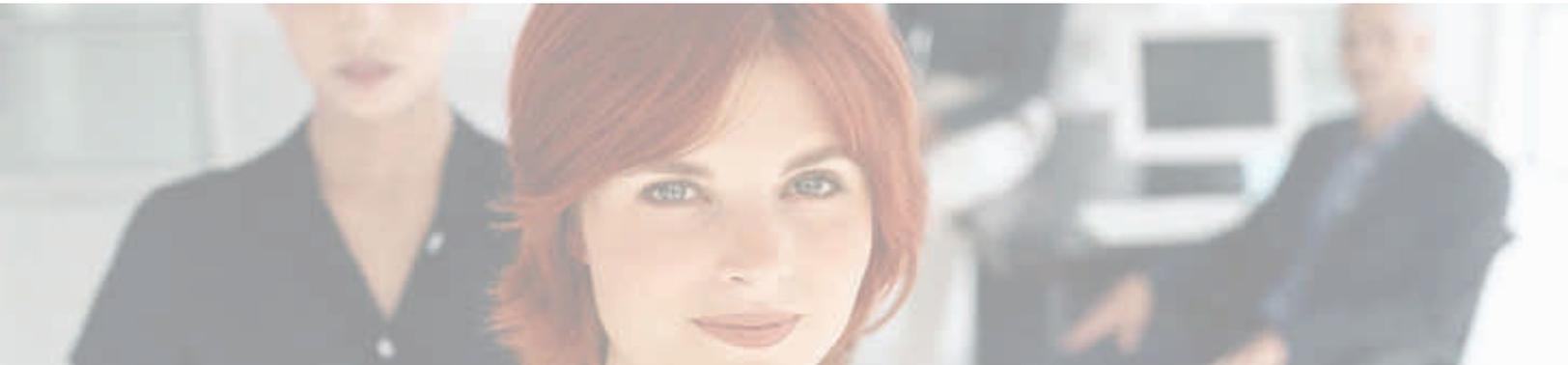


**Software Quality and Testing:
A CIO Perspective**

Survey



Original Software

Survey: Key Points

Key Points

Original Software conducted a qualitative opinion survey of senior IT executives and CIOs from organizations with an average annual revenue of \$5.8 billion and an average IT budget of \$764 million

This survey took place at the Richmond Events 2008 CIO Forum onboard the Cruise Ship "Norwegian Dawn" out of New York City.

> There is strong agreement that technology is having a profound positive impact on all business processes, however the number of companies in a position to truly harness this technology for their own competitive advantage is small.

> The three most important management challenges facing respondents are cost reduction, budget management and integration/consolidation.

> The top three technical issues facing respondents are virtualization, application consolidation and server consolidation.

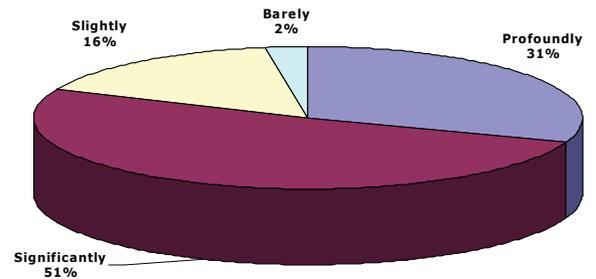
> There is a strong divide as to whether software quality processes are deemed important to the business.

> Undoubtedly software quality issues are gaining more executive mindshare due to boardroom focus on issues such as compliance and the significant investment in quality systems.

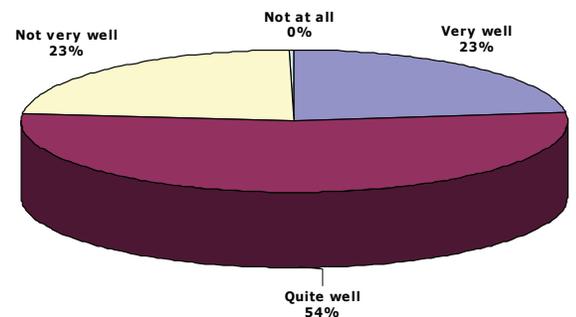
> High quality applications are sighted as the main driver for purchasing automation tools but the vast majority admitted to not being happy with their purchase.

> There is recognition of more options for resourcing testing with outsourcing of software quality processes on the agenda for over half of respondents.

Is Technology Transforming Your Business?



Are You Taking Advantage of This Potential?



Technology: A Business Driver

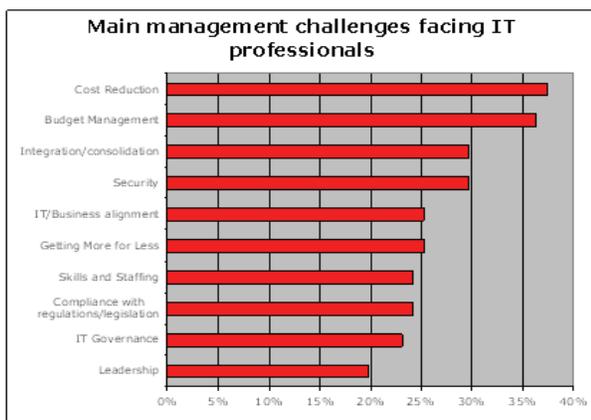
Technology is at the heart of processes used across both the public and private sectors. Many organizations are investing in large technology projects and so we asked our respondents how they perceived technology transforming their business, and were they in a good position to take advantage of the possibilities that technology is giving them to improve and gain competitive advantage?

Although 82% of respondents agreed that technology was having a profoundly positive effect on their industry, 23% of respondents admitted that they were not utilizing technology as well as they might to give them a competitive advantage.

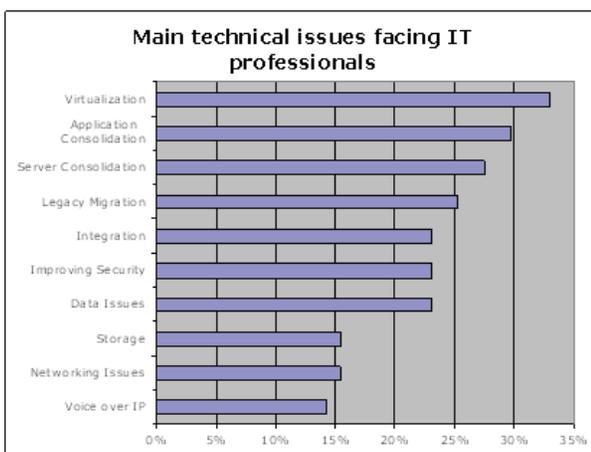
Looking Ahead

When asked what are the top IT management concerns it was perhaps not surprising that the top two had a distinctly financial feel.

Cost reduction and budget management were the top two concerns highlighted by our respondents, with integration / consolidation and data security hot on their heels.



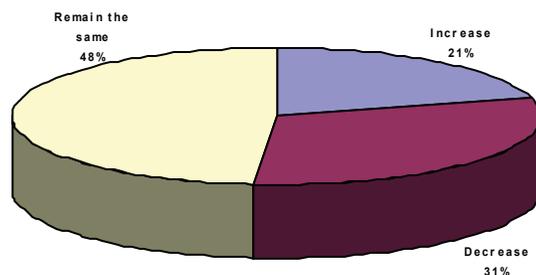
From a technology point of view we asked our respondents the very same question. It seems virtualization and application consolidation are going to give CIOs the biggest headaches over the next 12 months with server consolidation and legacy migration not far behind. Issues surrounding data feature heavily in this list (migration, security and storage) and this is where many companies can use technology to help them. For example, a good software quality solution will be able to help with data extraction and migration, ensure complete data security and integrity even when testing on “live” data, and reduce data to minimise storage costs.



“A good software quality solution will be able to help with data migration and ensure complete data security, even when testing on live data.”

We also asked our respondents if they foresaw any changes in their budget over the next 12 months. There is divided opinion on what budgets will do over the next 12 months. It certainly isn't all doom and gloom as would perhaps be expected, with 69% of our respondents indicating that budgets will either go up or remain the same. Those increases will not be huge (a maximum of around 30%), but conversely those IT leaders who predict a budget cut are not expected anything more than 10%. On the whole, senior IT leaders can look forward to the next 12 months with some degree of optimism.

Do You Predict a Change in Your IT Budget Over the Next 12 Months?



The Growing Importance of Software Quality Assurance (SQA)

Software quality assurance (SQA) is a means of monitoring the software development processes and methods used to ensure quality. SQA encompasses the entire software development process, which includes processes such as design, coding, change management, configuration management and delivery.

We asked our respondents their opinion on the perceived importance of overall SQA within their own organizations.

There was a stark (and somewhat alarming) difference of opinion regarding the perceived importance of software quality. On one hand we see a healthy 44% of people tell us that SQA is either a fundamental business process or of strategic importance. Both of these groups exhibit a proactive approach to improving software quality, understanding the potential effect it has on application delivery time-to-market, competitive differentiation and improving overall software quality.

16% of respondents see SQA as the cost of doing business. This group, although they think software quality is important, are just accepting it as a part of their everyday life and are probably not reaping all the benefits. On the positive side, this indicates that 60% of companies out there think that software quality is important to their business.

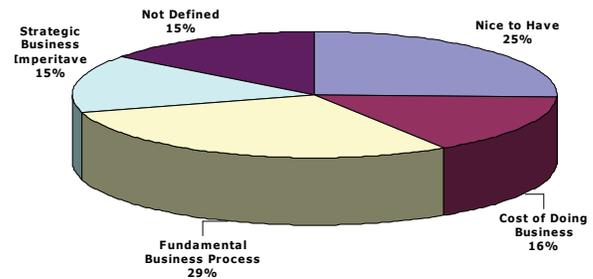
This leaves 40% of respondents who tell us they see SQA as a nice-to-have or are not interested in it at all. Such disregard is surprising given the recent number of high-profile examples of how costly software failures can be to an organization.

Disaster cases this year include Heathrow T5 in the UK and the failed IBM ERP installation into American LaFrance that has caused the fire engine company to go into bankruptcy.

To read more stories like these, visit www.origsoft.com/nightmares.htm

“Such disregard is surprising given the recent number of high-profile examples of how costly software failures can be to an organization.”

What is the Perceived Importance of Software Quality Assurance (SQA) in Your Organization?



Another question we asked our group of respondents was whether they personally get involved in formulating quality policies. There is a strong indication that the general issue of SQA is grabbing the CIO's attention with more than 80% directly involved in formulating SQA policies. Just under half have involvement most of the time, while a further 33% have occasional input. This is further proof that issues around SQA are becoming more strategic in nature with the increased pressures on CIOs to reduce costs and balance resources.

Responsibilities that have previously been delegated to QA Managers and Test Managers now take on added precedence at board level, primarily due to the costs of many of the systems, plus there is much more awareness at a senior level of the potential business risk (in terms of brand and financial loss) that poor software quality brings.

When it comes to budgets there is a mixed story. 40% of our respondents had not invested in software test automation. Only one third of respondents had made a significant investment (over \$100,000), with a further 18% just dabbling in it.

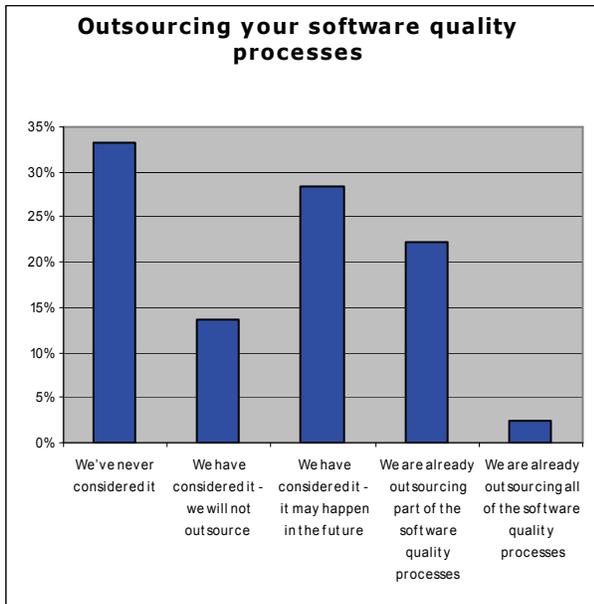
Software test automation tools can have a significant impact on software quality, corporate compliance and application delivery times. It is somewhat surprising therefore that only a third of companies questioned had significantly invested in such tools, although there may be a number of reasons why this is:

Firstly these tools can be expensive, with outlays of \$250,000 not uncommon. Secondly, there is a significant amount of negativity surrounding software test automation, the dominant players are famous for producing overcomplicated products that are very difficult to maintain over any length of time and only ever result in a small automation gain. Many CIOs may be in the position of "once bitten twice shy" if they have had experience of these tools in previous roles.

Outsourcing

Finally, we asked our respondents about their outsourcing strategy. The indicators are that the outsourcing of software testing is on the up. 25% of people asked admitted to already outsourcing all or part of their software quality processes, with another 28% admitting they are considering it in the future.

Outsourcing software quality can provide major cost benefits, especially if coupled with offsite development, however a lack of control over the quality of application is a major reason why so many companies tend to keep their software testing in-house.



Data Security

The growing trend in outsourcing goes hand-in-hand with an increase in data security risk.

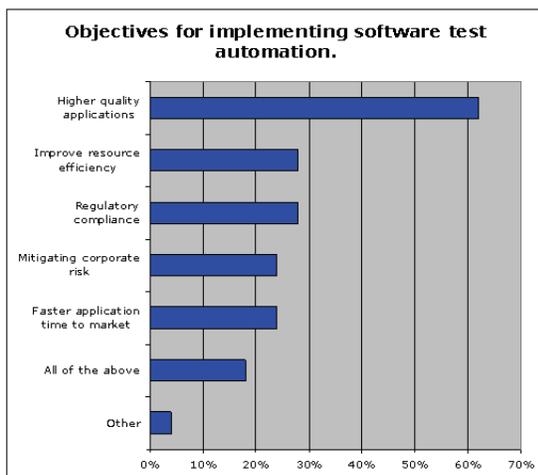
Production data as a source of background data is valuable and desirable for testing and allows the test environment to represent the live system as closely as possible. Clearly however, testing on live data is risky but many companies are sharing such data with outsource partners, with no way of knowing if it is ever compromised.

Including a data scrambling element to the testing process, ideally with some kind of roll back function to be able to reset the data to its original state, will ensure that the test data is not exposed.

Software Test Automation

When the questions turned specifically to software test automation tools, we asked our group of respondents what the main objectives were for implementing automation. By far the biggest driver was to produce higher quality applications (63%). To increase time-to-market for those applications only ranked at 24%, indicating that quality wins out over quantity in the current market.

Improving resource efficiency (28%), mitigating corporate risk (24%) and regulatory compliance (28%) all ranked quite high.



To what extent were these objectives achieved? Only 6% of respondents were completely happy with the outcome of their projects, with 39% being happy and almost half (43%) gaining only minimal or slight benefits from their investment.

Only having 6% of the survey participants completely satisfied with their software test automation tools is a sad indictment for those vendors involved, although not completely surprising.

Why is this the case? How come the leading lights of the software test automation industry have got it so spectacularly wrong? Let us consider a true example:

Original Software recently spoke to a large USA financial company (who shall remain nameless) about their software testing requirements. Back came the reply; "Our automated software testing

requirements are fully satisfied - we have just spent \$1m on a large amount of tools to do this."

After a small amount of persistence, we were able to understand a little bit more of the detail about the very impressive sounding "complete solution" they had just purchased.

- > The "solution" was purchased almost 2 years previously and had taken a team of 6 people that long to prepare for their first automation.
- > The automation could only work on a small stable area of the application.
- > Only 5% of their testing was covered by this \$1m solution because it was too slow and complex to use it on any area of their applications that changed frequently.

So after a \$1m investment, and two years of implementation they had a software solution that was able to automate just 5% of their total testing, and this was the 5% that was stable and relatively risk free. The rest still needed to be tested manually. Probably not the ROI they were looking for!

"Only having 6% of the survey completely satisfied with their software test automation tools is a sad indictment for those vendors involved, although not completely surprising."

The antidote? Next generation software testing solutions from Original Software are designed very differently to the old traditional style tools from the rest of the industry. Therefore three big issues (long set up times, specialist workforce needed and minimal coverage) are nullified. Original Software customers start saving within days and weeks, not months, and with our unique self healing technology, your testing assets become re-usable, meaning a much wider automation coverage. Couple this with an easy interface that enables all employees to get involved in test automation, and suddenly the benefits promised by automation can be realized.



Automation Can Work!

Here are just a few examples of how Original Software's next generation software test automation has helped leading companies around the world.

Capital One saved 75% of "business as usual" testing of web site.

Cargill save over \$270k yearly, testing JDE.

HSBC save 50% of time in unit testing Coda changes.

BP/Castrol save 90% of time in unit testing batch processes.

Summit Holdings (Insurance) saved 75% of testing resource.

Skandia Group saved 90% of effort in regression testing.

NJ Natural Gas built test environments in 4 days rather than 4 weeks.

Royal Bank of Scotland reduced their UAT from 6 weeks to 1 week.

About Richmond Events

Richmond Events organizes and executes strategic business forums throughout the US, UK and Europe.

These Forums utilize Richmond's proprietary matching systems, RichMatch™, to efficiently bring industry decision makers together to interact with their peers, learn from experts and meet with vendors.

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About Original Software

Original Software offers next generation automated software testing and quality assurance solutions that deliver tangible benefits across a wide range of IT and application environments. As a recognized innovator, Original Software's goal is to reduce business risk and improve application time-to-market for IT departments through the development of class leading automated solutions.

Over the last 10 years, more than 400 organizations operating in 25 countries have come to depend on Original Software for their software testing solutions. Current users range from small software development shops to major multinationals, including: NYSE, Cargill Global Financial Solutions, Circuit City Stores, Pfizer, BP, DHL, Coca-Cola, Skandia and hundreds of others.

Original Software operates central offices near Chicago, and London. Our solutions can be obtained through these offices or through a network of qualified and knowledgeable business partners throughout Europe, the Middle East, Australasia and the Americas.