

The logo for the Global Testing Retreat 2019. It features a central blue shield with the text 'GTR 2019' in white. The shield is surrounded by four colorful, stylized human figures in purple, pink, yellow, and blue. The words 'Global Testing' are arched above the shield and 'Retreat' is arched below it.

Global Testing  
GTR  
2019  
Retreat



# Mechanics of Aerobics in the digital testing Era

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**#ATAGTR2019**

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# Introduction



- In this new age of testing, the quality assurance conundrum of what to test and how much to test is 100x magnified. New age software development techniques embracing continuous delivery and integration brings the focus towards delivery instead of a mere test “deliverable”. The focus of testing is shifted from functional and feature testing to test of experience.
- This presentation traverses through some of the testing hardships and its transformation journey over the last few decades and highlights the new age testing competencies and mindsets necessary to face the rising digital tide in the testing industry.



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Repetitive & Mechanical

- Processes and documentation was important and mandatory
- Testing happens only at the end of development phase
- More focus on finding out defects
- Validation of Functionality was the primary agenda
- Focus was to break the system.



Interesting & Efficient

- Documentation became optional yet processes are bottleneck.
- Build Automation scripts to enhance testing coverage and ease the overall testing life cycle.
- Focus is still on finding out defects but in automated way.
- Validation of Functionality was the primary agenda



Intelligent, Exciting & Rewarding

- Go Agile on processes and eliminate testing bottlenecks that arise in the form of documentation.
- Testing continuously and throughout.
- Focus on preventing bugs through ML techniques.
- Build Intelligent Test Eco System to drive testing efficiency thus BIC user experience.



- Requirements are not clear
- Development team did not unit test it. Hence, number of bugs are very high.
- Developers are eating over our testing schedule.
- This scenario is not covered in the testing scope.
- We had raised the testing schedule risk in many meetings before and no action was taken.
- The development turn over document was not handed over to us in time.
- The code was not deployed in our scheduled time, hence we cannot start testing.
- We did not get all requirements signed off.
- The testing environment has issues.
- The test data has anomalies.
- This is an existing production issue and is not covered as of this release.
- We can only perform Risk based testing.

•Different form of masks worn by the Testing team before and during the Test execution phase.



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The project had to shed additional USD 1.5 mn.



More than 40% of rework in running repetitive test scenarios.



30% of the work force spoilt their vacation plan.



7% Loss of revenue due to poor membership growth for the end customer.



Loss of face for the executive leadership in not keeping up with the commitments.



High negative emotions amongst the team.



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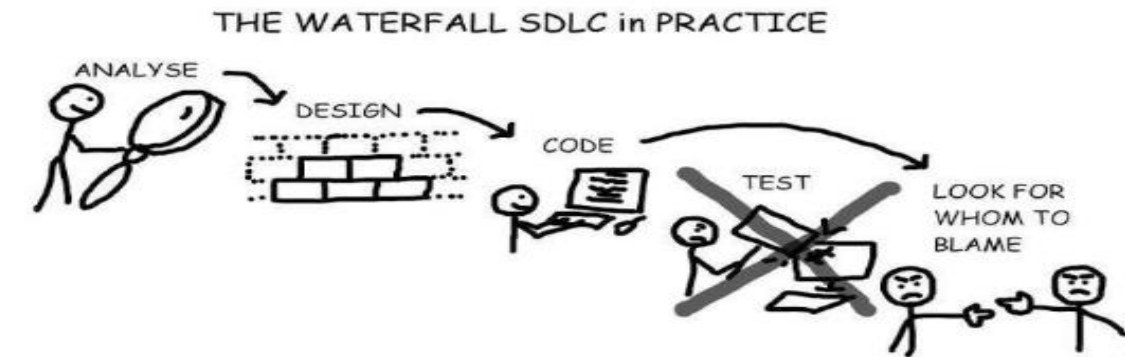
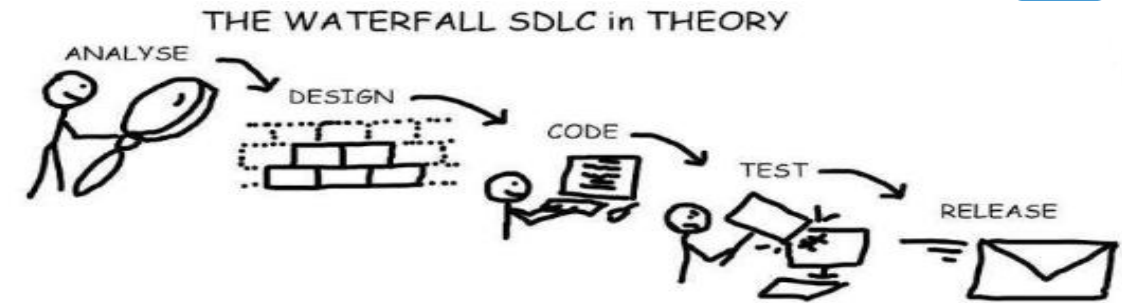


1. Continuous changes in specifications by the client. *Adds up to Functionality testing fat.*
2. When the development time is more than expected, it becomes a general tendency to reduce the testing time. Testers are asked to test within a short duration of time. *Adds up to testing process & schedule bottleneck.*
3. Regression testing in the midst of short testing window, becomes a for the sake process phase and not adds any value to the overall test phase unless few defects here and there. – *Adds up testing process fats.*
4. Test plans and test cases may not be updated properly in the testing application. The tester will be testing it on a different version and the test fails because, the test case was for a previous version. Though the software has failed the test, the software is still working fine. This becomes an issue and it is sent back to the developer. He comes out with the result that it is correct and the test case is wrong. – *Adds up testing process fats.*
5. One or two developers make more than acceptable mistakes. In that case, though the bug is found, the testers generally do not report all of them on the same day, because, doing so will reflect on the developer. – *Adds up people causing fats.*
6. Generally, testers are not familiar with the technology. Software or a module that is developed using a new technology always takes larger time to develop and to test. – *Adds up testing process fats*
7. Too much of paper work and waiting time for stake holder acceptance – *Adds up testing process fats*



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8. Insufficient information in the test cases without proper test coverage can be a bottleneck at times. Adds up to functionality testing bottleneck
9. Testing team is left siloed until the development team deploys the code into the ST. There is always a competition amongst developers and testers. Adds up to testing process & schedule bottleneck.



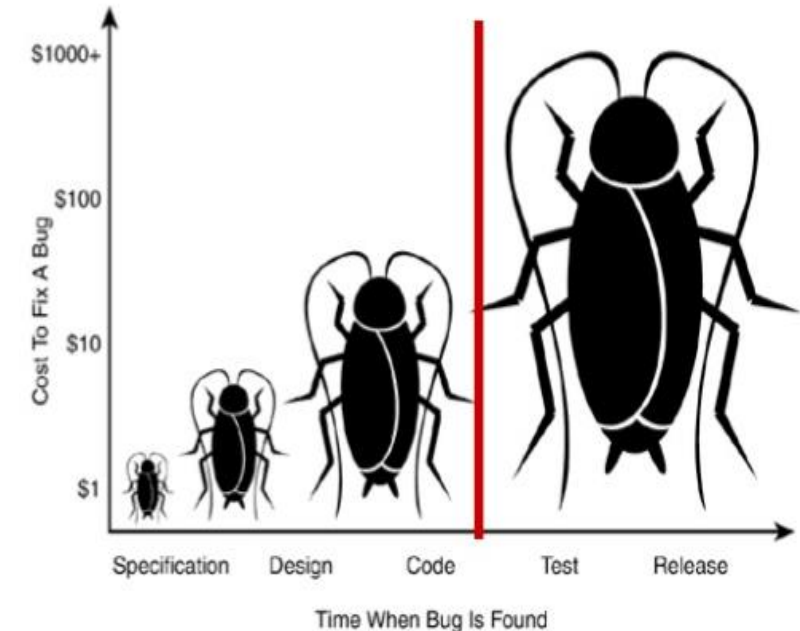
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## Testing lacks to deliver the results



1. We use testing to disclose many hidden errors but this methodology never guarantees the absence of errors. It is only used to identify the known errors. It never gives any information about those defects that remain uncovered.
2. Testing do not provide you any help when you have to make a decision either “you should release the product consisting errors for meeting the deadline” or “you should release late by compromising the deadline”.
3. Software testing does not predicts or estimate the proper functioning of the product under different conditions, but it may prove to be helpful in delivering the information w.r.t. Incorrect or improper functioning of the product.
4. While injecting the defects, software testing unable to find the root causes which may help in placing defects at the first place. Identifying the root causes of defects/errors helps in injection of defects for future purposes.
5. When it comes to major constraints like Time & Budget, it requires attentive planning of test effort. Mostly, we compromise in between thoroughness and budget at the time of testing.

## How much does it cost?



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# WHY **testing** **AEROBICS** IS IMPORTANT?



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## So what is the Answer to the Testing Fats Accumulation?

Testing doesn't ever remain the same as it used to be few decades ago. It is undergoing a huge transformation. It is now seen an opportunity to generate best-in-class value to its business users more than ever before by means of building intelligent eco system as a medium to attain quality.

The digital cyclone is rising in the Testing industry, the focus, drive, energy has to be shifted drastically on to the two key aspects below.



**TRIMMING DOWN THE  
TESTING FATS.**



**TRANSFORMATION TO BUILD TESTING  
MUSCLE & PROMOTE HEALTHY  
TESTING**



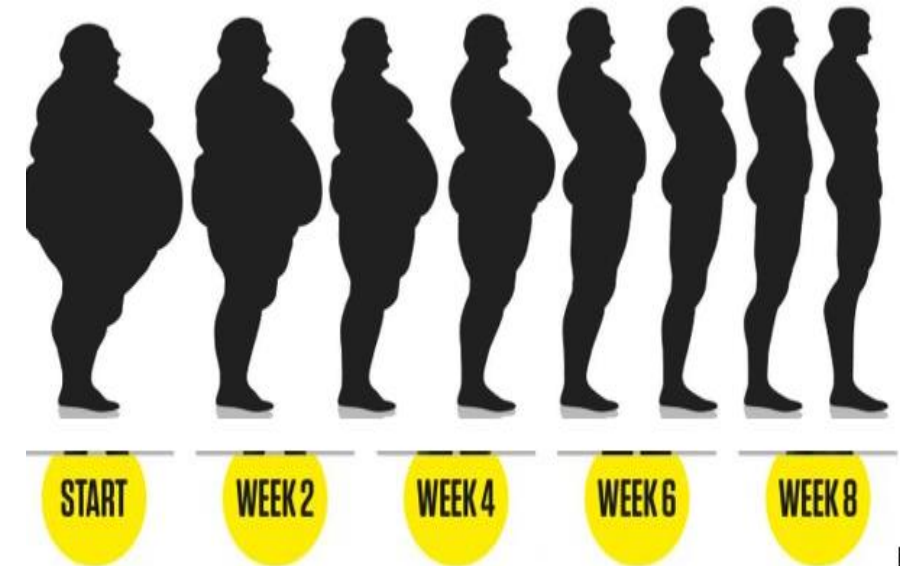
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We will like to discuss ways to Adopt Testing exercises that burns the Testing fats and tones into Test muscle building [in an 8-week window](#).

**Establish a Test Center of Excellence** by establishing a testing command Center that profoundly adopts agile manifesto, empowers digital enablement, accelerates delivery of innovation, eliminates redundancies, implies best practices, derives key metrics, drives down the risk and cost of changes and that ensures best-in-class quality of the business deliverables.

- a. **Enable People/Process/Technology Transformation** - Deployment of right skilled resource that includes “Test Transformation lead”, “Test design specialists”, “Test Architects”, “SDET’s/Quality engineers”.
- b. **Increase Efficiency through Standardization:** Standardization of methodology and techniques is a proven way to increase efficiency. Standardizing on core test case design, test data design, and test automation practices—while still providing each team a reasonable level of freedom—significantly reduces overhead and waste. The resulting efficiency gain helps testers deliver the fast feedback expected with Agile, establish a mind-set that Embrace change and execute with a purpose.
- c. **Governance:** To continuously optimize agile processes, it is important to aggregate KPI and other metrics into a comprehensive top-level report that crosses business units. This is only possible if the various teams ensure that their unique metrics are compatible with higher-level reporting expectations.
- d. **Exploratory testing:** Adopt Exploratory level testing in the right amounts that generates more value to its end users and create a culture of continuous improvement.

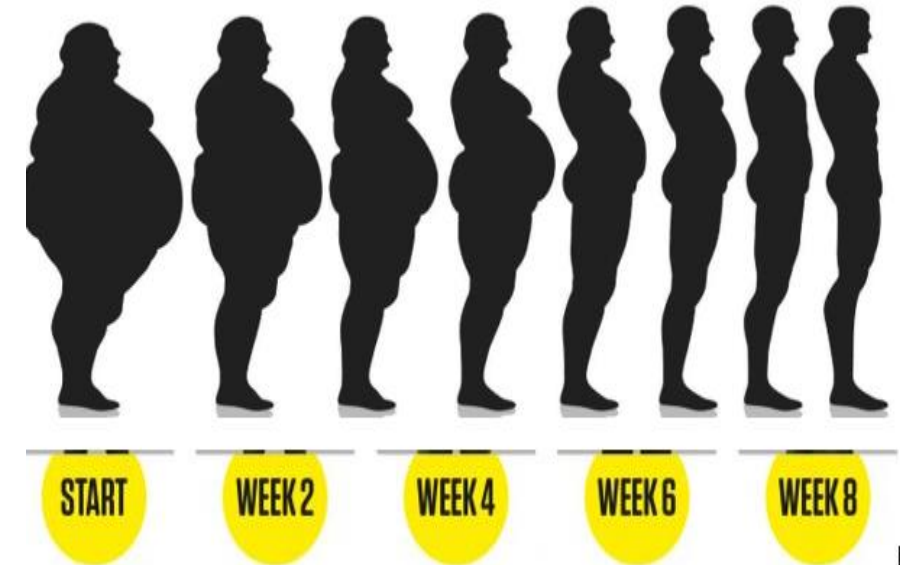
From trimming down Fats to building testing muscles



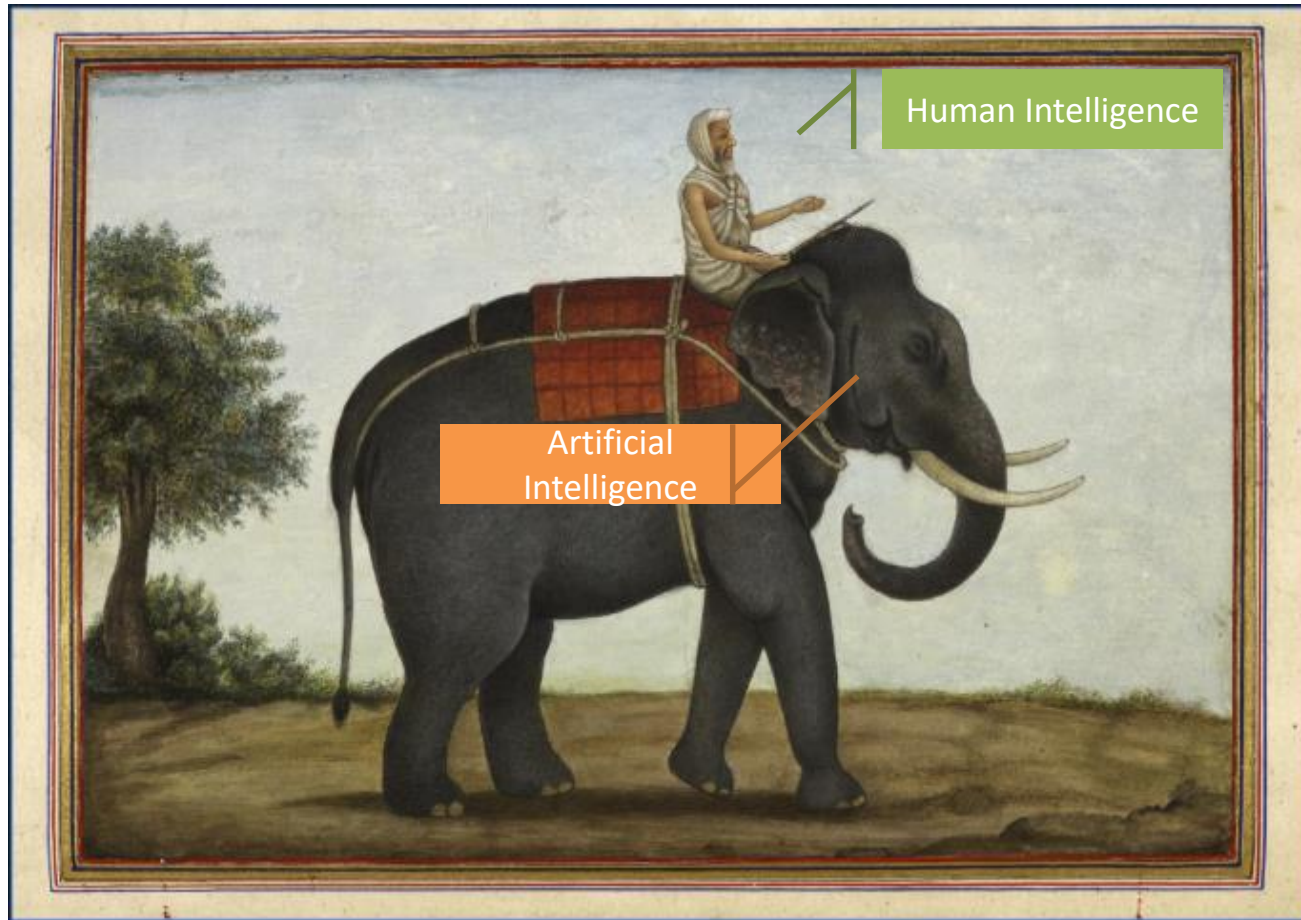
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Increase Test Effectiveness by adding Intelligence in test Automation through Analytics & ML algorithms. As we enter the realm of early AI testing, it is critical to build knowledge based on artefacts we already collect like defects log, life cycle, fields defects, production events to improve the overall test effectiveness with the below points to ponder.

- a. Analytics provides real-time visibility into your test data across teams, platforms and applications that enhances the prediction patterns, efficiency of testing by identifying bottlenecks and discovering high impact quality issues.
- b. Intelligent Test Automation. Allows users to push quality upstream, view the level of parallelization of their tests, shorten testing cycle, consistent testing coverage, enabling cross team interoperability testing.
- c. Perform right amount of automation. Do not automate every scenario of testing that could build testing Fats.
- d. Transition to AI Driven Testing makes testing even more interesting and rewarding. Just like it is not necessary to have an electronics degree to drive a Tesla, testers can learn to use various ML algorithms and not necessarily build it to drive their routine test deliverables. The humans should design the test cases and the Intelligent Machine should do the hard work of figuring out how to execute those test cases. These elements enable products to be launched in to the market in fast manner resulting in a steady and healthy business growth.



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- Automation, AI is never going to replace human jobs as long as humans don't do repeated jobs and stays creative and competent.
- AI becomes our supporting companion that gives us the information we need even before we even knew we needed it.
- Digital solutions helps us in non stop operation
- Models helps us grow from rough conceptual ideas to refined representations of a real thing. Together with the testing operational data models they serve as forecasters for situations to come.



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The industrial age has moved from horse and carriage to self powered machines. In order to make this testing phase work, we will have to trust the machines that will carry us around. As a result, the testing needs to evolve in two core tracks,

- Identifying and Eliminating the testing Fats -- Fast testing must be in place to keep update time to minimum, which calls for automation on all test levels.
- Toning of testing Muscles (Test Transformation) Continuous testing must be in place to support continuous delivery of new features and fixes.

The digital age brings us means for communication, data gathering, cloud storage and the computational powers to sift through the information at a faster pace. Operational data and historical data can both be combined to derive new correlations helping the business with new insights yielding to best in class user experience.



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