

TURKEY SOFTWARE QUALITY REPORT

2011-2012

TURKEY
SOFTWARE QUALITY
REPORT

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FOREWORD

Turkish Testing Board (TTB) is pleased to bring you the 2011-2012 edition of the Turkey Software Quality Report (TSQR). This report is designed to help companies to make paradigm shifts in their mindsets. It not only draws a clear picture of the current situation in the Turkish market but also sets the de facto standards and trends for future information technology (IT) projects. As IT projects begin to fail more frequently in our market, this kind of a report will be a reference point for all decision makers.

As is always the case, we have tried to listen to the market and sent this survey to over 250 CXOs, IT directors, QA managers, business analysts, project managers and engineers at various companies. The survey also has a good distribution of company sizes; 48,2% of respondents are employed by large companies (500 to 2,000 employees) followed by 30,0% mid-size companies (50 to 499 employees), 11,9% by small companies (less than 50 employees), and 9,9% by enterprise companies (more than 2,000 employees). (See Figure 1.)

With the help of TSQR, we are trying to lay down the foundations of a healthy discussion platform for the development of Turkish IT market. TSQR will be presented at opening ceremony speech of TestIstanbul 2011 on May 26th initiating a series of keynotes, presentations, discussions and panels during a two-day conference.

We would like to thank all TTB members and professionals who took the time to complete the survey and contribute to this report.

We are looking forward to meeting with you at TestIstanbul on May 26th, 27th and discuss the findings of this report face to face.

Turkish Testing Board

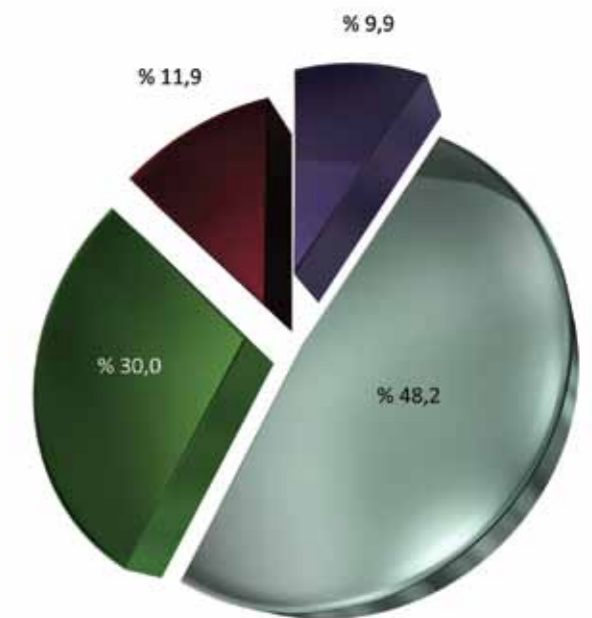


Figure 1

- Enterprise
- Large
- Mid size
- Small

EXECUTIVE SUMMARY

Turkey Software Quality Report is designed according to four main topics:

Testing Organization and Processes

Test Automation Tools

Testing Trainings

Usability Testing



Overall Turkish software testing market is in between introduction and growth stages where companies have a long way to achieve high quality projects. We hope to see their progress in TSQR 2012 – 2013.



Testing Organization and Processes

The awareness level of market about testing is still in the early stages causing test maturity levels of companies to be very low. Most of the companies do not have test teams or have recently established their teams. Lack of having test teams push developers, business analysts and even end users to do the testing which is not a good operating model. In more mature companies, test teams are perceived as cost generating support centers which should report to development teams. The existence of test teams in these companies does not guarantee their success since the budget and power needed to carry out their core responsibilities are not provided.

Test Automation Tools

Market perceives test automation as a silver bullet to solve their testing efforts. With the help of one click, they believe they will not spend time on testing and will have high quality softwares and applications. As from their answers, it is clearly understood that they are missing a very important point: test automation tool is a tool just like every other tool which we are using in our daily life to do our work more efficiently. If you are doing the wrong work, introduction of a test automation tool will only expedite the chaos. For a successful test automation tool implementation, companies need first common testing culture, well defined test processes and established testing organizations.

Testing Trainings

Companies are investing in testing trainings and tester certifications. They are sure that certification will create tester identity and identity will drive awareness about testing. Without the acceptance of testing as a separate profession and tester's role as an independent role, companies will not be able to implement successful IT projects.

Usability Testing

In TSQR 2011 – 2012, a special section on usability testing is reserved. Since the success of IT projects is becoming more and more dependent on customer satisfaction, usability and usability testing appear to be an important area for evaluation. But the answers given in this section are not promising. Understanding of usability across the market is limited to user interface design which is carried out by business analysts, developers or advertising agencies. From testing perspective, some attention is given to user observation but due to its difficulty of recruiting right users for usability tests, it is not very effective and efficient.

Testing Organization and Processes

Q1. Who is responsible for software testing in your company? (you can select more than one) (See Figure 2.)

Analysis of the current situation

Market perceives software testing still as a support function that may be carried out at the end of a software development project. This approach is still accepted by most of the companies due to old habits of waterfall methodology and short term cost cutting initiatives. This year's survey indicates that developers, end users and business analysts are dominating the testing efforts.

Future Predictions

In five years' time, we expect software testing efforts will be carried out under the control and supervision of testers whose only responsibility is testing. But this evolution will not be happened one night, it requires a continuous change management and involvement of all stakeholders. It will be painful. In the long run, we also expect the growth rate of insource test engineers will outpace the growth rate of outsource testers. Most of the growth of insource testers will come from the recruitment of companies' already outsourced testers as their employees.

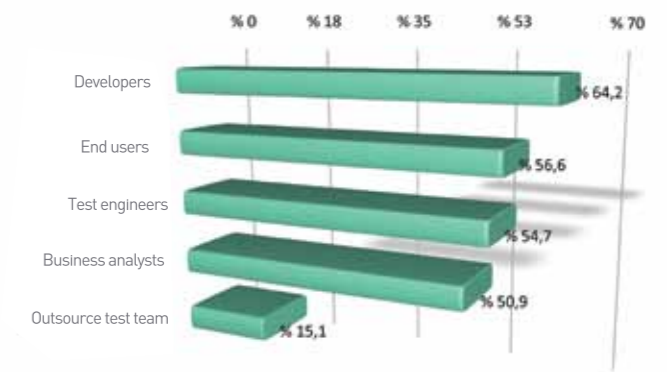
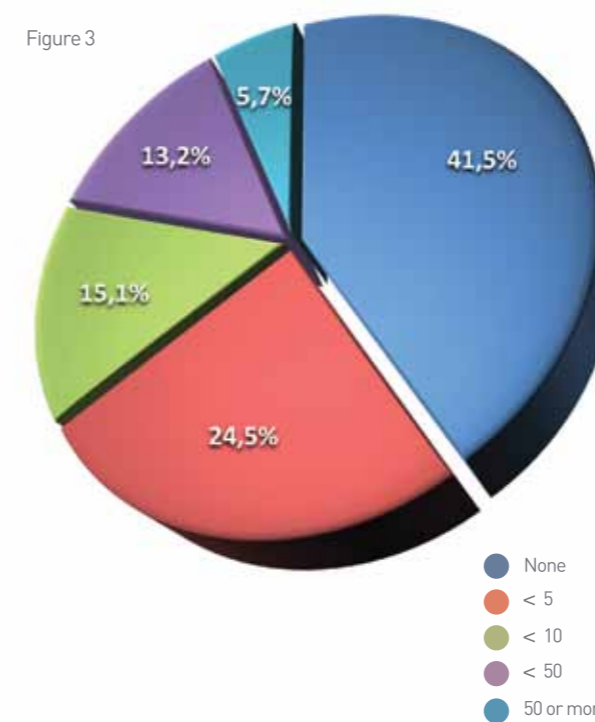


Figure 2

Figure 3



Q2. What is the total number of employees whose titles are associated with testing? (e.g. test engineer, test specialist, test team leader, test manager etc.) (See Figure 3.)

Analysis of the current situation

More than 40% of the respondents shows a clear indication of lack of importance of software testing in most of the companies. Although the remaining 60% told that there exists titles associated with testing, this does not mean that these companies have allocated necessary power and budget for their test teams to run their duties efficiently and effectively.

Future Predictions

Turkish test professionals will overcome this identity dilemma in the coming years with the help of certifications like ISTQB Certified Tester. The creation of identity will be followed by segregation of roles in the company which will lead to separate test teams and responsibilities. Even in the long term, specialization will take place inside the test teams and titles like performance tester, automation tester, usability tester etc. will be frequently used among test professionals.

Testing Organization and Processes

Q3. To whom does your test team report? (See Figure 4.)

Analysis of the current situation

Most testers are still part of the overall development team and often report to developers. This limited their ability to be independent evaluators as the testing teams were under the influence of developers. This one way hierarchy also creates time pressure on testers where most of their time is stolen by developers.

Future Predictions

As testing emerges as an accepted professional career with the help of certifications, independent test teams will be nourished and co-exist with development teams. In the long run, we expect test teams to be as powerful as financial audit teams and report directly to Board of Directors. As is the case in most of the financial institutions where head of financial audit is a perfect candidate for the general manager position, heads of test teams will be the best candidates for CIO positions. Their cross functional, end-to-end responsibility and their chance to access to valuable information throughout the company will expedite this process.

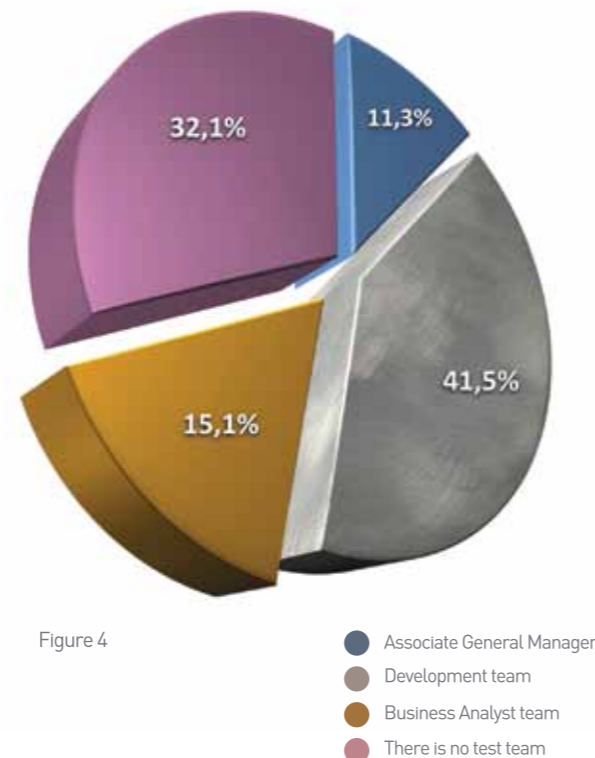


Figure 4

- Associate General Manager
- Development team
- Business Analyst team
- There is no test team

Q5. Which services is your company getting from professional testing service providers? (See Figure 6.)

Analysis of the current situation

Getting professional testing services is still perceived as a nice-to-have and a costly initiative which is prevented by most of the companies. This is due to mostly in-house handling of testing. Only tester body shopping has passed the 10% line but this is also limited to utilizing outsourced testers just as a labour force rather than know-how transfer.

Future Predictions

The hidden part of the iceberg which consists of test processes, test design techniques and methodologies will push organizations harder to invest more in professional testing services. Especially, test process consulting will create the highest value and demand in the near future. Without well defined, established test processes, investment in test automation tools and testers will not create the desired value.

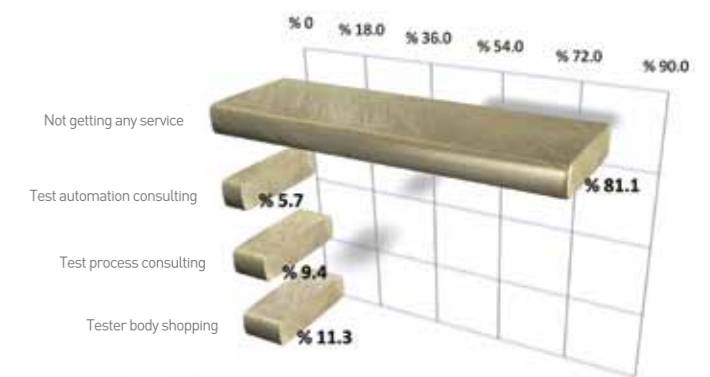


Figure 6

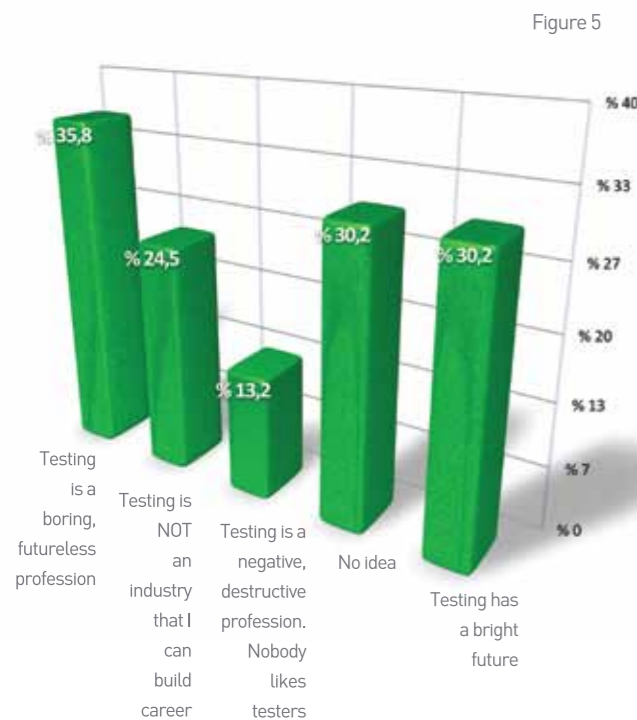


Figure 5

Q4. How are your employees' perception of testing and a career in testing industry? (See Figure 5.)

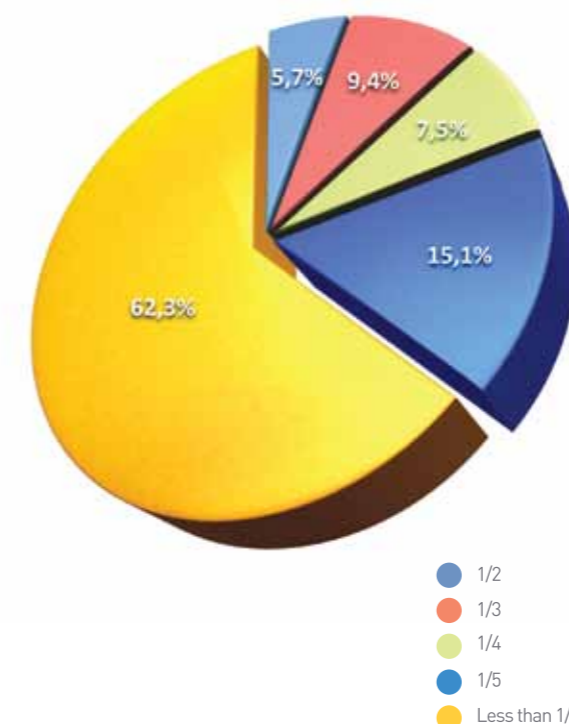
Analysis of the current situation

Almost 70% of respondents say that testing and testers are perceived negatively in their organizations. This is not a surprise for most of us where testers block the new software releases and make development teams miss their deadlines. This negative perception of testing makes it more difficult to attract bright candidates to apply for testing jobs.

Future Predictions

As the product risks associated with the projects increases, the role and importance of testing will be much more appreciated. Perception of testers and testing will move from being a blocker to being a witness who tells the truth regardless of any concern. This will increase their credibility and acceptance in the industry. Also as the specialization takes place among testers and primitive way of doing testing where tester only makes mouse clicks has disappeared, the salaries will dramatically increase creating a more attractive career path among other IT careers.

Figure 7



Q6. What is the ratio between testers and developers in your organization? (See Figure 7.)

Analysis of the current situation

More than 60% of the respondents say that they allocate less than one tester per five developers in their organizations. This ratio gives clues about two different approaches:

- Organizations do not consider testing as an item during their budget planning process and do not allocate any budget or
- The allocated budget for testing is consumed by other functions especially by the development teams.

In both cases, it is clearly obvious that testing is still considered as a cost center rather than a profit center.

Future Predictions

As organizations pay more attention on Return On Investment (ROI) metrics, the importance of testing hence the budget allocated for testing efforts will definitely increase. The root cause of the current situation mostly relies on the wrong key performance indicators (KPIs) that companies are putting into practice. As more KPIs related to total cost of ownership (TCO) and quality are put into practice, testing and testers will gain the importance and attention they deserve.

Testing Organization and Processes

Q7. What is your expected rate of growth of your testing organization in the next years? (See Figure 8.)

Analysis of the current situation

The desire to invest in testing and testing organization shows that the current number of testers and allocated budgets are not enough for the well being of the organizations. Almost 70% of the respondents say that they are estimating a clear growth in their testing efforts. Even 11% is expecting a triple digit growth.

Future Predictions

This huge growth potential in testing proves our expectations of testing as an industry with bright future.

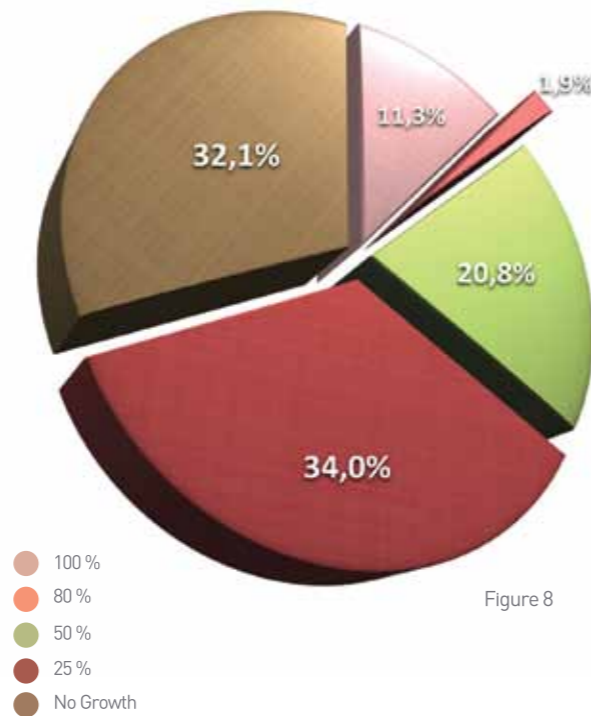


Figure 8

Q9. How does your test team execute tests? (See Figure 10.)

Analysis of the current situation

Testing still lacks of planning and documentation. It is performed with improvisation, the tester seeks to find bugs with any means that seem appropriate. With the current time pressure on testers, she has to find as many bugs as she can in a limited time frame. This can be criticized because it isn't structured, but this can also be a strength since important things can be found quickly.

Future Predictions

As more time and budget allocated and more importance is given to testing, more structural methodologies will be adapted by the companies. Also the companies' willingness to manage scope creep and their investment in traceability will make writing test cases be inevitable.

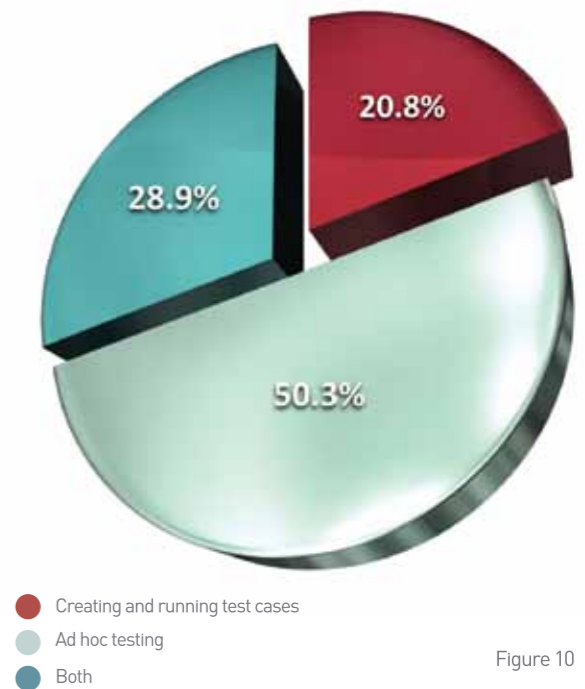


Figure 10

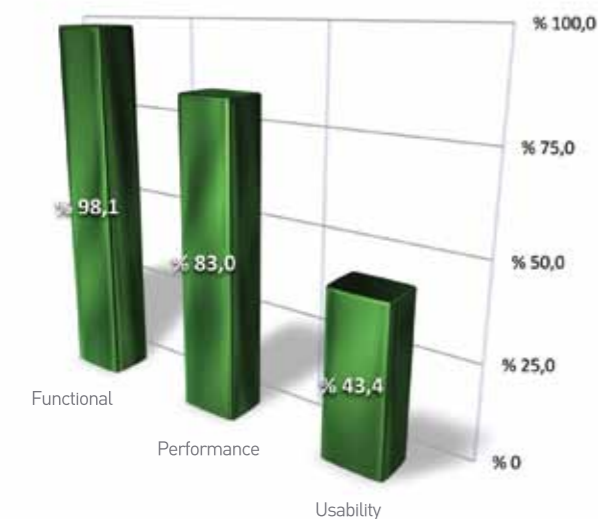


Figure 9

Q8. Which of the below test types is your company carrying out? (you can select more than one) (See Figure 9.)

Analysis of the current situation

As expected, functional tests are leading the testing efforts in the companies which is followed by performance tests. Although usability tests received 43,4% of responses, we suspect that there is a misunderstanding between functional tests and usability tests. Instead of selecting functional tests, they erroneously selected usability tests. So this graph needs adjustment where the percentage of usability tests should be much less.

Future Predictions

The order and importance of tests will still be the same:

- First functional tests which focus on the 'what' aspects of requirements and than
- Non-functional tests which focus on the 'how' aspects of requirements.

The question that we have to answer is 'under non-functional test category which test types will receive the highest attention?' Our expectation is: as customer satisfaction and empowerment becomes more important, usability will surpass the performance tests and become the de facto leader under non-functional test category.

Q10. What is the adoption rate of Test Maturity Model Integrated (TMMi) framework in your organization? (See Figure 11.)

Analysis of the current situation

The lack of structural approach to testing causes the lack of awareness about test processes and test process maturity frameworks. More than 90% of respondents have general or no idea about the framework which shows a clear indication of lack of importance on test processes.

Future Predictions

As the importance of testing increases, organizations will invest in testing in the below order:

- Testing training and tester certification
- Test processes
- Test design techniques
- Test automation tools

The highest priority will be given to testing training and tester certification since without a well defined common testing terminology and culture, none of the testing efforts will be successful. This will be followed by test processes which lay down the necessary foundations of test design techniques and test automation tools for the execution of effective and efficient tests . Without having well defined test processes and high test maturity levels, any powerful test automation tool will be a shelfware rather than a software.

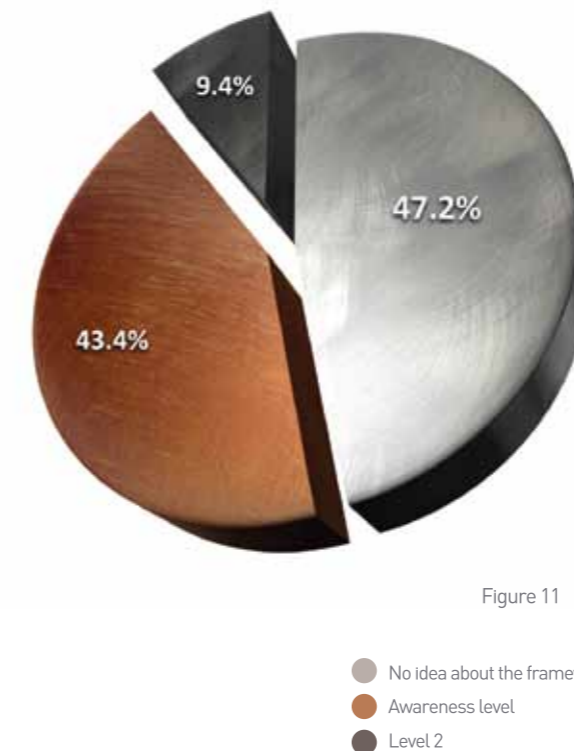
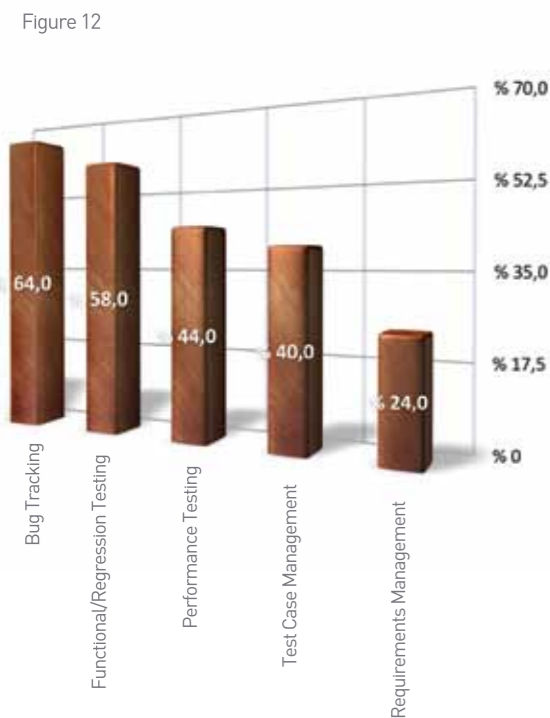


Figure 11

Test Automation Tools

Q11. What is your test automation's purpose? (you can select more than one) (See Figure 12.)



Analysis of the current situation

The market's understanding of testing is the process of bug finding rather than bug prevention. Because of this, most of the testing budgets are spent on the tools mostly focused on preventing the symptoms rather than removing the root causes.

Future Predictions

The increasing awareness about total quality management and increasing product risks will lead to a shift in market's perception of quality from 'Quality can be inspected into a product' to 'Built in Quality'. 'Built in Quality' approach requires quality assurance of all artifacts produced throughout the SDLC. The most important of artifacts is requirement on which every artifact is dependent. So we expect more automation tool investment in the early phases of SDLC especially in requirements management.

Q12. What is your utilization level of your test automation tools? (See Figure 13.)

Analysis of the current situation

70% of respondents say that ROI from their test automation tools is less than 50%. This is a clear indication of software becoming a shelfware. It is neither test automation tools' nor tool vendors' fault but it is organizations' weaknesses to identify the right tool for their needs and then implement it right.

Future Predictions

As organizations become more aware of testing and its objectives, they will better identify their needs and design their test processes accordingly. If they align their test automation selection strategy with their needs and well defined test processes, they will achieve a much higher ROI from their test automation tool investments.

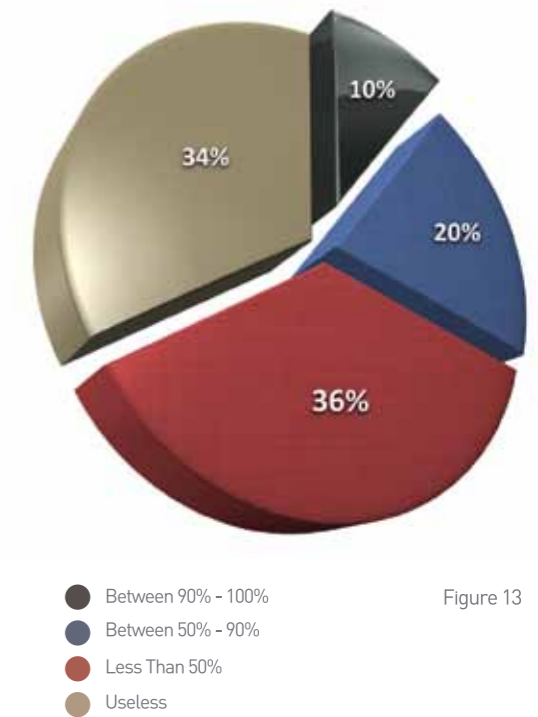
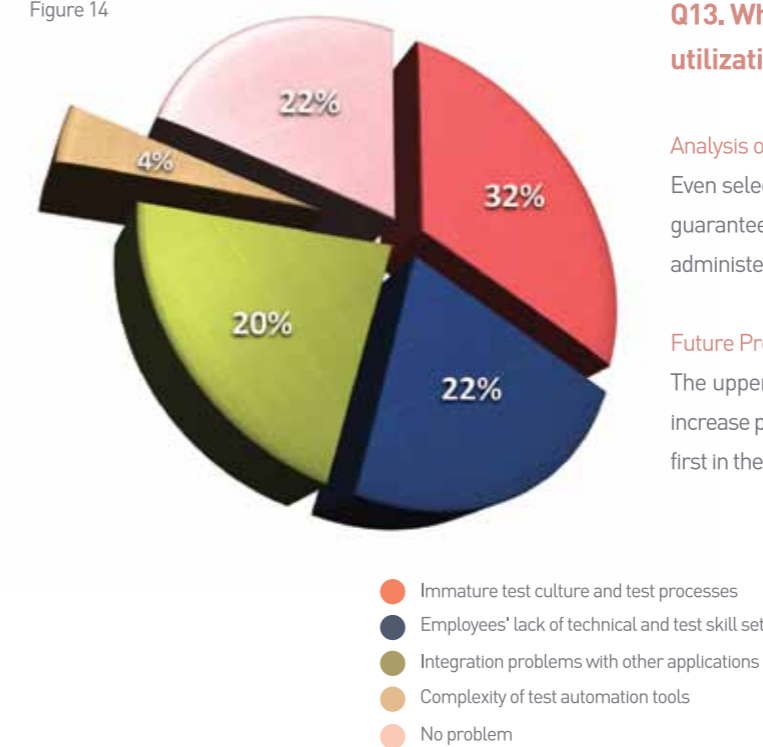


Figure 13

Figure 14



Q13. What is your organization's reason behind your low utilization of test automation tools? (See Figure 14.)

Analysis of the current situation

Even selecting the best fit test automation tool for the company does not guarantee its success. Companies need highly skilled testers to run and administer these tools.

Future Predictions

The upper management's expectations from test automation tools will increase putting more pressure on ROI of these tools. Test teams investing first in their people's training, than test processes will get the highest ROI.

Testing Trainings

Q15. What is the subject of the software quality training your company taken or would like to take recently? (you can select more than one) (See Figure 16.)

Analysis of the current situation

Market is now putting more emphasis on testing and business analysis rather than development due to increasing importance of testing and business analysis. Ten years ago, since there was one man show, programmer carrying out all the activities of SDLC including analysis, design, development and testing, organizations were only investing in software development trainings which seemed like the only area needing improvement at that time.

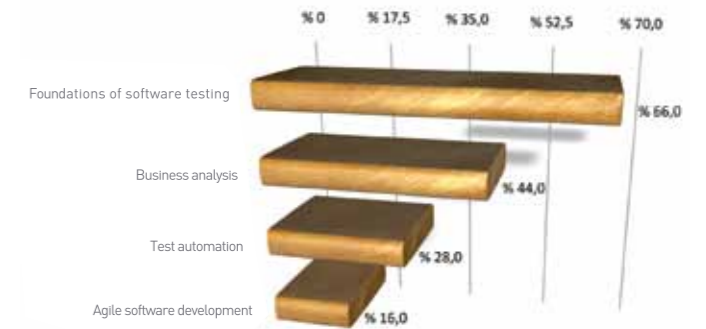


Figure 16

Future Predictions

Investment in testing and business analysis will exponentially increase in the coming years. We will also experience diversification under testing and business analysis trainings.

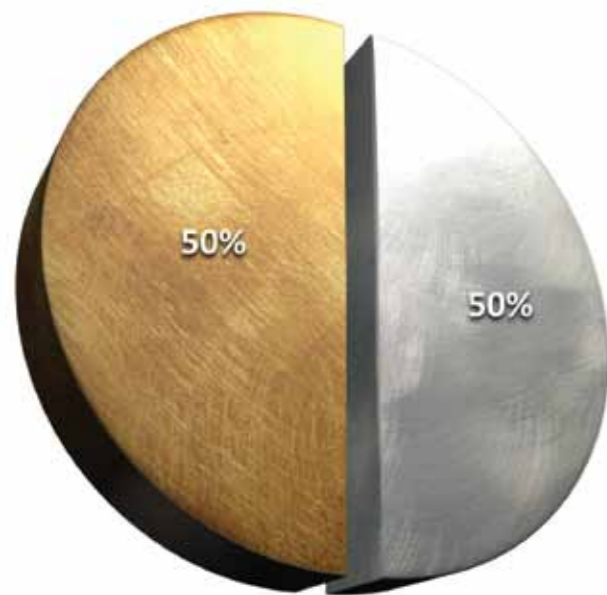


Figure 15

Q14. In the last year, has your employees taken testing trainings? (See Figure 15.)

Analysis of the current situation

Companies are paying much more attention on testing in the recent years. 50% of the respondents proves this trend.

Future Predictions

Quality is not the role of one person or department in the organization, it is a culture. To establish this culture, every stakeholder in the SDLC should have a basic understanding and application of fundamentals of testing. In the coming years, taking courses regarding fundamentals of testing will be mandatory for every IT professional.

- Yes
- No

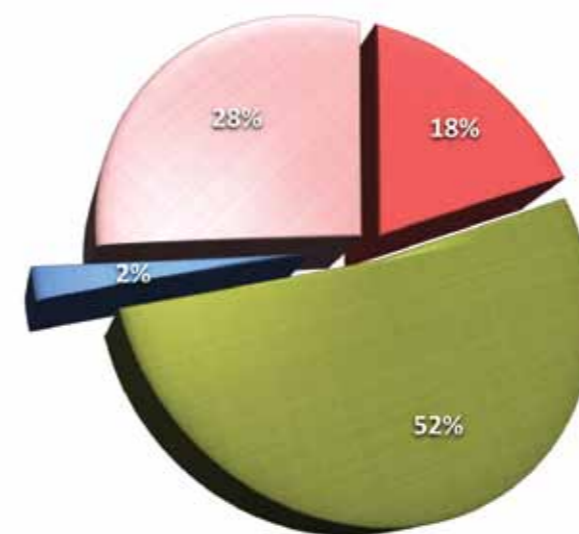


Figure 17

Q16. How important is it that your employees' having internationally recognized tester certification? (See Figure 17.)

Analysis of the current situation

70% of the respondents say that internationally accepted tester certification schemes are important. Tester certification not only creates awareness about testing and testers but also differentiates certification holders from other professionals in their organizations. Nowadays, tester job postings includes ISTQB certifications as a must to qualify for the related jobs.

Future Predictions

Demand for Foundation Level certifications will be followed by demand for Advanced Level certifications. Unless foundation level, advanced level requires specialization in the testing career. Currently, ISTQB offers test analyst, technical test analyst and test manager streams under advanced level curriculum. We expect test analyst stream will be the most popular among them.

- Very Important
- Important
- Not Important
- Do Not Mind

Usability Testing

Q17. Have you or your team taken any usability trainings in the last year? (See Figure 18.)

Analysis of the current situation

Companies are not still sure whether to invest in usability. Some of them are not even aware of such a concept. This is a natural outcome of designer's mental model of thinking where business analysts, developers or project managers are the decision makers on behalf of their customers during IT projects. Customers or clients are not empowered to take control of their needs or expectations from a product or a service.

Future Predictions

In paralel to our future predictions of question 8: as customer satisfaction and empowerment becomes more important, organizations will invest more in usability trainings, processes, methodologies and tools.

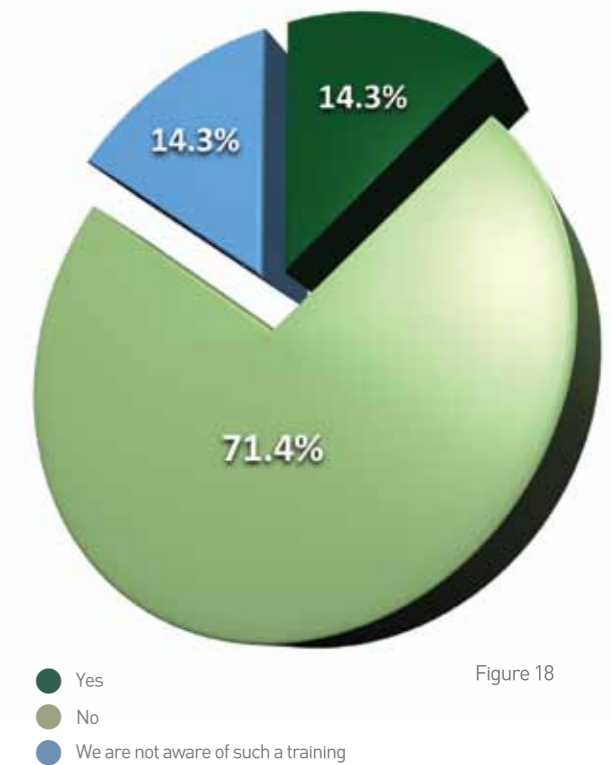
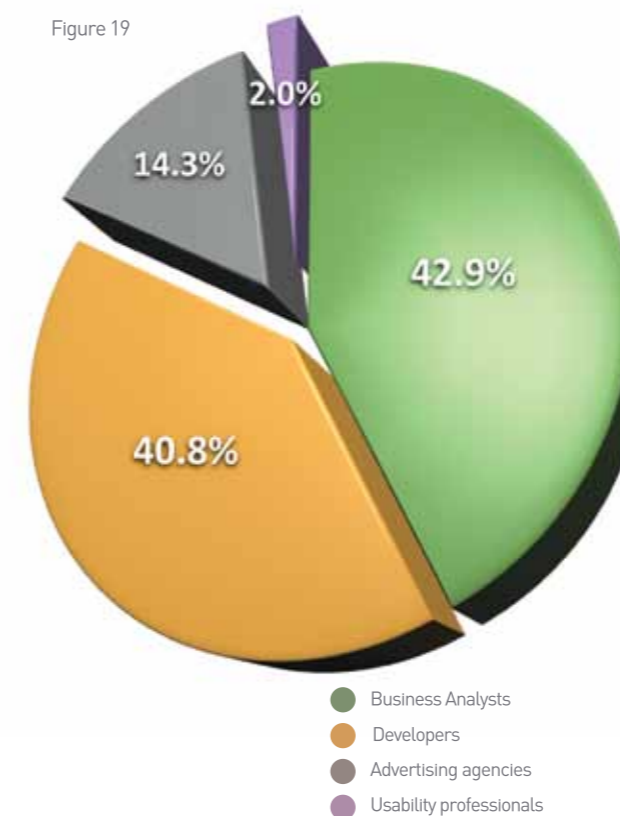


Figure 18

Figure 19



Q18. Who is responsible for designing the user interfaces in your company? (See Figure 19.)

Analysis of the current situation

Designing user interfaces is perceived as the secondary or third responsibility of business analysts or developers. User interface design is not considered as a separate discipline. Even worse, advertising agencies who have little knowledge about their clients' customers are in charge of user interface design.

Future Predictions

The concept of 'user interface design' will evolve into 'user experience design'. User experience design requires well understanding of user needs then transforming them into functional requirements, content requirements, interaction design, information architecture and so on. These efforts and specialization can not be carried out as a secondary job of business analysts or developers, usability will emerge as a bright career path and usability specialists will be one of the most desired professionals in the IT industry.

Usability Testing

Q19. Which techniques is your test team using while conducting usability tests? (you can select more than one) (See Figure 20.)

Analysis of the current situation

User observation is the leading technique among usability tests.

Future Predictions

With the increasing demand for usability tests, the demand for user observation will increase. The main barrier for a successful user observation session is the reach and recruitment of the right sample of users. Even the company thinks that it has recruited the right users, they may not show up for the session.

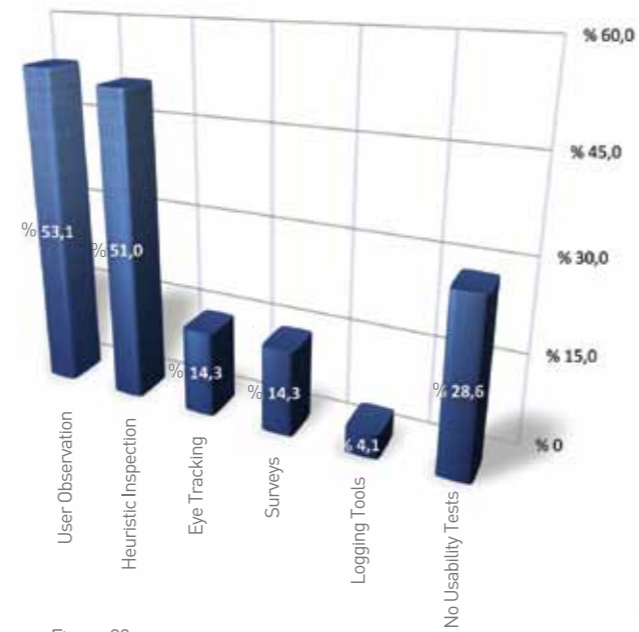
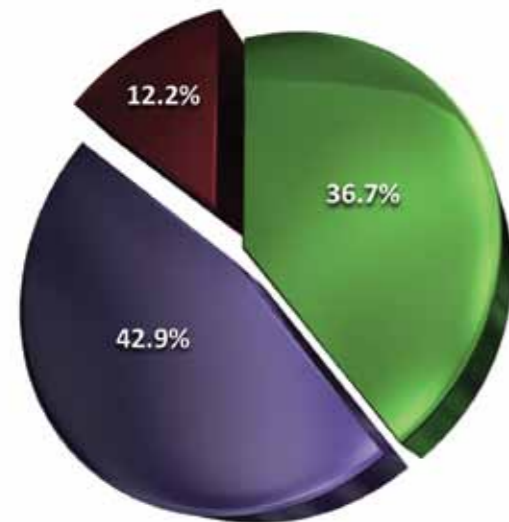


Figure 20



Q20. Has your test team made use of a usability lab for its usability testing? (See Figure 21.)

Analysis of the current situation

Only 12% of the respondents say that they have utilized an usability lab for their usability tests. The scarcity of usability labs, lack of awareness about usability and high pricing of current labs limit the usage of these facilities

Future Predictions

The increasing investment in usability labs and increasing competition among independent usability lab rental companies will bring the rental prices of usability labs down enabling more organizations to utilize usability labs.

Figure 21

- We have not heard usability lab before
- We are aware of usability labs but not used one yet
- We have utilized

ABOUT



www.turkishtestingboard.org

Turkish Testing Board (TTB) is the regional body representing and supporting software testing professionals in Turkey. The TTB was constituted in Istanbul in September 2006 as a non-profit organisation and a member of the International Software Testing Qualifications Board (ISTQB).

TTB is responsible for certification of testing professionals to the standards and syllabi laid down by the ISTQB. TTB also acts to generate public awareness of the economic and risk mitigation benefits that professional software testing practice offers.



www.testistanbul.org

TestIstanbul is the largest conference in South East Europe and Middle East on software testing. TestIstanbul introduces the region not only to the advancements in software testing but also to the advancements in other streams of SDLC like business analysis, design, development and usability. With its almost 700 participants from all over the world every year, TestIstanbul creates a healthy discussion and networking platform for IT professionals and companies.



www.istqb.org

ISTQB is a global, non-profit organization responsible for enabling test professionals, through globally accepted software testing certification standards to support their career development. As of October 2010, ISTQB has issued over 165.000 certifications in more than 60 countries