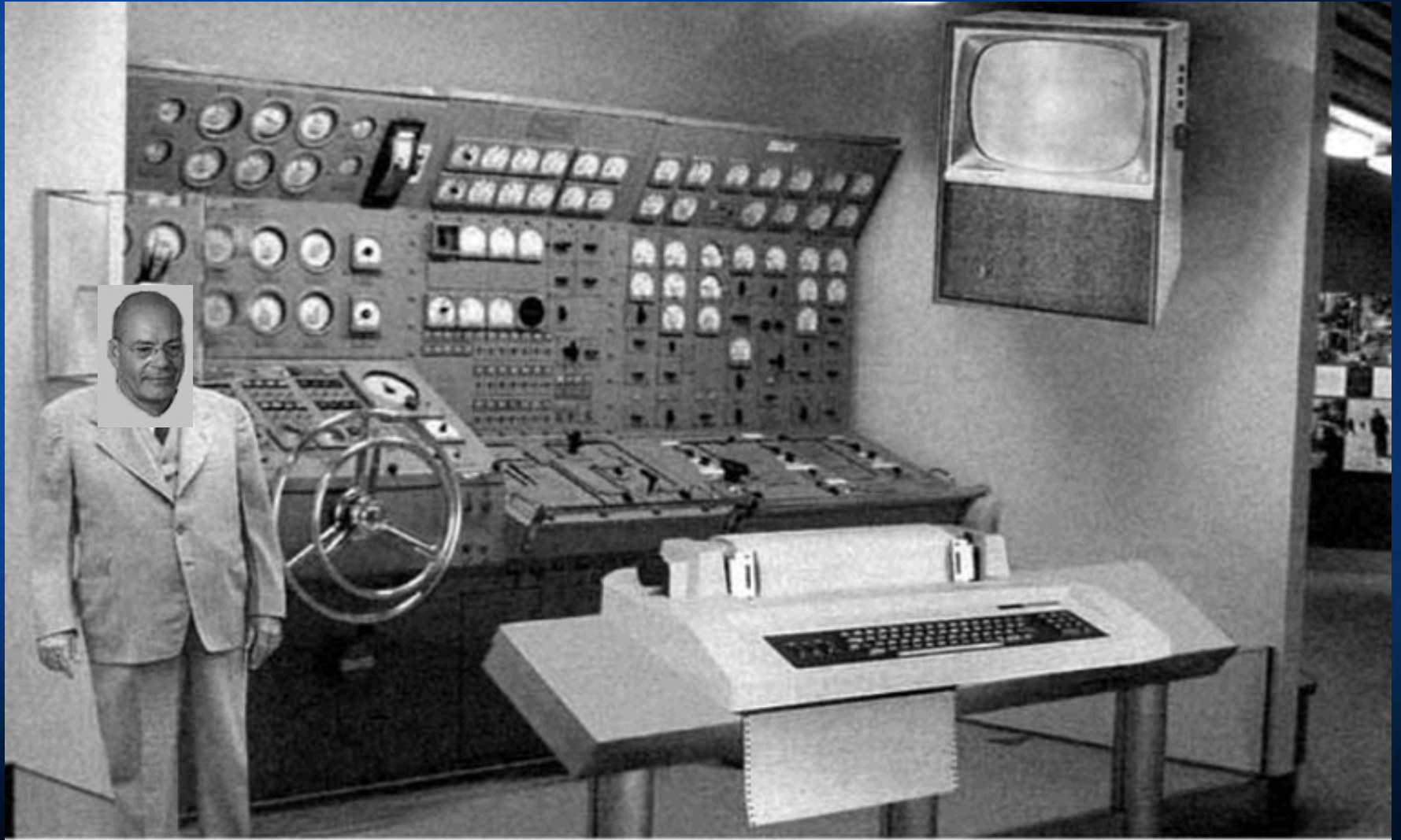


How We Test @ **Microsoft**[®]

Bj Rollison
Principal Test Lead,
Microsoft Corporation

<http://www.testingmentor.com/imtesty>

How do we test @ Microsoft



Windows
Phone
Put people first.



***Nearly 300 Products
Released in 12 Months***



***About 39 different
language versions
(> 50 additional
language packs)***

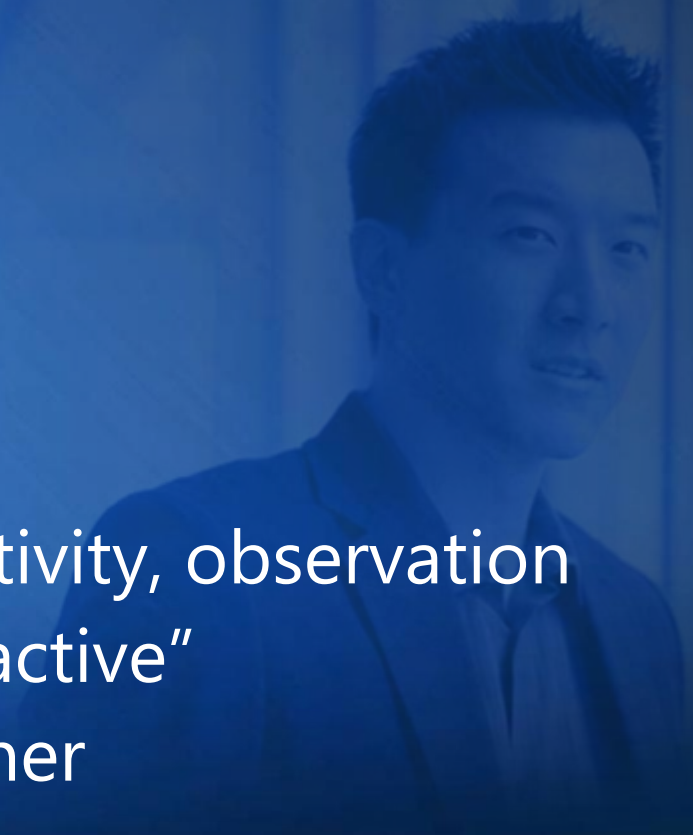


Product testing

- @ 9800 testers worldwide
- >7.5 million automated tests for Windows 7
- @ 15 million bugs per year
- > 125,000 lab machines
- > 500 builds per day

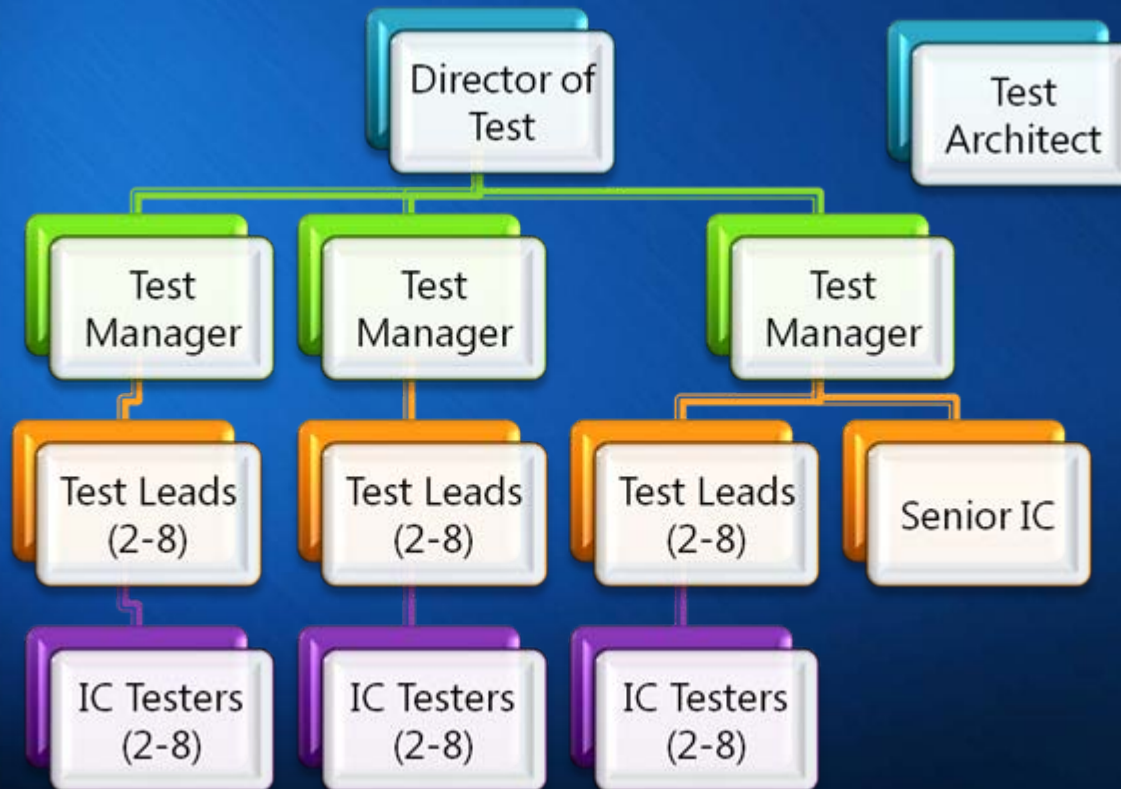
Tester profiles

- Computer science graduates, but also:
 - Electrical engineering
 - Mathematics
 - Other engineering
 - Other science
- Traits
 - Problem solving, creativity, observation
 - Self-motivated, "pro-active"
 - Adaptability, fast learner
 - Communication



Organizing testing

- Each project team 'reasonably' autonomous
- Dev & test equal partners, but separate orgs



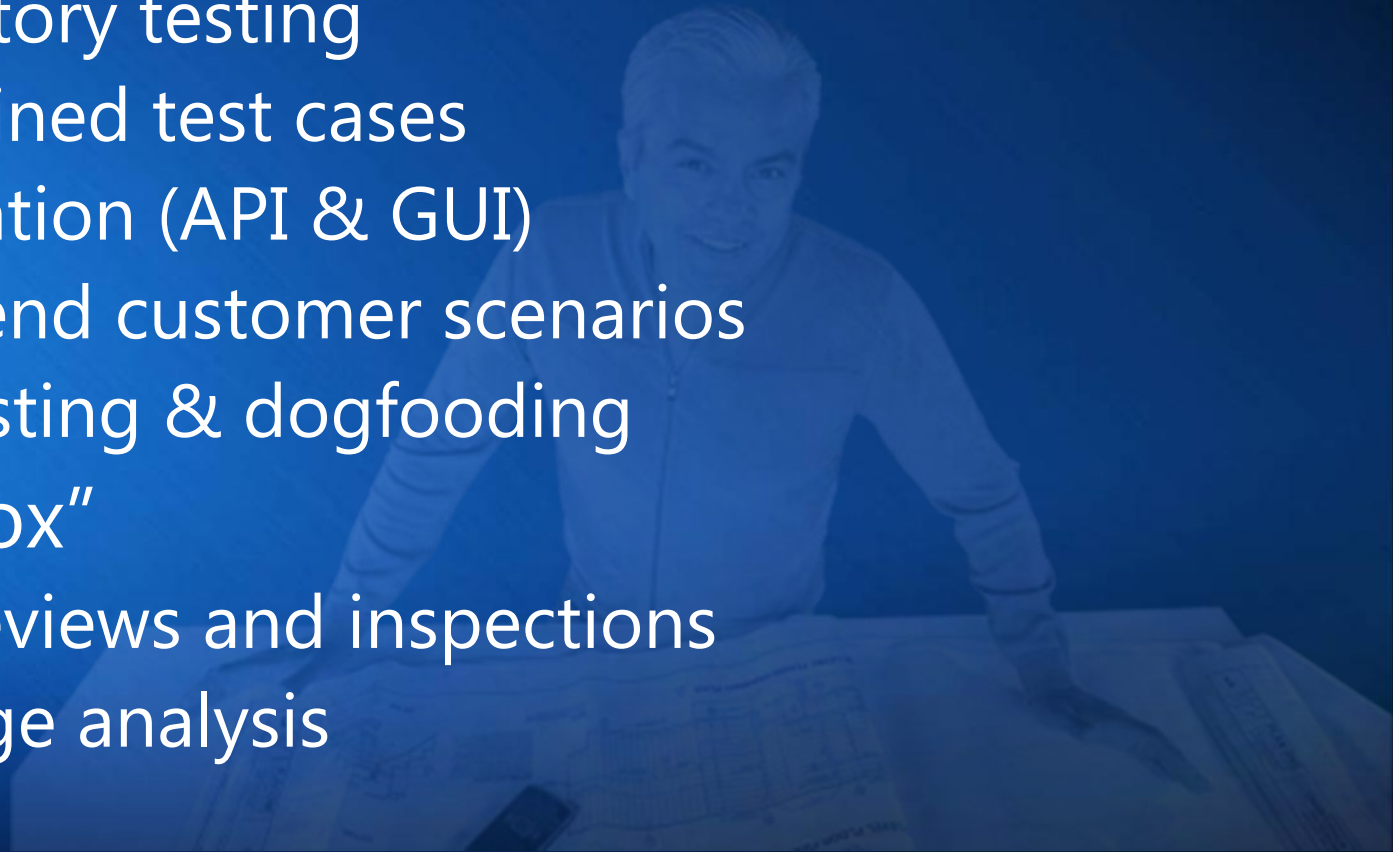
Testing approaches

- "Black-box"

- Exploratory testing
- Pre-defined test cases
- Automation (API & GUI)
- End-2-end customer scenarios
- Self-hosting & dogfooding

- "White-box"

- Code reviews and inspections
- Coverage analysis



Testing lifecycle



Productivity tools

- Test generation, static and dynamic analysis

The screenshot shows a web-based bug tracking interface. The window title is 'Bug 2851'. The main form is divided into several sections:

- Title:** new artifacts won't save on edits
- Path:** [Redacted]
- Status:** Resolved
- Assigned To:** [Redacted]
- Issue type:** Code Defect
- Severity:** 1
- Priority:** 1
- Date:** 8/4/2006
- By:** [Redacted]
- Opened:**
 - Date:** 8/4/2006
 - By:** [Redacted]
 - Build:** 2.0.1919.3
 - Source:** Dev
 - Source ID:**
 - How found:** Ad Hoc
 - Regression:**
 - Fix By:** RTM / RTW / RTO
- Resolved:**
 - Date:** 8/4/2006
 - By:** [Redacted]
 - Resolution:** Fixed
 - Build:** 2.0.2004.2
 - Cause:**
 - Change:**
- Project:**
 - Dev Estimate:** 2
 - Triage:** No
 - Release:** 2.0
- Closed:**
 - Date:**
 - By:**

Below the main form is a tabbed interface with the following tabs: Details (selected), Source Depot, Favorites, Duplicates, Files, Links, Clarify, History.

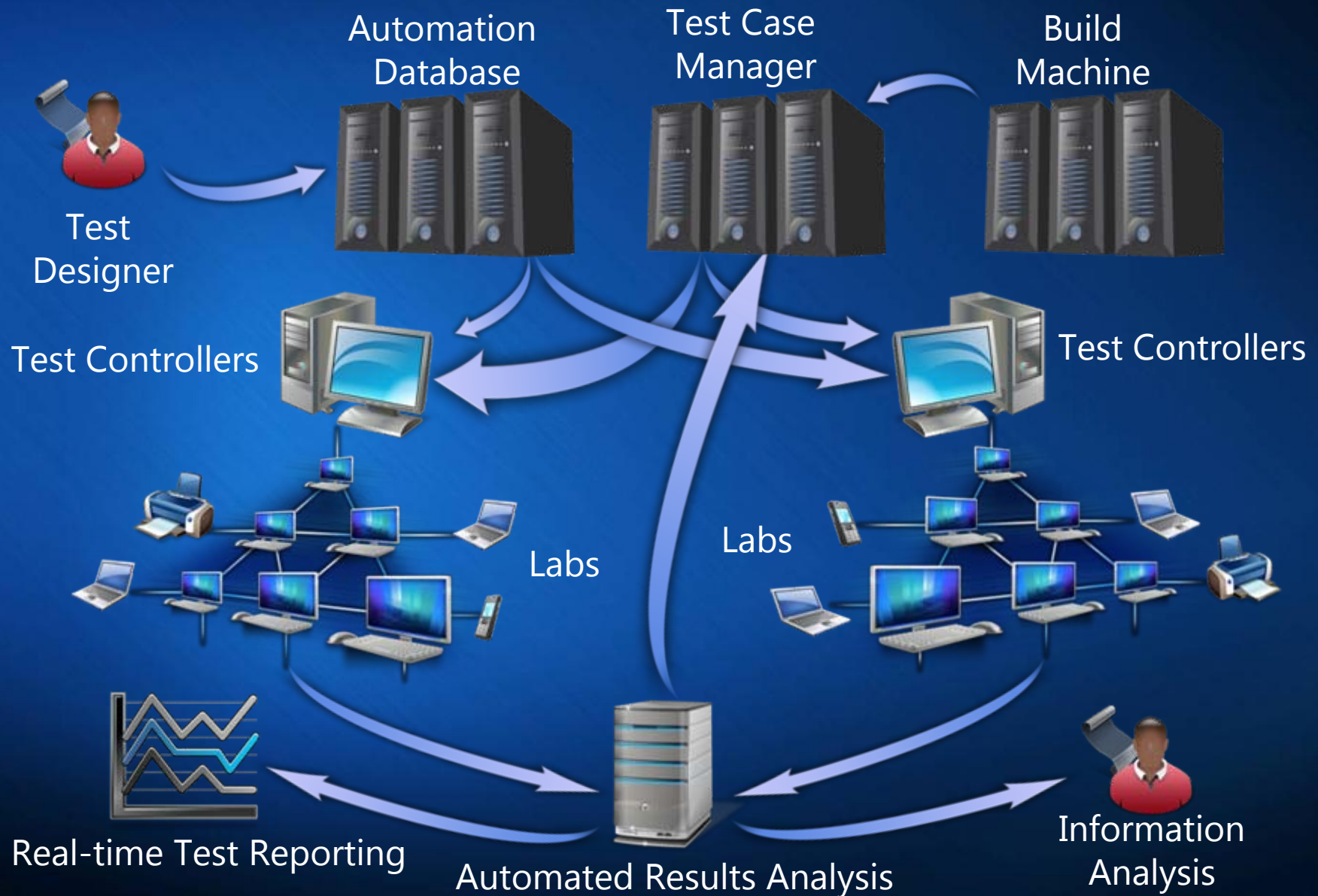
The **Description** tab is active, showing a list of events:

- 8/4/2006 3:21 PM** Opened by [Redacted] (Bug 2851 - Engineering Excellence Platform Bugs)
In SetArtifactDoc the call to GetArtifactDocument expects the PublishedContentRevisionId if the content has never been published then there isn't a value to use.
- 8/4/2006 3:28 PM** Assigned by [Redacted]
- 8/4/2006 3:29 PM** Edited by [Redacted]
needs to be an artifact with a document
- 8/4/2006 3:37 PM** Edited by [Redacted]
The 2 code paths to test are:
editing an artifact that hasn't been published
creating a new revision of the artifact by editing a published artifact
- 8/4/2006 3:37 PM** Edited by [Redacted]
Purpose:

The **Repro Steps** tab is also visible, showing the following steps:

- repro: [Redacted]
- Cre: [Redacted]
- Open the artifact in the Word editor
- change the description and/or title
- click save
- expected: The content to save
- actual: Looks like it saves but it doesn't
- Event error:
- General Information

Automation model



Manual testing

Microsoft Internet Explorer

Microsoft Internet Explorer has encountered a problem and needs to close. We are sorry for the inconvenience.



If you were in the middle of something, the information you were working on might be lost.

☒ Restart Microsoft Internet Explorer

Please tell Microsoft about this problem.

We have created an error report that you can send to help us improve Microsoft Internet Explorer. We will treat this report as confidential and anonymous.

To see what data this error report contains, [click here](#).

Send Error Report

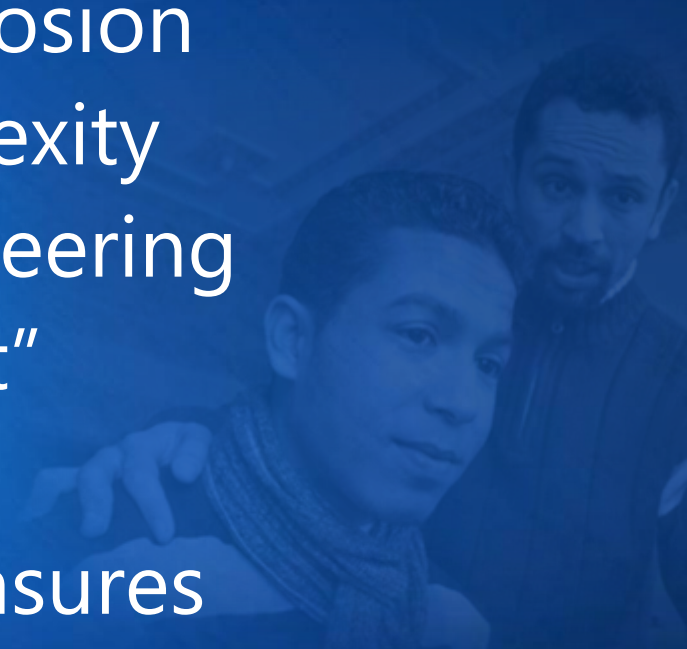
Don't Send

Big wins!

- Hiring the right people
- Training
- Removing the promotion “glass ceiling”
- Automation investments
- Dev/test relationship
- Test patents
- Customer feedback tools



Big challenges!

- Automation (esp. GUI and oracles)
 - Test matrix explosion
 - Software complexity
 - Sustained engineering
 - Tester “burn out”
 - Testability
 - Meaningful measures
 - Future computing paradigms
- 
- A faint, blue-tinted background image showing two men in an office setting. One man is in the foreground, looking towards the right, while the other is slightly behind him, also looking in the same direction. They appear to be looking at a computer screen, which is partially visible on the right side of the image.

Connected Culture





Questions