



## **T14**

Test Techniques

Thursday, May 3rd, 2018

1:30 PM

# **Testing Digital Interfaces: Chatbots, Home Assistants, Touch ID, Facial Recognition, and More**

Presented by:

**Amir Rozenberg**

Perfecto Mobile

Brought to you by:



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# Amir Rozenberg

## Perfecto Mobile

At Perfecto Mobile Amir Rozenberg is the director of product management, responsible for core product strategy. Amir has pioneered mobile quality practices to extend the service across the application lifecycle. He has extensive experience in the digital industry with expertise in areas of application development, testing, delivery, and monitoring. Previously, Amir led the mobile monitoring practice at Gomez/Compuware. Prior to Compuware he led the founding of Adva Mobile, a direct-to-fan mobile marketing startup, and held various leadership positions at Groove Mobile, Nextcode Corp., and others. Find Amir on Twitter and LinkedIn.

## Testing Next Generation Digital Interfaces

Amir Rozenberg, Director of Product



STAR EAST  
A TECHWELL EVENT

# Hello


- Product manager by day, coder at night
- Responsible for the core platform at Perfecto

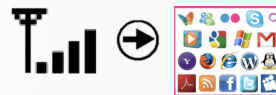
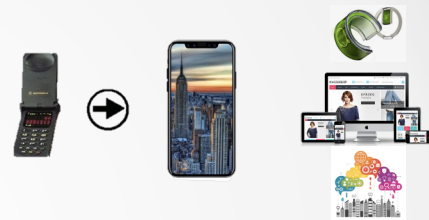
Publications: DZone, CIO Magazine, MobileTestingBlog.com etc.



I toy with






- Security & performance testing
- Globalization
- Elasticity
- Music and video streaming quality
- ...

 Amir\_rozenberg



BUT: I still have ~20 GitHub projects!

# Today

-  Success of Next Generation Digital Interfaces
-  Coverage Impact of Such Interfaces
-  Innovation in your lab: Chatbot and Touch ID
-  Correlate feedback by Interface
-  Q&A



# Survival via Digital Transformation

Over the next decade, as many as half of all U.S. bank branches could disappear  
\*Keefe, Bruyette & Woods Research

*"Our mobile app IS the Bank."*  
**Tangerine CIO**



*"Tangerine's goal is to remain an innovator in online, mobile, and digital banking."*

- First mover with innovative mobile capabilities
- Consistently high app store ratings
- Winning market share from digital laggards
- Demonstrates agility to meet changing customer needs
- **Optimized delivery pipeline** to maximize innovation and user experience
- **Reactive to feedback** from customers, operations and within Dev/QA

## Innovation

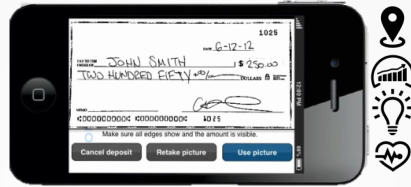
- Mobile Apps
- Remote Check Deposit
- Voice Biometrics
- Apple Watch App
- Secure chat
- Digital New Account Opening



## (Some of the) New Digital Interfaces



Conversational



Onboard Sensors

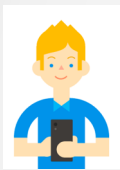


Authentication



Augmented Reality

## Digital Interfaces Drivers



User

Functional ● Correct ●  
Enjoyable

- On my terms
  - My device(s)
  - My time
  - My terms
- Easy
- Streamlined
- Enriching & fun



In just 5 days,  
**72%**  
of all capable iOS logins  
were via Touch ID



Reviews went up from  
**3 to 4 stars**  
on the Apple App Store



**800k**  
references to RBS and NatWest on Twitter in the first 24 hours

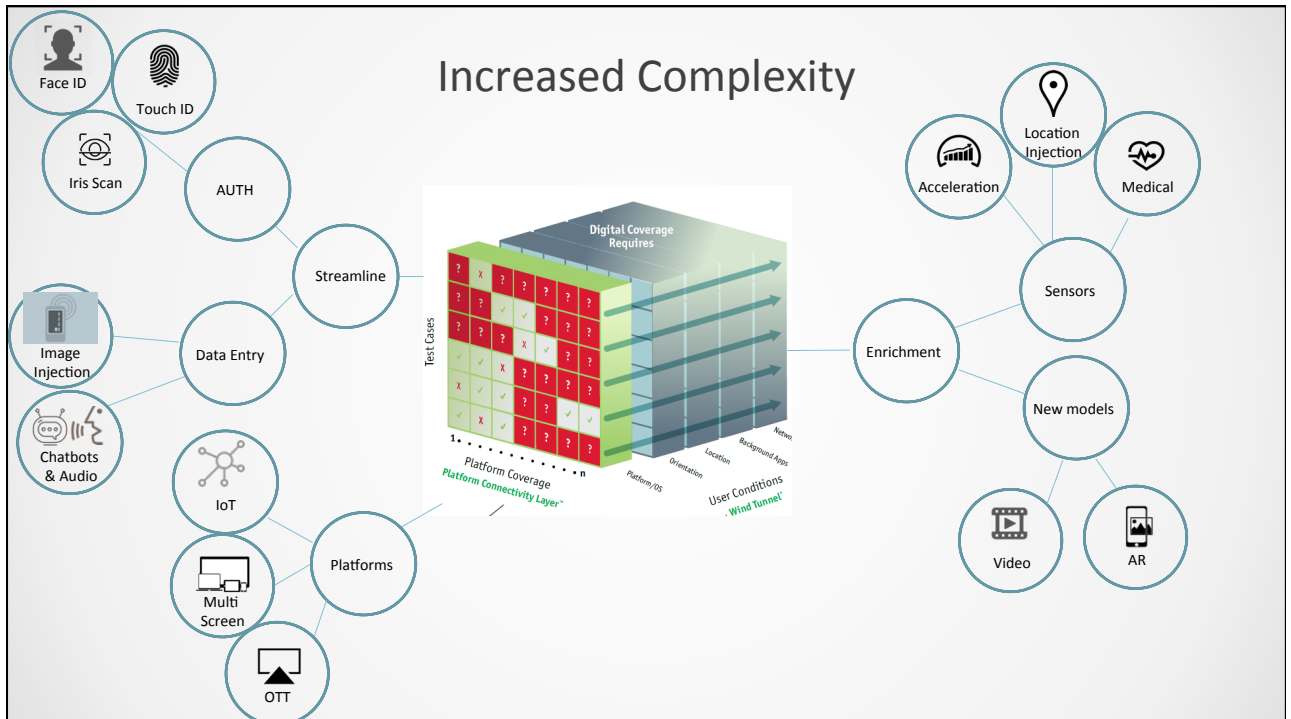


## Digital Interfaces Drivers

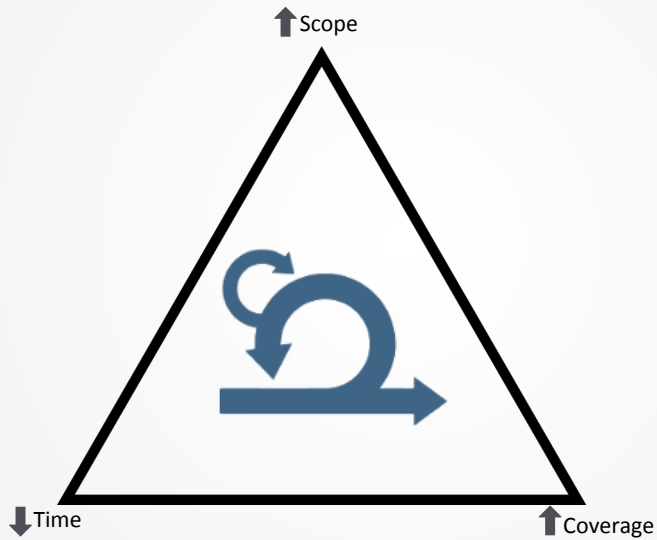


Source: Oracle

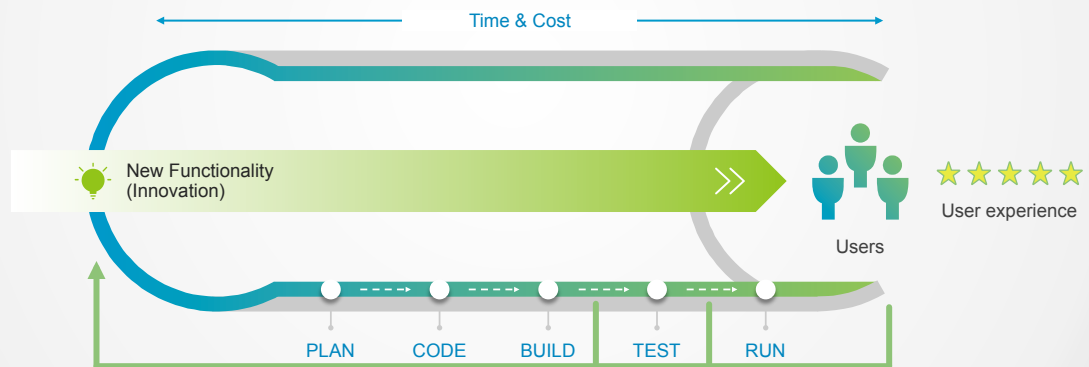
## Increased Complexity



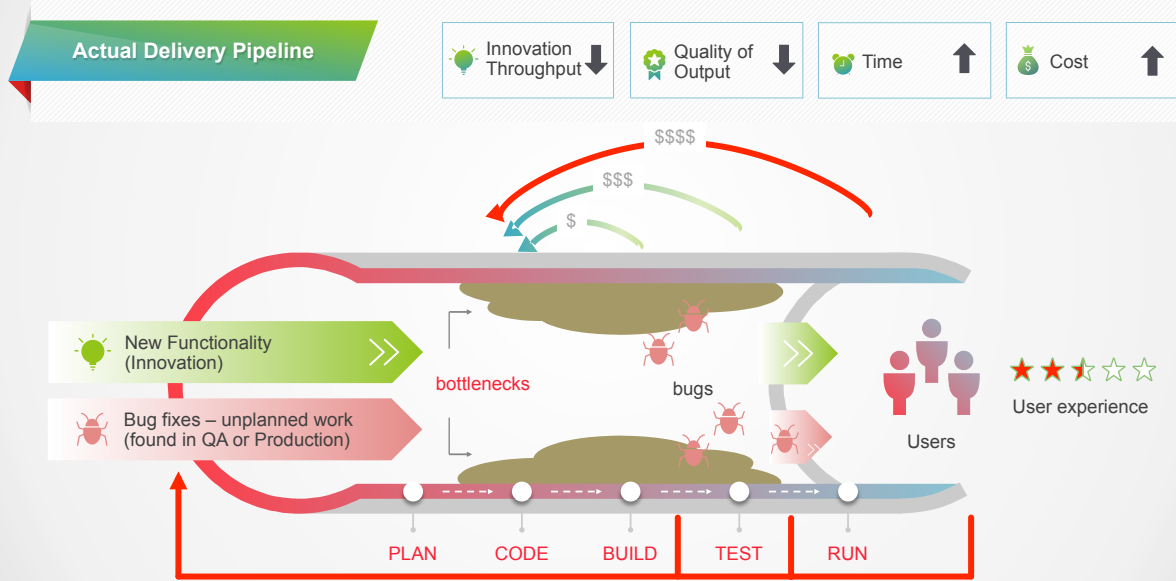
## The realities of the Dev team lead



## Plan: Get more done – optimal delivery pipeline



# Delivery pipeline challenges



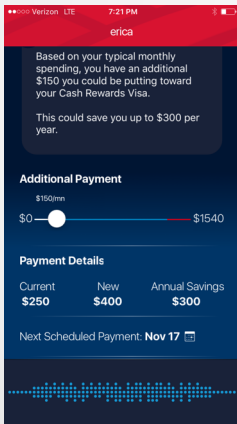
## Ensuring Quality of Conversational Chatbots



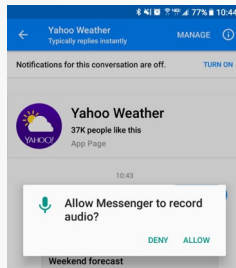


# Chatbots are the next Digital Transformation Disruption

## The 200 billion dollar chatbot disruption

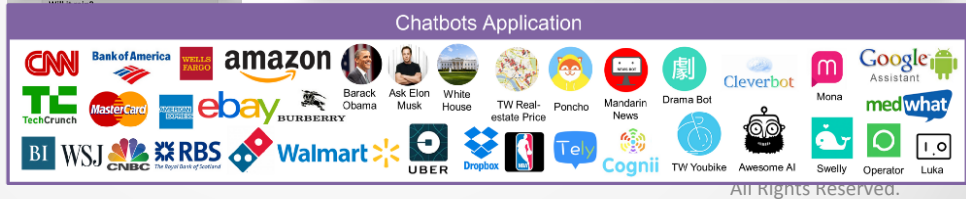


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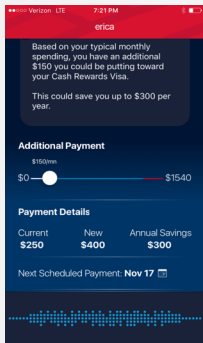
GEICO's virtual assistant Kate intuitively answers your insurance questions

How chatbots can settle an insurance claim in 3 seconds



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## BOFA's Erica



*"It makes your life so easy, it's so easy to use," Michelle Moore, Bank of America's head of digital banking. "I have Erica now in the mobile app and just to talk and speak freely, and she does things for you — how great is it that you have an assistant in your pocket that you can use at any time to do things?"*

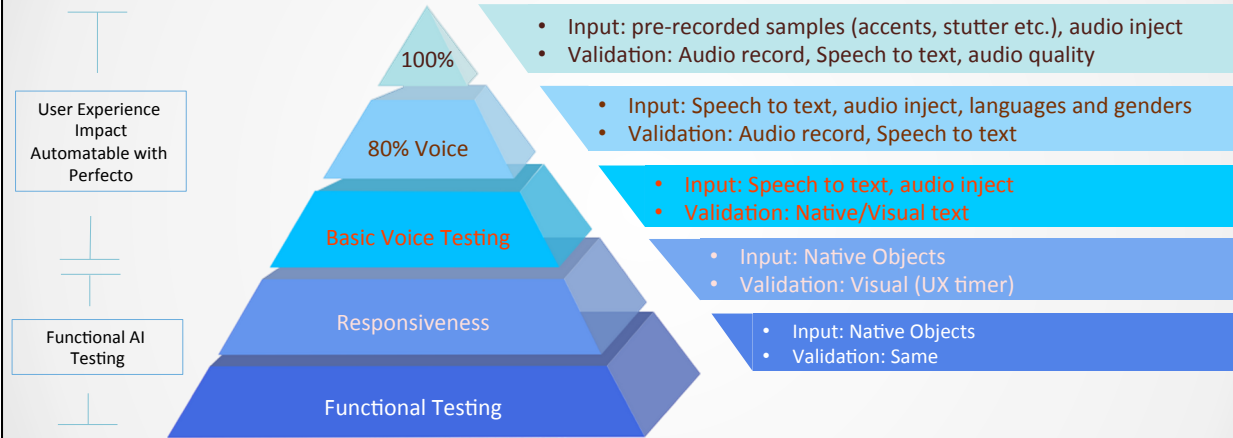
• 22M mobile app users *"In an app world, you get one shot with a client," says Aditya Bhasin, consumer and wealth management technology executive at Bank of America. "Consumers will instantly decide whether the bank's forthcoming chatbot is cool or useless."*

- 9 functions
  - Check balance, Transfer money, pay credit card, order checks
  - Text and voice AND noisy voice
- Learn: Many variations to ask the same thing
- Do not learn slang, slur, racist words

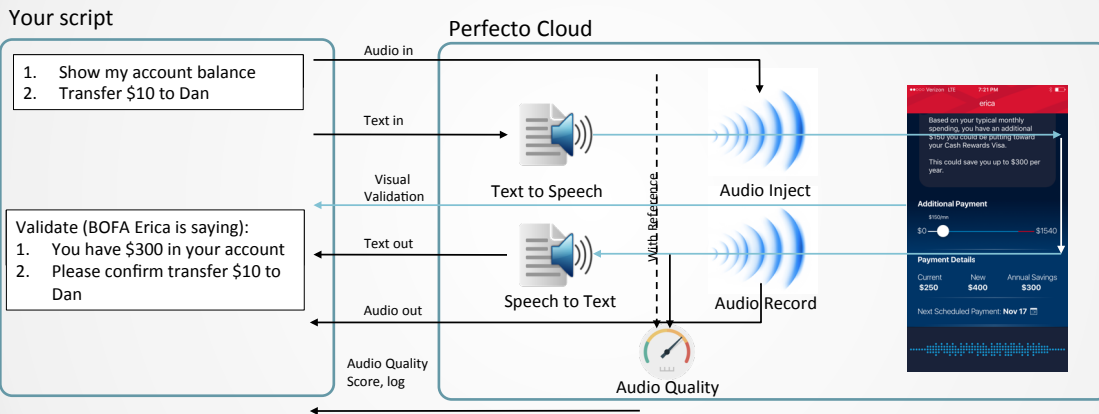
*In the hopes of avoiding the fate of Microsoft's Tay, the bank has built a profanity filter for erica.*

- Extra sensitivity to responsiveness (in conversational interfaces)
- AI *If a customer's FICO score dropped, for instance, erica might suggest better money habits*

## Prioritizing Chatbot Testing



## How Can Perfecto Help? Ex.: BOFA's Erica



# Fingerprint in the lab

## Simulate for Automation



~100 fingerprint test cases

	Before	Now
Test frequency	Biweekly	nightly
Automation	None	Full
Feedback	Late	Immediate

# Cross-Platform Analytics

Accelerate pinpointing failures by platforms / form-factors / Interface

- 550 executions/license/month
  - Across mobile+web
- Before: days to analyze failures across screens
- Now: down to minutes

Perfecto CI Dashboard - Reports Library

Check In Flow (6 platforms)

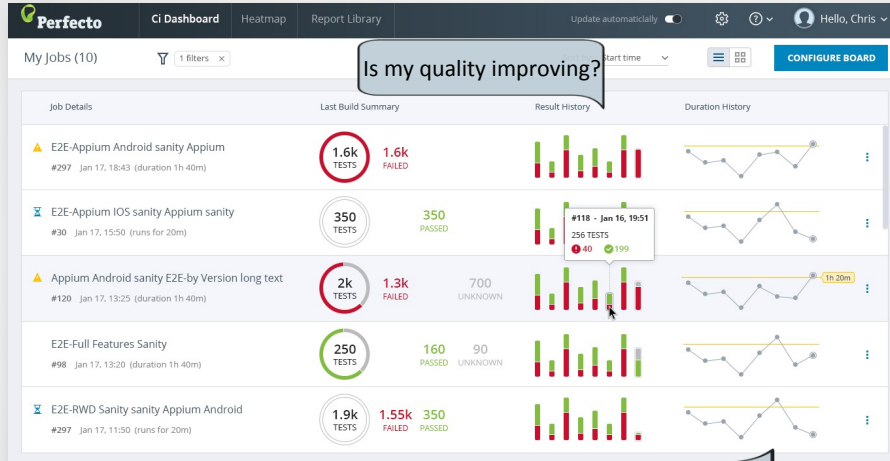
By Device: 2 FAILED, 2 PASSED, 1 PASSED, 1 FAILED

Checkpoints / Assertions:

- Click the Hamburger Menu (2 checkpoints)
- Text checkpoint (Parameters: Expected text (needle): Are you testing, Timeout: 80)
- Text checkpoint
- Open application (4 checkpoints)
- Select element on the page (12 checkpoints)
- Check Out (14 checkpoints)

Device	Status	Timestamp
Win 10 Chrome 56	FAILED	Jun 11, 14:21
Apple iPad Mini 4	PASSED	Jun 11, 14:43
Samsung Galaxy S3 Mini	FAILED	Jun 11, 14:21
Mac Sierra Safari 10	FAILED	Jun 11, 14:21
Apple iPad Pro	PASSED	Jun 11, 14:43
Apple iPhone 6S Plus	PASSED	Jun 11, 14:23

# CI Dashboard



Is my quality improving?

What is my execution duration trend?

- Per-build Real Time quality Trending
- Duration history
  - Responsiveness of the app
  - Stability of test cases
  - Capacity planning

## Let's Summarize



Complexity, compliance



Time, \$, Resources



Prioritize platforms, test cases and data (Factors)



Set the lab: Assets, global, scalable & compliant



Divide and Conquer (What can you automate?)



Build service virtualization



Fast feedback





ANY  
QUESTIONS  
?



Thank  
You



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