

# SOFTWARE TESTING SAMPLES from TURKCELL

## Turkcell Technology



- Functional Tests and samples
- NonFunctional Tests and samples



- Functional Tests
  - A specific action or function
  - Requirements document
  - Use cases / User stories
- NonFunctional Tests
  - Not related to a specific function
  - Overall quality
  - Suitability Perspective



- An application that allows your clients to send informative SMS to their customers
- There are business requirements and also metrics and parameters for the expectations



# Functional vs. NonFunctional Example



- Clients will upload the sending list through a web page



- Clients will be able to see the status and pause/cancel the process at any time



- Clients have foreign workers and customers



- All clients should be able to use the app at the same time



- Limitation for the count of customers in the sending list



- Clients should not see each other's process



- Lists can be updated before the sending process starts



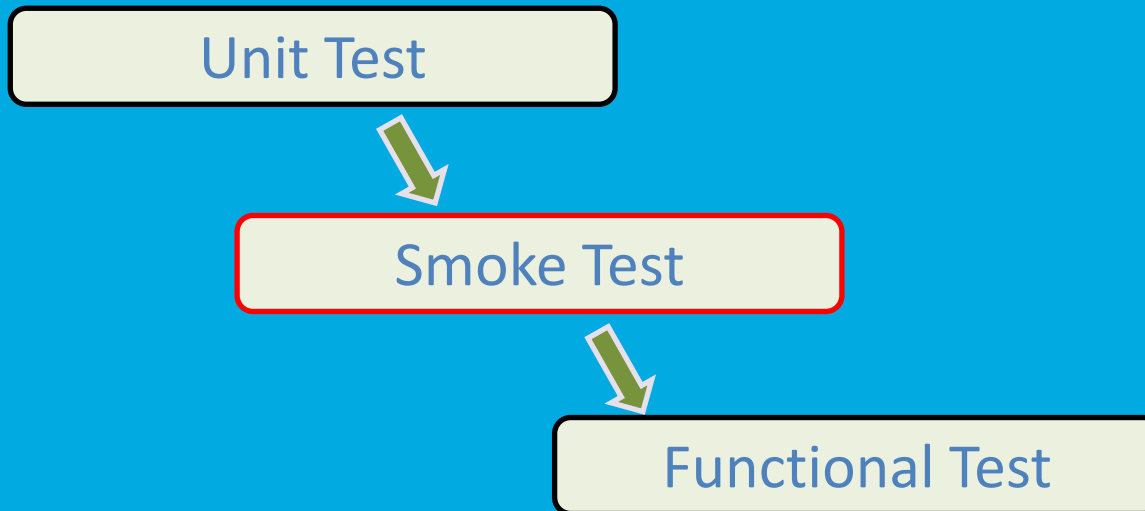
- It is expected to increase the number of clients by 100% in a year



- Business Requirements of the application
- A Black Box type of testing
- Testing types that can be a part of functional tests;
  - Unit Test
  - Smoke Test
  - Sanity Test
  - Integration Test, etc.



**Smoke Testing** is preliminary testing to reveal simple failures severe enough to reject a prospective software release. A subset of test cases that cover the most important functionality of a component or system is selected and run, to ascertain if crucial functions of a program correctly work. (\*wikipedia)



If the functional test starts before smoke tests;

- Increasing test effort
- Increasing test duration
- Decreasing test quality





- Nonfunctional requirements of the application
- To check the readiness of the system
- Executed after functional tests
- Effective by using testing tools
- A great influence on customer and user satisfaction



- Performance Test
- Migration Test
- Compatibility Test
- Localization Test
- Security Test
- Usability Test
- etc.



- Interchangeable names; Load, Stress, Volume tests, etc.
- Stability of the system
- Identifying the points that needs performance tuning
- Neoload is being used in Turkcell
  - CRM screens deployed on 60 servers
  - 1000 virtual users
  - Starts with code freeze date
  - Test and Prod env.



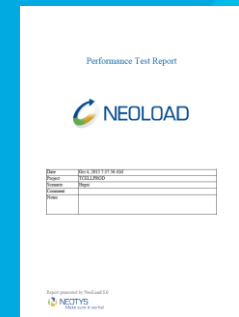
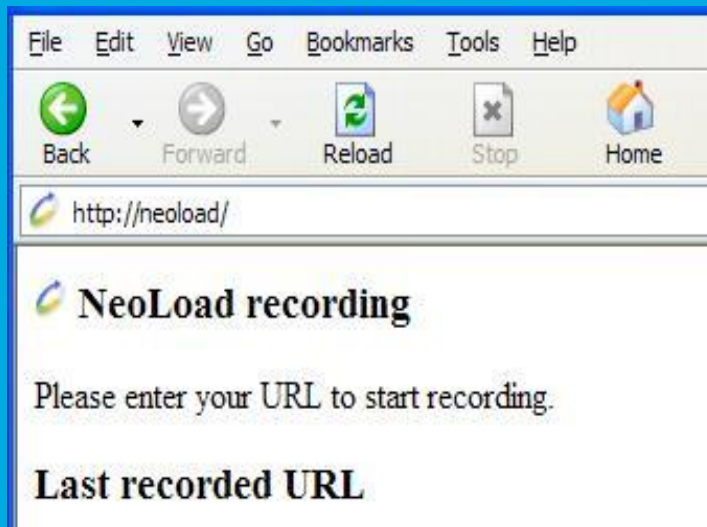
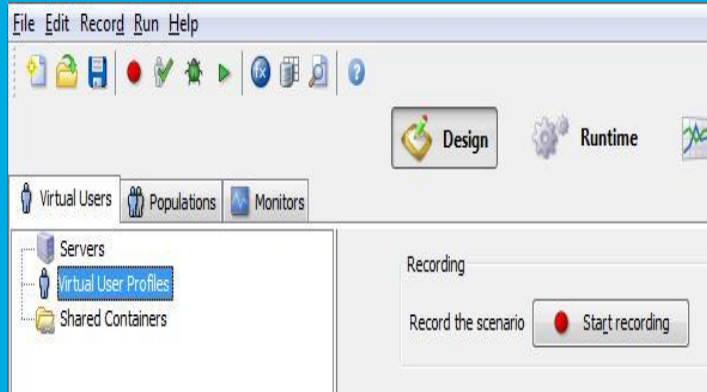
- A load testing tool by Neotys.
- Tool that measures performance and behaviour of the system under load.
- Used for testing web applications, Web services, flex applications Oracle forms and Silverlight applications.
- Uses Java Script for script enhancements.
- ~10 min to record a new scenario



- Create a script that mimics a single user activity on the applications
- Enhance the script by using pass by values, variables and assertions
- Validate the script
- Set the population and define a scenario
- Monitor the server parameters
- Run the load test
- Analyze the results.



# Neoload Testing Process and Report





- What is Data Migration & Why do we need it?
- What is the difference between migration and functional testing



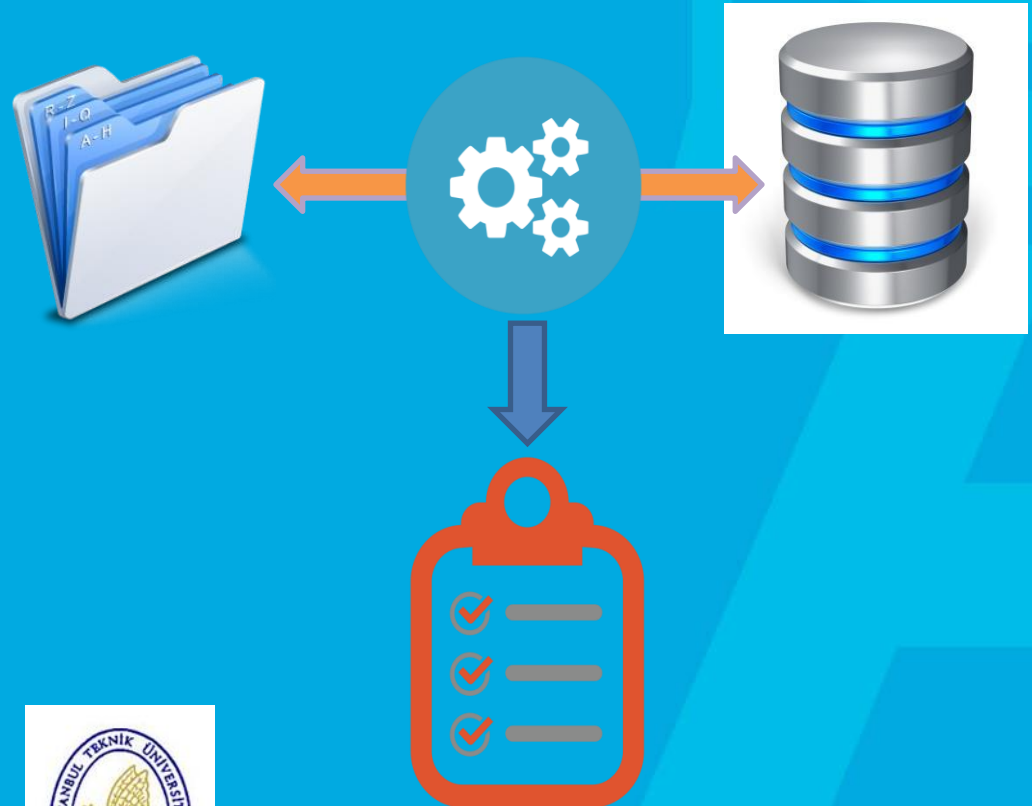
- Definition of clients requirements
- Data validation in source system
- Testing of migration codes
- Testing data after migration
- Test in client sides
- Rollback testing



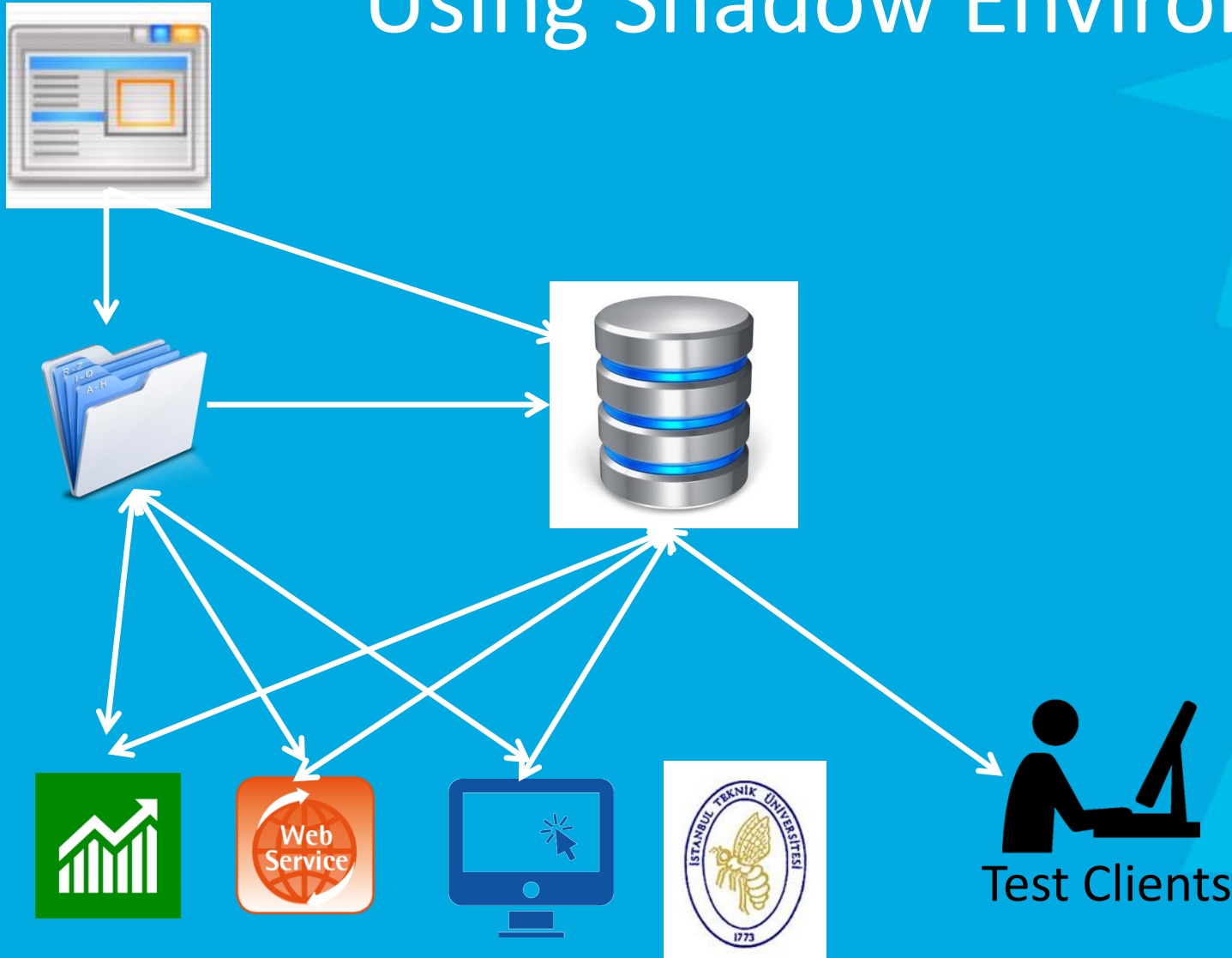


Preparing scripts to control data

- Data Validation
- Data Verification



## Using Shadow Environments



- Compatibility of the software with target environments
  - Browser
  - Hardware
  - Networks
  - Mobile Devices
  - Operating System
  - Versions



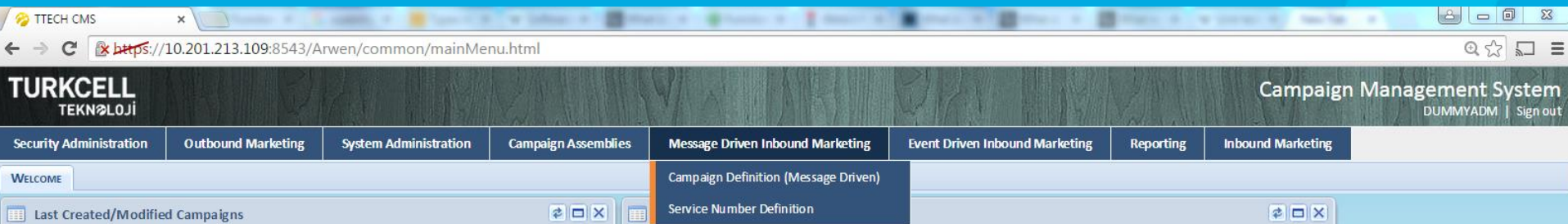
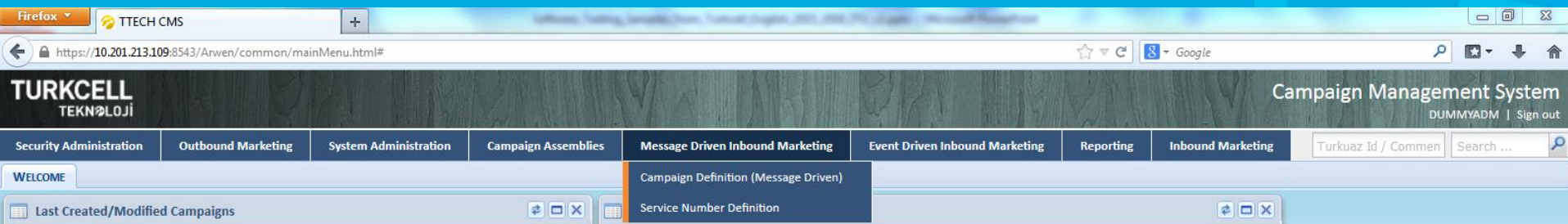
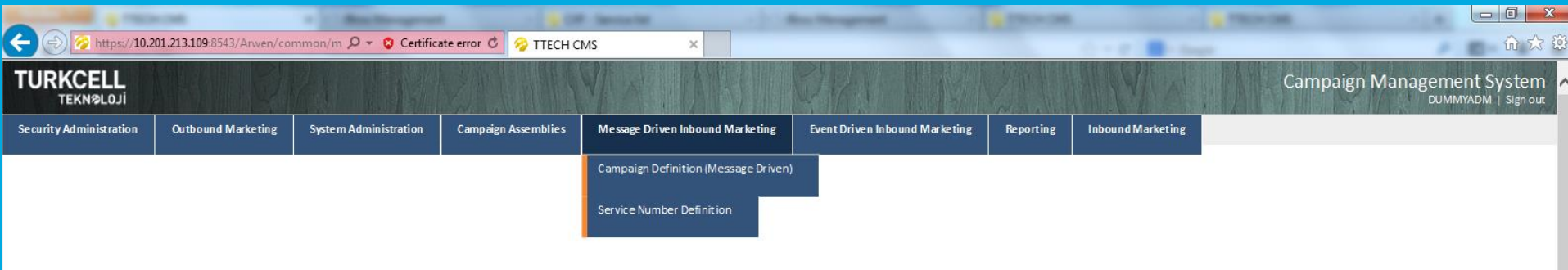
- Which browser, which version?



- Which db?



# Compatilibity examples



- Customizing for foreign markets
  - Language, timezone, alphabet, week days, etc.
- CMS application is being used in 8 operators in 7 different countries
  - Arabic and Cyrillic characters
  - Calendar
  - Friday vs Sunday
  - LTR vs RTL



- Ability to send non-ascii characters in SMS
- Customers sending opt-in SMS
  - EVET 50
  - 50 نعم ???
- Transaction dates, db settings for different calendars
- Working days, proper times for contacting the customer





- User – friendliness check
  - Learnability
  - Efficiency
  - Memorability
  - Errors
  - Satisfaction
- Functionality does not have a value if cannot be used





- You are asked to develop a web portal for the university that will enable students / instructors to;
  - Take online exams, see the results
  - Add / drop courses
  - Update personal information, take transcripts
  - Submit homeworks and papers



- Consider the following constraints for nonfunctional testing;
  - Population
  - Foreign students
  - The risk for online exams
  - Access from outside of the campus
  - Usage on different platforms
  - Possibility to share this portal with other universities

