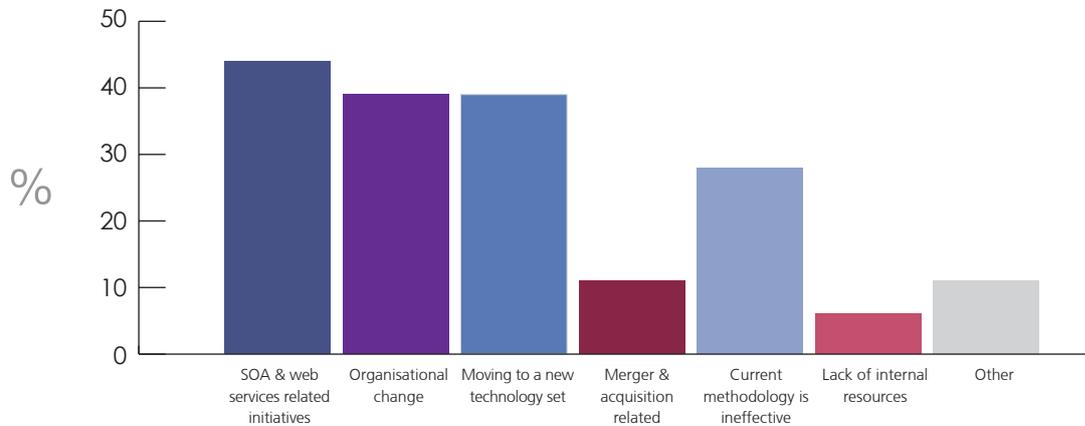


DO YOU INTEND TO CHANGE DEVELOPMENT METHODOLOGIES IN 2011/12



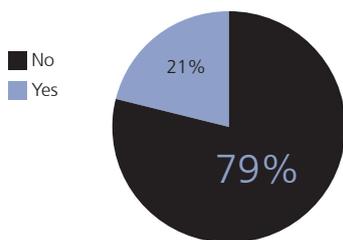
WHAT NEW DEVELOPMENT METHODOLOGIES ARE YOU LIKELY TO USE IN 2011/12

The main reasons for change are SOA and web services related initiatives (44%), organisational change (39%) and moving to a new technology set (39%).\*

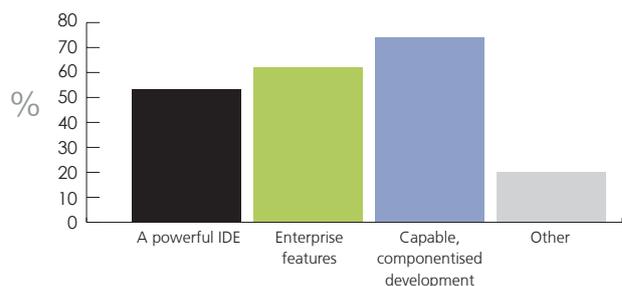


WHAT ARE YOUR REASONS FOR CHANGING YOUR DEVELOPMENT METHODOLOGY IN 2011/12

In terms of using different development language, 21% of respondents indicated they were considering a change. The desirable qualities organisations were looking for were capable, componentised development (74%), enterprise features (62%) and a powerful Integrated Development Environment (53%). The main driver for considering new language was a change to new technology.



ARE YOU CONSIDERING USING A DIFFERENT DEVELOPMENT LANGUAGE IN 2011/12?

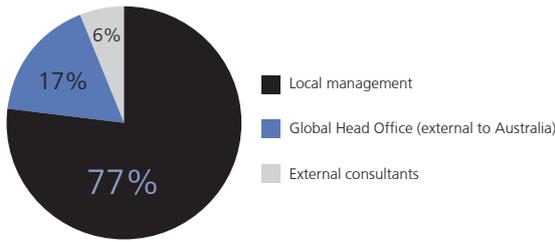


WHAT QUALITIES DO YOU LOOK FOR WHEN ASSESSING NEW LANGUAGES IN 2011/12?

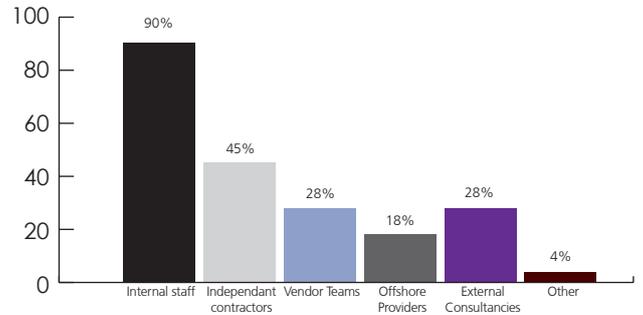
\*Please note that participants were able to select more than one option for this series of questions.

# DEVELOPMENT EXPENDITURE

Responses indicate that, in terms of authorising change, IT development direction is set at a local level (77%) more than a global head-office level (17%), and that the implementation of any development is carried out by internal staff (90%) in conjunction with independent contractors (45%) or external consultancies (28%).

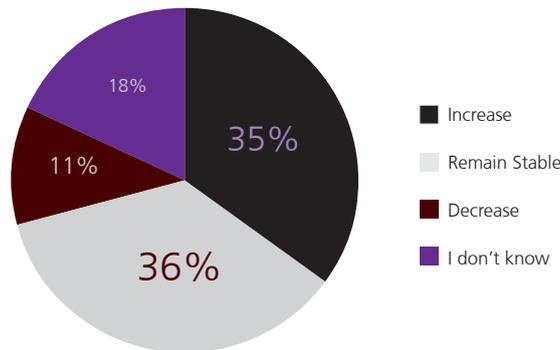


IN YOUR ORGANISATION, WHO SETS THE IT DEVELOPMENT DIRECTION?



WHO IMPLEMENTS DEVELOPMENT IN YOUR ORGANISATION?

Significantly, in a sign of the importance being attributed to software development, 71% of organisations indicated the budget for IT expenditure is either set to remain stable (36%) or increase (35%).



IN THE 2012 FINANCIAL YEAR, DO YOU EXPECT YOUR IT EXPENDITURE TO ...

# FUTURE TRENDS

In a series of open-ended questions, participants were asked their opinions on several broad subjects surrounding the future trends of software development, such as how the advancement of the NBN will change the overall environment, how collaboration software will change how development teams work, the effects of Web 3.0 on software development and how IT leaders can support customer satisfaction.

### “What do you believe is the ‘next big thing’ in software development?”

When the above question was asked in the 2010/11 survey, 19% of respondents replied that the emergence of Cloud computing would be the next big thing. One year later and the theme is similar, with Cloud computing being the most common response (23%).

Answers relating to the continued development of mobile platforms, including applications, accounted for the second-highest proportion of answers with 18% of responses. A further 5% thought that HTML 5 would be the next big thing, with the same number believing that social media

interactivity would be prominent. 4% pointed to Semantic Web and Linked Data as an emerging trend.

Just over 5% of responses indicated outsourcing would be the next big thing and that “soon all development will be done [off-shore]” .

At the other end of the spectrum ,some thought that the next big thing would simply be “an adoption of previous ‘big things’ in a meaningful way” or that there is “no next real big thing, just further extensions and refinement of existing themes” .

### “With changes to group dynamics and increased collaboration in the workplace, Agile may become the methodology of choice for large scale software projects. Do you agree?”

This question provided a clearly divided spread of answers, but those either supportive of the idea or potentially agreeing with it (74%) far outweighed those opposed to it (16%). 10% were unsure.

In defence of the capacity for Agile to perform as the methodology of choice, some pointed to observational trends of “seeing [the] uptake of it more and more”. This was based on the perception that “Agile gives you more flexibility than any other processes” and that “the business of technology is about innovation, so we need processes that support capturing and integrating new knowledge and rapid changes”. While some believe that it may become the

methodology of choice, others believe it already “has been for a few years” and that “the top firms ... have already adopted this process” .

Conversely, those responding in the negative were of the opinion that “there is still a lot of resistance to it” . Its suitability for large organisations was questioned - “lacks [the] structure required for large scale projects” and “perceived as useful for smaller, more user-focused software” - and some believed that “the methodology is flawed” and that there “is no clear and universally accepted explanation of the Agile methodology” .

### “What effects do you think Web 3.0 will have on software development?”

Respondents were generally unsure - remarking that it was “too early to tell” - (25%) , thought it would have a “limited” impact (10%) or were unaware of the existence of Web 3.0 (7%),

Some of the responses indicating Web 3.0 would have a change alluded to a “natural progression, rather than a groundbreaking change” and that it would have a “slow uptake due to commitment to existing applications/technologies” .

Those who indicated an impact on development stated that “the development process may be similar, however it

will change the way a solution is formulated/presented” and it will allow for “even more flexibility and better collaboration in the development process” .

The effect it may have on users was the “more intelligent and efficient search capabilities of search engines” which “could save lots of time in searching”

Another point brought about was the potential for a “security risk” and an expectation for “the network security department to increase staff count in order to manage”

# FUTURE TRENDS CONT...

“With the advances in the NBN, cloud computing, collaboration software and mobile technologies, what sort of impact do you think the consumerism of enterprise IT will have on how software development teams work?”

22% of respondents believe that there will be an increase in teams working remotely, with “software teams in the near future not [being] co-located. Team members will work from home and across multiple office sites”. The environment “will favour working-from-home agreements and distributed teams” with “collaboration activities being held in a centralised e-space”. This “greater emphasis on remote access” will result in “smaller teams working together to deliver a product”, with enterprise focusing “more on the ability of people and teams to collaborate and socialise their development processes over their individual capability as programmers. More weight will be placed on getting the right tools to support development over finding the best developers”.

In conjunction with the ability to work remotely, 14% of respondents cited “an increase in off-shore work” to be an increasing trend. The changing environment may mean there are “better options to outsource to cheaper providers” and “software development for low-cost projects could see outsourcing rise”.

Another area to be highlighted was that “teams will need to be more flexible and open to new ideas” and of the need for “rapid development to keep up with trends”. 9% of respondents indicated this as a likely trend, commenting that “projects/teams will need to be able to respond quicker to consumer demand (and thus changing/evolving client requirements)” while necessitating “rapid development and enhancements [to] allow highly customised applications to be delivered near real-time”

“How can IT leaders support customer satisfaction?”

67% of respondents indicated that the most important way in which IT leaders can support customer satisfaction was along the lines of better communication.

Many of the responses were of a common theme; “listen more closely to what our business really needs”, “talk to the customer”, “listen to what the customer wants and not tell the customer what they need”, “promote better engagement and communication” and “provide clear progress to the customer”.

It was felt that by having more open channels of communication, there is the capacity for IT companies to deliver “what the customer actually wants rather than what they think the customer really needs”. Comments

The advancements in the NBN which “should help multi-region teams work better” may also allow “entirely new applications [being] enabled by order of magnitude increases in bandwidth and computing power” and “the ability to push richer apps out to end users”. It was suggested that this will be driven by the “continual increase of mobile and internet-capable technologies” and was backed up by comments such as the following, indicating that “multi-device capable interactions and interoperability will be at the front and back of any new software development. The internet is fragmenting due to the move from HTML to Apps”. Others agreed, stating that “since focus has now switched to mobile development, there is increased pressure on development teams to move as well ... [believing] that mobile web development will become the primary focus, with browsers taking a back seat”.

Another identified implication of the changing environment was that it “may decrease bespoke applications since the cloud may offer similar applications. Also, development will focus on extending features on the cloud instead of having local vendors where possible”. This was echoed in comments such as “anyone will develop software for the enterprise - not the traditional software teams. [Organisations] could buy app skeletons and re-use for numerous applications for the enterprise instead of starting from scratch”.

on how this could be achieved included “providing open channels to discussion and debate”, “aligning IT to business needs” and being “actively engaged with [the] development team” to work “hand in hand with the business as partners rather than support teams” and “ensure IT satisfies customer expectations”.

Several respondents also acknowledged the desire for “trying to find ways cost can be minimised without impacting quality” or “providing a reliable IT solution in a cost effective manner”. This was summed up in the comment of “knowing what the customer wants but balancing this with the reality of current financial cutbacks”.