Odin – et DND-event 2015

SMAC Your Testing

How Social, Mobile, Analytics and Cloud technologies are reshaping QA and testing

John Fodeh
John.fodeh@cognizant.com
Quality Engineering & Assurance

Cognizant

Cognizant Engineering & Assurance Practice

30000+ professionals providing Independent Verification, Validation and Quality Engineering services to more than 400+ clients across industry domains and geographies.

CTS Pioneered

- Establishment of definite career track for Testing professionals
- Instrument Testers as Users concept in the industry
- Build Best-in-Class Framework for QA organizations
- Shift Left & Quality Engineering concepts

Independence
Strategic Business Unit within Cognizant 75% Code tested is 3rd Party developed.

Research Labs
Centers of Excellence around niche areas in Testing & Quality Engineering

Alliances
Partnerships with leading testing tools and infrastructure vendors

Global Delivery
Testing delivery centers across the globe –Follow the sun model

An era of great head scratching….

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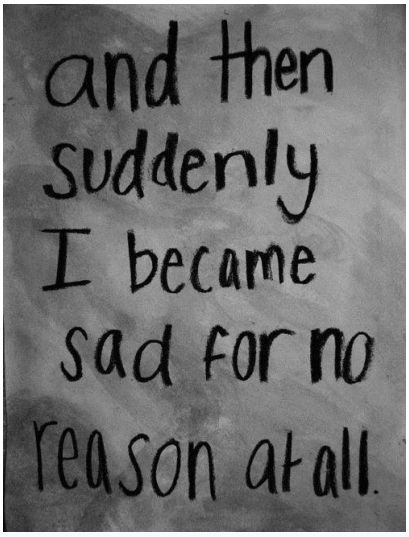
Something weird is happening …

- This year, there will be more than 10 times as many photos taken than in 1993, and yet Kodak is bankrupt
- More news is being generated on a daily basis than ever, and yet…
  - the *Los Angeles Times* is bankrupt
  - *The New York Times'* debt has junk status
  - *The New Orleans Times Picayune* publishes just three days a week
- People are watching more movies at home than ever, yet Blockbuster is bankrupt
- Book sales increased 27% in 2014, and yet Borders collapsed



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UPON FURTHER REFLECTION…

SOMETHING MIGHT BE WRONG

Source : The Motley Fool

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Dislocation at the Shift Point

Widget Winners

BORDERS

BLOCKBUSTER

NOKIA

AOL

hmv

Kodak

Digit Winners

amazon

NETFLIX

Google

facebook

iTunes

Spotify

Instagram

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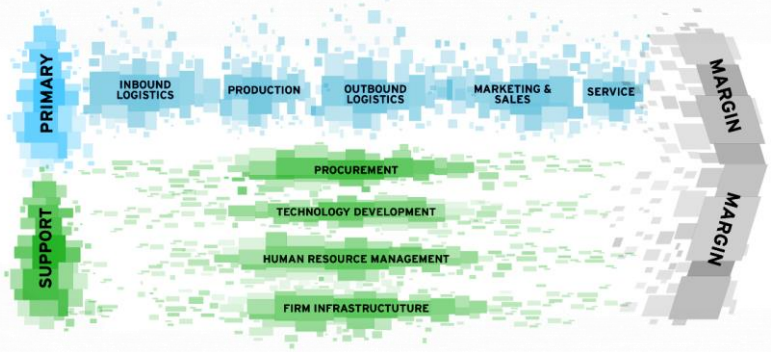
NEW TECHNOLOGIES ARE TRANSFORMING WORK

A NEW TYPE OF DIGITAL ENTERPRISE IS EMERGING



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Based on the SMAC Stack…

1. **S**ocial Computing
2. **M**obility
3. **A**dvanced Analytics
4. **C**loud

CONSUMERIZATION OF IT

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The SMAC revolution *is* being televised

"We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten"

- Bill Gates

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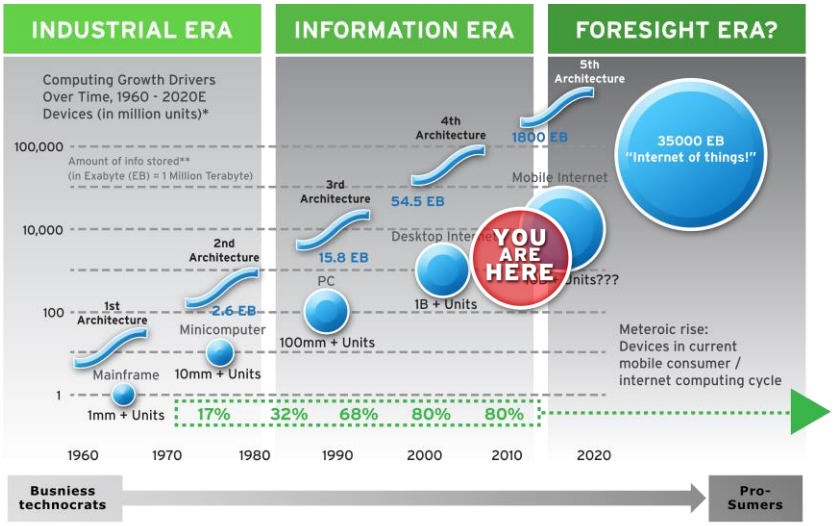
The Computer Industry Shift Point



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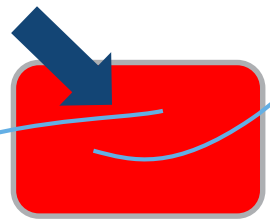
The Fourth Shift is Transformative

This is where significant value is destroyed or created



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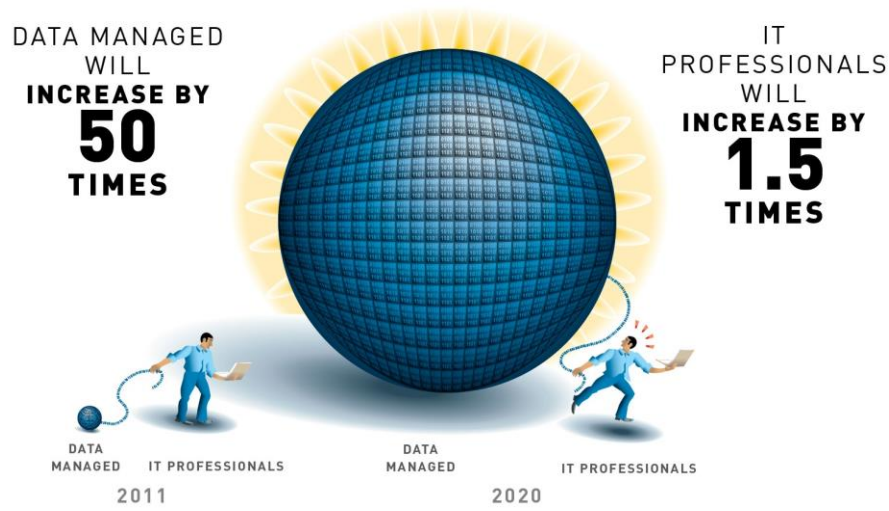

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2.5 quintillion bytes

Data generated daily….

90% of the data in the world today has been created in the last two years alone.

83.8 exabytes

2015 Monthly global IP traffic

1 EB = 50,000 years' worth of DVD-quality video*

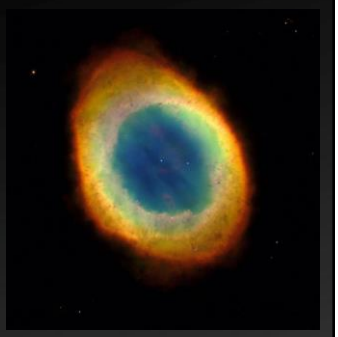
WOW!
THAT'S A LOT OF DATA…

WOW!
THAT'S A LOT OF DATA…

BUT SO WHAT?

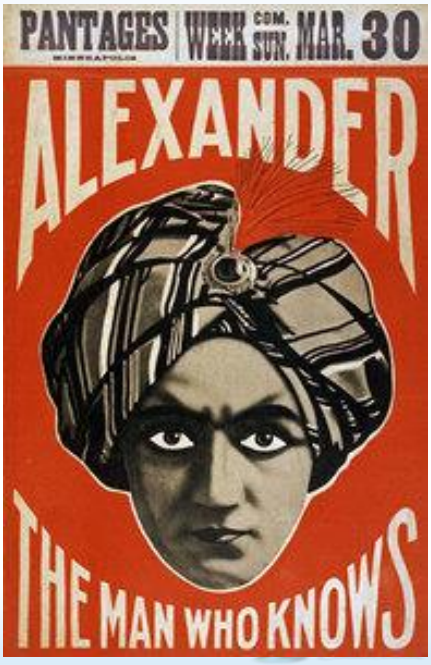
Companies are competing on "code" – the data and information surrounding people, organizations, and devices

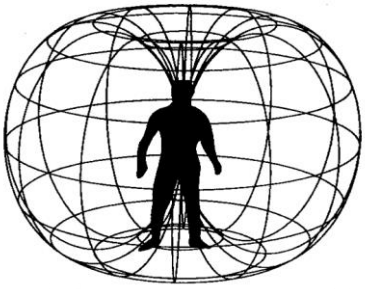
DATA, DEVICES, AND PEOPLE ARE CREATING "CODE HALOS"



It seems like Pandora, Spotify, Netflix, iTunes, Amazon, Google, Facebook, Twitter are *reading your mind*

They *know* you because of your "CODE HALO"



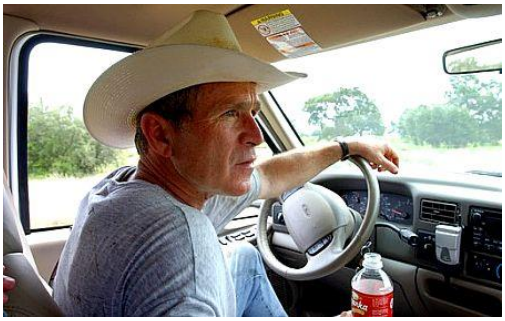


Our virtual life actions create a CODE HALO

Think musical tastes matter?
Musical preferences and political preferences

Likes Garth Brooks

Votes Republican



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Think musical tastes matter?
Musical preferences and political preferences

Likes Madonna

Votes Democrat

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Other music correlations

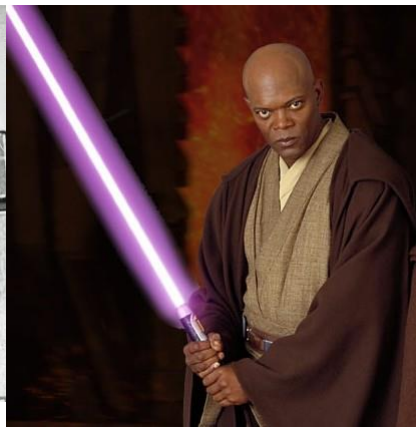
Likes Justin Timberlake

Likes Pixar films

Other music correlations

Likes Jimi Hendrix

Likes Science Fiction



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What Musical tastes also say about you…

Relationship Status

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What Musical tastes also say about you…

Your age

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What Musical tastes also say about you…

Family Background

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What Musical tastes also say about you…

Family Background

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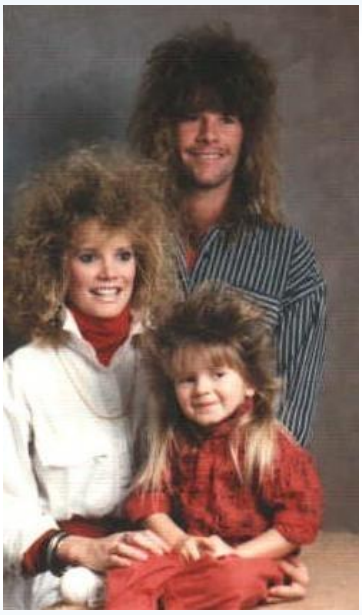
What Musical tastes also say about you…

Family Background



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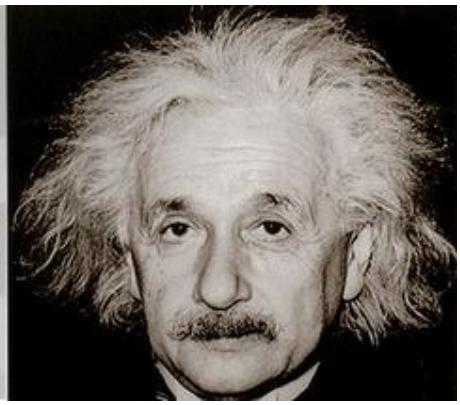
What Musical tastes also say about you…



Your intelligence

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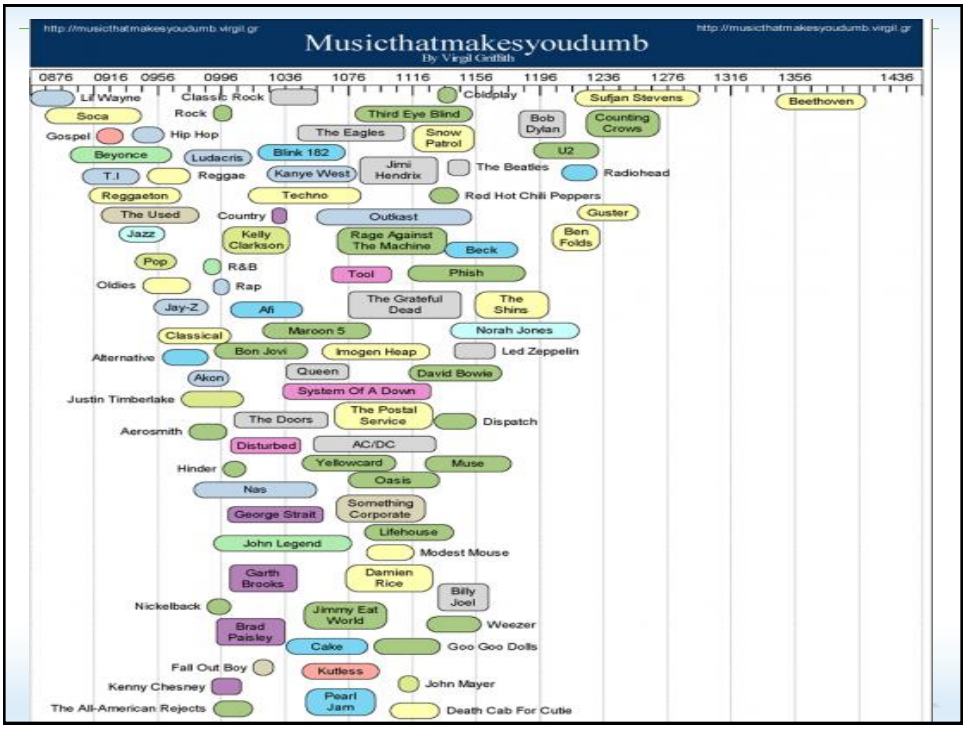
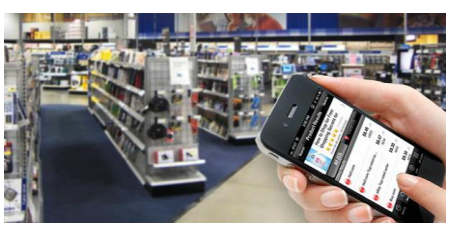
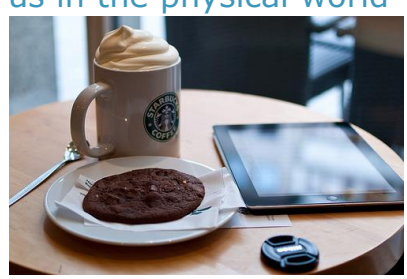
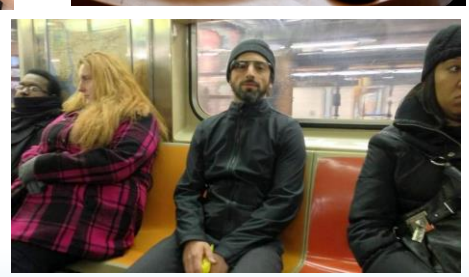


Code Halo Amplifiers:

Carrying our virtual lives with us in the physical world







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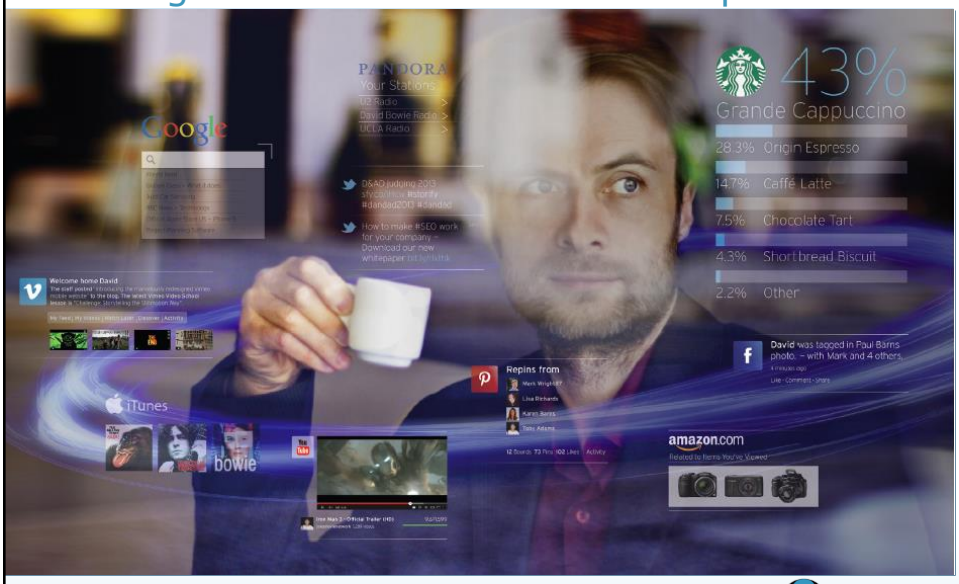
Knowing the user's exact needs and preference



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"Any Noun…any person, place or thing…now has a virtual self as well a physical self."

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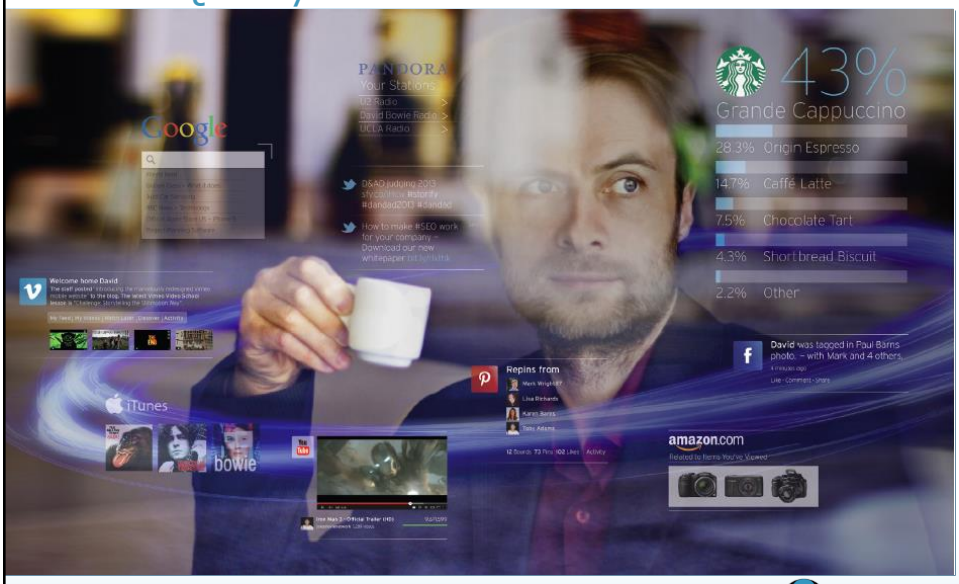
IMPACT ON TESTING AND QA

Holistic Quality View



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Maslow's Hierarchy of Needs

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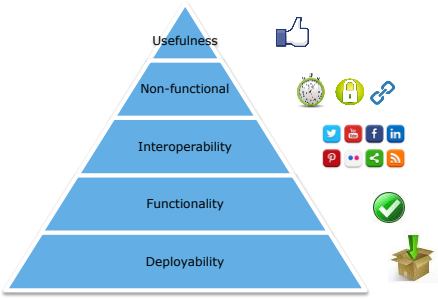
User Experience Hierarchy



Usability
The **effectiveness**, **efficiency** and **satisfaction** with which a specified set of **users** can achieve a specified set of **tasks** in a particular **environment** [ISO 1998]

*Also See: Gojko Adzic & Chris Ambler

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Voice of the Customer

Social listening is the process of identifying, assessing and tracking what is being said about a company, product or brand

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Smarter QA Through Analytics

Analytics is defined as the process of identifying, collecting, measuring and monitoring information based on user actions

- Identification of user requirements and latent needs
- Detection of focus areas for testing
- Risk-based approach
- Optimizing test coverage
- Early feedback about quality-in-use

Intelligent QA & testing by reading your users' Code Halo

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Focus Areas and techniques

End-user centric

- Hallway Testing
- A/B & Multivariate Testing
- Gamification
- Ramped Development Testing

BA-QA

- Social Listening
- Business Process Modelling
- Business Assurance
- Exploratory Testing
- Usability Testing
- Multi-browser/devic Testing

Non-functional

- Performance, Load, Stress & Soak Testing
- Security Testing
- Availability Testing
- Reliability Testing
- Resilience Testing
- Infrastructure Testing
- Monkey Testing

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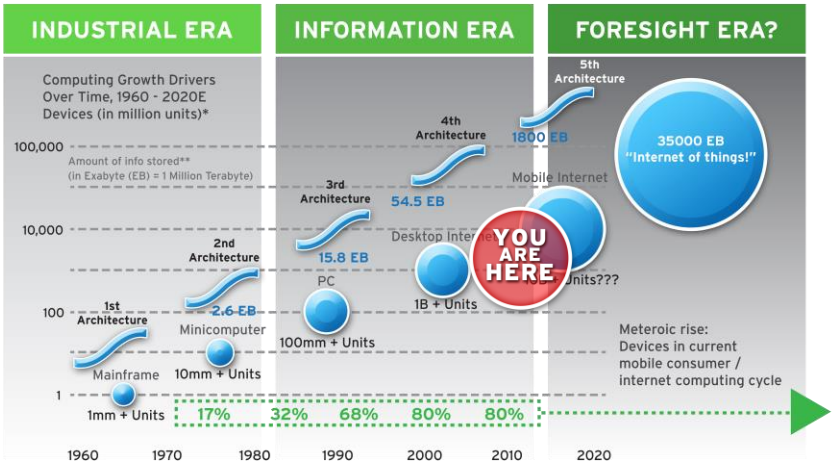
The Computer Industry Shift Point



Busniess technocrats → **Pro-Sumers**

Juran's Quality Control Handbook 1951

Waterfall model (Royce) 1970

THE ART OF SOFTWARE TESTING Glenford J. Myers 1979

6σ 1986

V-model (Rook) 1986

CMM 1987

The Agile Manifesto 2001

ISO 9126 1991

ISTQB 2002

CMMI 2002

TMMI 2005

Crowd-sourcing 2006

Weekend Testers 2009

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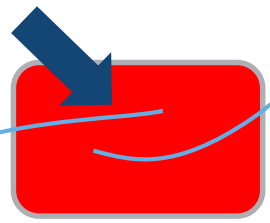
The Testing Shift



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Welcome to the digital testing era…

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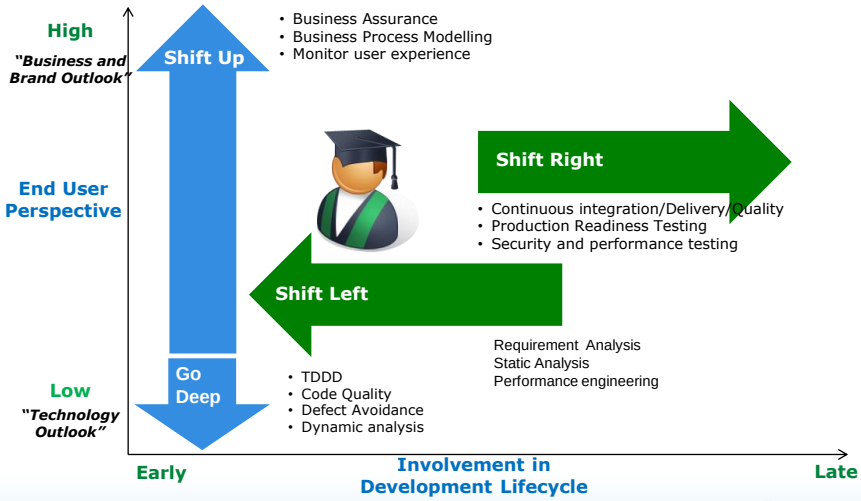
Refining the Tester Position



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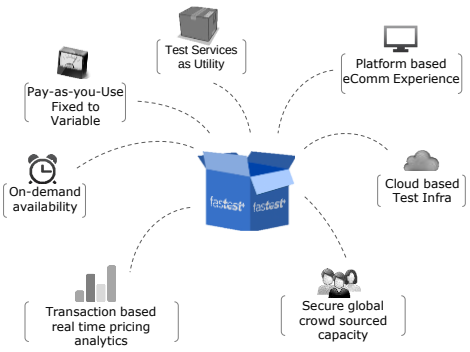
On Demand Testing Services - TaaS



"TaaS is an evolutionary step in managed test services, incorporating numerous characteristics of the managed outcome model but in an exclusively consumption-based approach." [Forrester]

Crowd-sourcing as a service combining cloud, social & analytics

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It's all about the user experience

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Transforming QA & Testing

Old playbook

- Find Defects
- Activity based
- Testers
- Hardware-bound
- Manual
- Confirm requirements
- Skills constraints
- Functionality focused

New playbook

- Identifying patterns
- Platform based
- User advocates
- Virtualized environments
- Automated
- Monitor user behavior
- Global talent pool
- Holistic quality view

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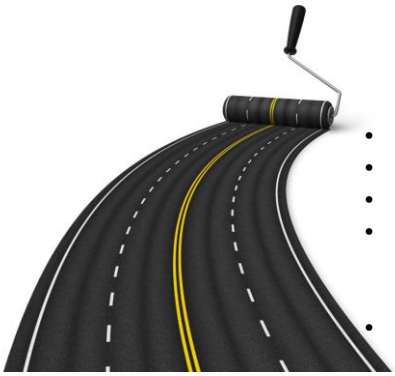
Summary

- Our terrain is changing
- The key is to adapt and harness the opportunities the technology shift brings



- Seek holistic quality view
- Govern end-to-end user experience
- Get early feedback on the quality-in-use
- Exploit the technology to test beyond the constraints of your physical environment, team and skills
- Shift left, shift up, and shift gear

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Thank you

Further info:
www.futureofwork.com
www.seeing-things-differently.com

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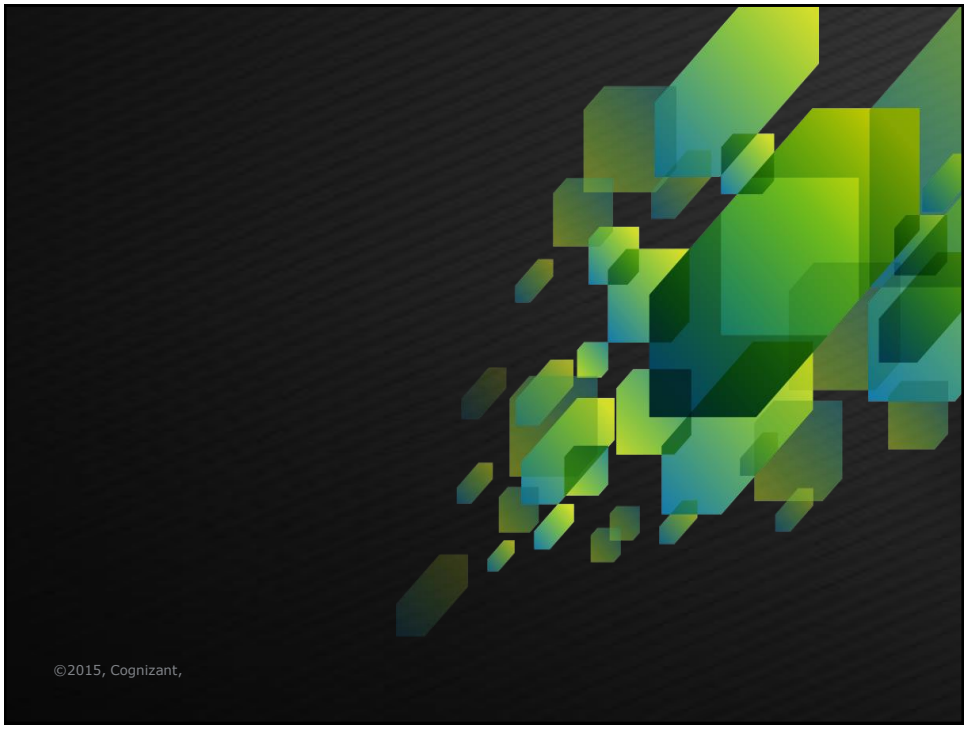

A/B Testing

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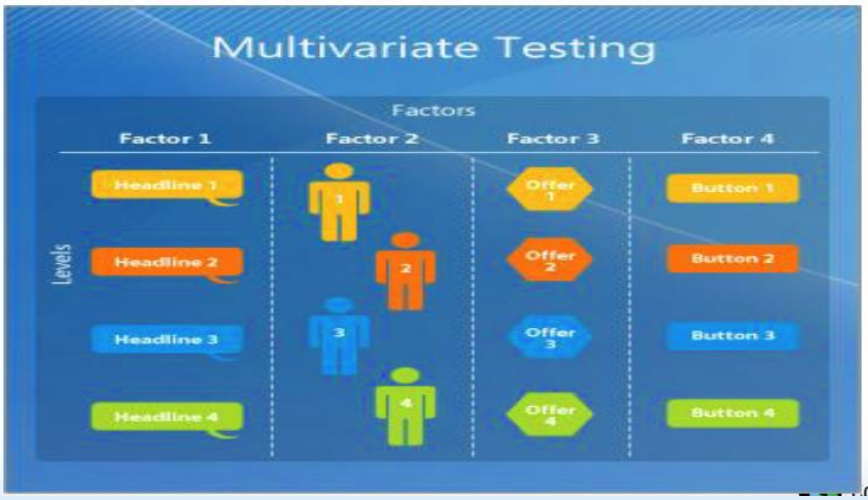
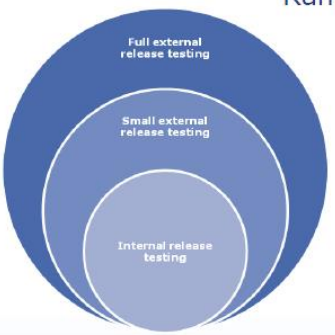
Multivariate Testing

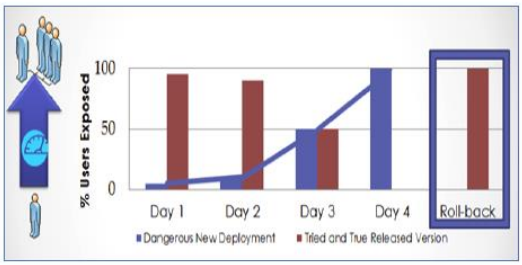
- Multivariate testing will test different content for many elements across one or more pages to identify the combination of changes that yields the highest conversion rate.
- In simple terms, it is numerous A/B tests performed on one page at the same time



Ramped Deployment testing

Ramped Deployment Testing





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NEW SMART HYBRID TESTING MODELS

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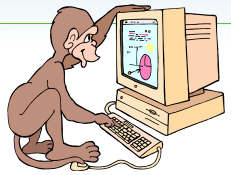
Test Monkeys



Actions List

```
#script file: Test4.asc
KEY L;
KEY 5, LONG;
CP_KEY FOCUS_UP;
#KEY BOX_SIZE_UP
KEY 8;
TRACKBALL 0, 64;
KEY SHIFT, R;
```

Random Test Tool

Application Under Test

Utilities

Log file

```
#script file: Test4.asc
CP_KEY FOCUS_UP;
TRACKBALL 0, 64;
KEY L;
KEY 5, LONG;
KEY 8;
CP_KEY FOCUS_UP;
```

Netflix launched a “Simian Army” to continuously test & monitor infrastructure availability

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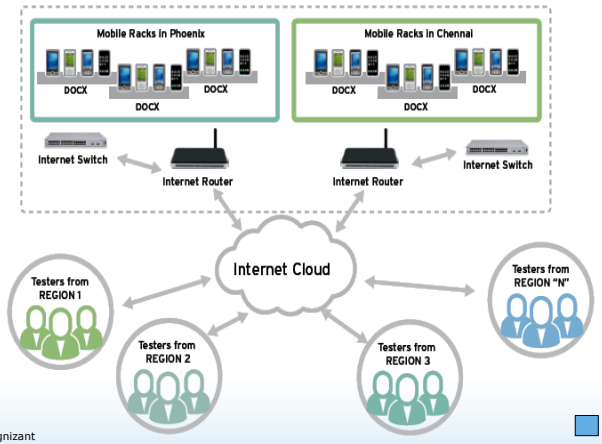
Device Testing



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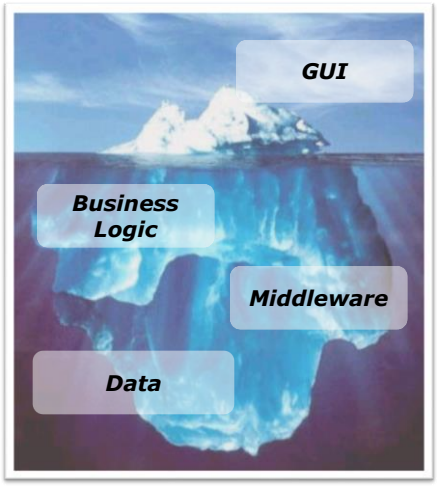
Testing Beyond the GUI



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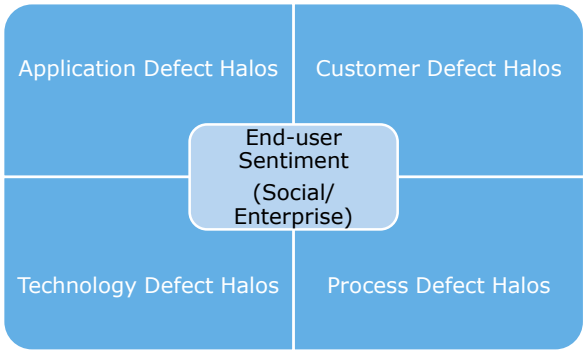
Quality Intelligence



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