

Time Spend Analysis.

A 6 week study of the time spent on activities by QA Teams.

Discussion Document
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1.0 OVERVIEW

Initiation of this project was prompted by the need to assess the focus of effort by the various QA Teams belonging to the client. In addition, to provide a baseline against which to deliver measurable improvements in operational activity and associated costs.

The purpose of the project was to gather quantitative and qualitative data pertaining to the activities of the individual team members. The objective of which was to ensure a more complete understanding of both the assigned tasks and unassigned activities performed by staff within the QA Teams.

This understanding there by allowing team management to address a number of considerations including:

- Time spent on assigned tasks
- Scale of unassigned activities and associated time required to perform them
- Actual availability to assigned tasks and the impact of unassigned activities
- Opportunities to improve task assignment time

This project ran over a period of six weeks and involved all members of two independently run QA Teams covering separate areas of the clients business.

2.0 PARTICIPANTS

All participants (P[6]) were drawn directly from the QATEAMA (Qa[2]) and QATEAMB QA (Qb[4]) Teams and no other participants were permitted to take part in the project. The participants breakdown was:

- QATEAMA
 - 1 x Test Manager
 - 1 x QA Engineer
- QATEAMB
 - 1 x Test Manager
 - 3 x QA Engineer

The QA Engineers within both teams were mixed between permanent (QATEAMB[1]) and contract (QATEAMA[1], QATEAMB[2]). However, it was not considered this would affect the representativeness of the data gathered.

Participants were encouraged to provide as much descriptive information for recorded Tasks as they felt comfortable doing. All participants were advised that the project was not intended to gather individual performance management collateral. The project purpose and objective were explained before commencement.

3.0 METHODOLOGY

The data gathering methodology was to have each team member complete an Excel based Daily Activity Sheet that recorded time spent on predefined Task Types.

This sheet allowed the team member to record their activities against a pre-set list of Task Types presented via a drop down menu. Activities were recorded against Task Lines representing 15 minutes and were completed for the duration of the participants working day. Time spent on these Tasks being summarised as a percent of the total time recorded each day.

A description could also be entered on each Task Line where the team member wished to provide additional descriptive information. To enable illustrative costs to be built up for each Task Type a cost of £40.00 was assigned to each hour, shown as £10.00 for each 15 minute Task Line on the sheet.

The resulting spreadsheet of data is useful as it allows access to both the large numerical picture and individual qualitative responses.

4.0 LEXICON / BASICS

Daily Activity Sheet

The Time Spend Workbooks consisted of five Daily Sheets on which participants would enter the data and one Weekly Summary sheet that automatically calculated summary data. In addition instructions on the use of the Workbook were provided on a Read Me worksheet.

These workbooks were completed electronically and emailed by the respective Test Managers at the end of each week to the Consultant running the study for review and collation.

Task Types

- **Review Test Documents**

When you are re-reading documents of your own or those in your team choose this task. This can include reading through Test Cases, Plans, Breakdowns and Scripts

- **Writing Test Documents**

When authoring the Test Breakdowns, Estimations, Test Plan, Cases and Scripts record the time against this task.

- **Initial Test**

On testing a new feature or bug for the first time or executing a Test Case for the first time record the time against Initial Test.

- **Re-Test**

When testing a feature or bug or running a Test Case a further time use this task

- **Closing Test**

After testing has been completed and when writing up test results for the test run, completing reports or release notes enter the time as Closing Test

- **Waiting on Others**

If at any time you are unable to progress due to a need for information or support from others show this as Waiting on others. This can include delays due to environmental issues and other 'down time'

- **Meetings & Admin**

Planned meetings, email and general personal and team admin

- **Customer Calls**

Time spent responding to requests or calls that are generally unplanned, whenever you get an 'Urgent' email or a request to 'just have a quick look at this for me', record it as a customer call

5.0 KEY FINDINGS

5.1 Availability for Managing and Doing

Around a third of time available across the teams (QATEAMA[28%], QATEAMB[33%(-Tte)]) was spent delivering all forms of “Meetings and Admin” and “Customer Calls” task types. On an individual basis this represented up to 5.5 hrs (QATEAMA[74%], QATEAMB[70%]) of the Test Managers time each day but as low as a 1.25 hrs (QATEAMA[18%], QATEAMB[17%(-Tte)]) of the Test Engineers time.

Before conducting this study the Test Managers were asked: “How much time do you think you spend between ‘managing’ and ‘doing’ as a percent of your time?” Answers were given of ‘50%:50%’ and ‘25%:75%’. Meaning the Test Managers perception was that they had around 2.5hrs to 3.5hrs more time available for assignment to test tasks than was available if they fulfilled their management commitments.

The significance of these figures can be realised when considering how assignment to testing tasks within project schedules is usually approached. Where the Test Engineer is expected to be available for 7.5 hours (A'ty=100%) each day they are usually assigned at 7 hours (A'ty=93%) on resource plans.

For the Test Engineers assignable time after taking into account the above Task Types represented slightly over 6 hours (A'ty=(QATEAMAt[82%], QATEAMBte[83%]) each day.

For Test Managers the need to deliver on a greater level of the Task Types above meant availability for assignment to testing tasks was just under a third of their day (A'ty=(QATEAMAtm[26%], QATEAMBtm[30%])) or an assignable time of around 2 hours each day.

At the time of initiating this study there was no clarity on an accurate figure for availability of Test Managers for assignment to testing tasks. Interestingly, when the figure of around 2 hours (A'ty[30%]) was shared with the business it was rejected and questions around focus of work and process efficiency were raised.

5.2 Preparing for Testing

Across both teams around a fifth of their availability (QATEAMA[23.5%], QATEAMB[18.5%]) was spent on tasks to enable them to test. This included the Task Types of “Review Project Documents”, “Review Test Documents” and “Writing Test Documents”.

For the Test Engineers, time spent preparing for test each day was around 1.5 hours of their 6 hour availability (QATEAMA[20%(-Ttm)], QATEAMB[22%(-Ttm)]). For the Test Managers the time spent preparing for testing varied between 14 and 40 minutes (QATEAMA[3%], QATEAMB[9%]) of availability each day.

5.3 Delivering Testing

For both QA teams the average time spent by all staff on tasks that related directly to executing tests was around 3 hours (A'ty[40%]) each day. This includes Task Types of “Initial Test”, “Re-Test” and “Closing Test”.

The breakdown for individual teams saw around 1.5 hrs to 4.25 hrs of the availability across the team (QATEAMA[22%], QATEAMB[56.5%]) being spent on testing tasks by both the Test Engineers and Test Managers. For the Test Engineers alone between 4.5 hrs and 5 hours (QATEAMA[60%(-Ttm)], QATEAMB[68%(-Ttm)]) of their overall availability was spent on these testing tasks each day.

5.4 Waiting on Others

The Task Type of “Waiting on Others” required only 40 minutes (9%) in total for all team members time across both teams (QATEAMA[2%], QATEAMB[7%]), for the duration of the study. This represented time lost from planned activities where the team were unable to switch to alternate tasks and keep project related test tasks moving ahead.

On the ‘QA Issue Log’ maintained by QATEAMB for the duration of the study there was a total of 31.5 hours (High[18hrs]), Low[1hr]) of delay to planned tasks. The potential time loss was avoided by reassignment of team members to other test activities.

6.0 CONCLUSIONS

6.1 Test Engineers

The assumption before the study was that Test Engineers could be assigned to projects for 7 hours where in reality they had 6 hours after Admin, such as email, and other non-test related tasks.

In section 5.2 we saw that around 1.5 hours of this 6 hour actual availability was needed for test preparation tasks, reducing the maximum availability for testing tasks, after Admin and Prep, to around 4.5 hours each day.

The QATEAMB Test Engineers spent around 30 minutes less time each day than their QATEAMA colleagues on preparing for testing. Similarly, the difference in the time spent delivering testing for QATEAMB compared to QATEAMA was 30 minutes.

6.1 Test Managers

Before the study the amount of time the Test Managers could be assigned to test tasks was not clearly understood. There was an expectation based on a subjective understanding that Test Managers were available to testing tasks at least half of the working day.

Time spent preparing for testing was less than 15 minutes each day for the QATEAMA Test Manager and under an hour, 40 minutes, for the QATEAMB Test Manager.

The study revealed Test Managers were available to testing tasks only around 2 hours (27%) each day. When sharing the figures with the business there was initial rejection of the Test Managers doing management for up to 5.5 hours (73%) of their time each day.

6.3 Key Conclusions

Differences in the time spent for various activities across the teams were insignificant. For example, the Test Managers spending between 5.5 hours and 5.25 hours on tasks related to managing. This despite the QATEAMA team having two less Test Engineers to manage.

There was the assumption that the QATEAMA QA Manager would spend significantly less time managing due to only having one Test Engineer. However, it can be seen from the data that the majority of time is spent on non-personnel related management tasks.

Similarly, the Test Engineers spending between 4.5 hours and 5.0 hours delivering testing each day. Another assumption, as stated above, was that the Test Engineers were assignable to testing for between 7.5 and 7 hours each day.

From these findings the key conclusions were:

- That both the Test Engineers and Test Managers were spending available time appropriately.
- There were no significant differences in the time spent by members of staff on their core tasks.
- There were no obvious process and operational issues for current work that could be addressed.

7.0 NEXT STEPS

The study demonstrated that the QA teams were doing the right kind of work with the right kind of people. While the study provided valuable insight into the focus of effort by the team members it does not address:

- Recognised quality issues with the products
- Level of overall testing the QA team deliver
- Potential superficiality of testing services provided

Had the study revealed significant differences between the teams or issues that were obviously process and practice related this could be directly addressed. Given that the results of this study are satisfactory the causes of the issues above can be considered primarily outside of the day to day practice of the team, as covered by this study.

There for the following next steps are proposed:

- **Conduct a Survey to discover what level of testing is taking place outside of QA, for work that the business would expect to the QA teams to deliver.**

This will help us understand the actual level of overall testing that is taking place and the contribution by QA. It's understood QA do not test all items and they do not provide the full range of testing that is recommended. Insight into the overall level of testing will allow us assess:

- That actual level of testing that is conducted and by whom
- True costs associated with the overall testing conducted throughout the business
- Impact on the business by QA, preventing teams working on tasks expected of their roles
- Level of resource needed to deliver the level of testing conducted by QA and the business
- Review current practice in view of how this testing would be delivered fully within QA

- **Perform a review of the last 12 months workload within QA and projected workload for the coming 12 months and assess the testing delivered by QA**

This will allow us to further clarify the level of testing needed for the workload presented to QA. In addition, by looking at the level of bugs and issues found in both the development and maintenance phases, we can assess:

- Testing volumes required due to scope of proposed releases over the year.
- The effectiveness and potential superficiality of the testing conducted.
- QA / Business test delivery split against plan
- Actual total time available from testing staff over the year
- Projected figures for the above in the coming year

Notes

The 'Testing Diary' resource assignment workbook has historically shown availability of staff at 7 hours.

Where the document refers to 'QA' and 'QA Team' this is more correctly 'Test' and 'Test Team'. However, QA is the term used by the client and so has been retained.

Statistical Notes

A'ty = Availability

Tte = Time from test engineers

Ttm = Time from test managers

QATEAMA = Team A

QATEAMAtm = Team A test manager

QATEAMAte = Team A test engineer

QATEAMB = Team B

QATEAMBtm = Team B test manager

QATEAMBte = Team B test engineer

P = Participants

Qa = QA Team for Team A

Qb = QA Team for Team B

4.5 minutes = 1% of a 7.5 hour day