Digital Testing and Control Automation

Smart Transformation using AI and Integration
I’m your dream, make you real
I’m your eyes when you must steal
I’m your pain when you can’t feel
Sad but true

Credit: DeviantArt
Here are three telling stats from the Ponemon Institute’s 2018 Cost of a Data Breach 2018 study for IBM.

- **Cost of the average data breach to companies worldwide:** $3.86 million (U.S. dollars)
- **Cost of the average data breach to a U.S. company:** $7.91 million (U.S. dollars)
- **Average time it takes to identify a data breach:** 196 days

Source: Norton
Corporate Controls

“I’m your eyes if you must steal”

Exhibit 21: Just over half of the most disruptive frauds were detected by corporate controls

Corporate controls 52% (+4%)

Corporate culture 27% (+5%)

Beyond the influence of management 14% (-3%)

Includes
- Internal audit (routine): 14%
- Fraud risk: 13%
- Suspicious activity monitoring: 13%
- Corporate security: 5%
- Data analytics: 4%
- Rotation of personnel: 1%

Includes
- Tip off (internal): 13%
- Tip off (external): 7%
- Whistleblowing hotline: 7%

Includes
- By accident: 8%
- By law enforcement: 4%
- Investigative media: 2%

Q. How was the most disruptive fraud and/or economic crime initially detected?

Source: PwC’s 2018 Global Economic Crime and Fraud Survey
As organizations race ahead with their digital transformation endeavor, visibility, control and compliance becomes more difficult due to:

1. Limited resource bandwidth
2. Laborious processing and information gathering
3. Competing business priorities
4. Distributed data
5. Technological diversity within environments

Effective Control Environment is required ‘VITAL’
Need for change
Most (IT and non-IT controls) controls from the following frameworks:

- SOX
- ISO27001
- NIST
- Cobit
What can be tested

Access and Identity Monitoring of User ID’s
- Identify ID’s belonging to Terminated Users (Servers, Source Code Repositories, Migration Tools, Databases, Job Scheduling tools etc.)
- Validate Users LDAP group membership with HR information

Privileged access to servers and Databases
- Users from the appropriate groups have privileged access to the Technology Stack:
  - System Administrators
  - Database Administrators
  - Operations Support Personnel

Segregation of Developers Access to Production and Source-Code
- Users from the appropriate groups have access to Source Code residing in the Source Code Management tools
- Only authorized users should have access to the application lifecycle management tools (Compilers, Migration tools etc.)
- Users that have access to Source Code do not have access to Production Infrastructure

Configuration Drift Monitoring
- Identification and ongoing monitoring of Technology Assets that are not compliant with the Organizational/Hardening Standards (Password Parameters, Protocols etc.)
- Security Patch Version Monitoring and Reporting

Some more examples of IT controls that can be automated.
Today

- Manage schedule for testing controls
- Manually test the control
- Maintain spreadsheets with findings
- Find vulnerabilities
- Report findings
- Manage exceptions
- Follow-up for fixing vulnerabilities
- High recurring cost
- Only partial population testing

Tomorrow

- Focus on remediating vulnerabilities
- Find risks not thought of earlier
- Take decisions
- Provide higher value

- Manage schedule for testing controls
- Manually test the control
- Maintain spreadsheets with findings
- Find vulnerabilities
- Report findings
- Manage exceptions
- Follow-up for fixing vulnerabilities
- Control testing will be cost effective
- 100% population testing
How are Controls Tested

Digital Workers

Leverage the power of:
- RPA
- Data Analytics
- Machine and Deep Learning
- Artificial Intelligence
- Voice & Image Recognition

Automation workflows will be the controls of the future
How are Controls Tested

Organization's Technology Assets
1. Applications
2. Servers
3. Firewalls
4. Switches
5. Middleware
6. SCM tools
7. Change Management Systems
8. Databases

BAAR
1. Access the technology assets
2. Find issues
3. White-list issues that have an exception
4. Create tickets/communicate with humans for human approval
5. Remediate issues
6. Close opened tickets
7. Create reports
8. Update organizational GRC framework for issues that cannot be remediated
9. Follow-up on issues for which the exception has expired

Interface for Human Approval
1. Issue tracker
2. Web portal
3. Text message
4. Instant Messenger
5. Email
6. Virtual Agent
7. Ticket management system

Organization's GRC Framework
1. Provides the list of controls that are needed in an organization

Organizations GRC tool
1. Provides the internal controls

Organizations GRC tool
1. BAAR reports non-remediated variances

If no GRC tool
Cobit, NIST, ISO270001, Cybersecurity framework and others

Allied Media’s Patent Pending Solution
Is this a hype?

Handwork

Headwork

Robotic Process Automation

Intelligent Automation

Cognitive Automation

Structured

Unstructured

Data

Structured

Unstructured

Process

Robotic Process Automation

Intelligent Automation

Cognitive Automation
Augmented Intelligence

Force multiplier that gives humans AI super powers so organizations can do more with people they already have.

Humans and machines are good at different things:

- Intuition
- Common sense
- Emotions
- Creativity
- Probabilistic thinking
- Handling large volumes of data
- Can be trained
**Automated triggering** of the control by a GRC platform or a scheduler (RSA Archer, Service Now GRC, Virtual Agent etc.)

**Manual triggering** of the control

Control gets triggered

Anomaly found

Create a ticket in Service Now/Remedy/Jira

Monitor the ticket and send reminders

Run the control after the ticket is closed

No Anomaly

Canned and custom reports for audit

Update GRC platform

**Control Automation**
Benefits of Digital Testing

- Consolidated view
- Analytics
- 100% Population testing
- Analytics
- Risk Profiling
- Data for audit
- Analytics

Benefits

- Risk
- Cost
- Efficiency
- Accuracy
- Risk Profiling

Continuous Monitoring

Audit

Consolidated view

Analytics

100% Population testing

Analytics

Risk Profiling

Data for audit

Efficiency

Accuracy

Risk Profiling
How do I start the digital journey

1. Awareness
2. Process Selection
3. Governance Model
4. Vendor Selection
5. Pilot Project
6. Value Realization
7. Expansion
How long does automating a control take

System setup: 3 days

Automation of a control: 2 weeks
How much does it cost

Lower than you think
Appendix
Michelle: The smart cognitively able frontline agent is trained to run and provide solutions when needed.

Secure portal: This offers a secure web-based front-end to interact with humans for the inputs needed.

Workflow engine: The front-end can trigger the required workflow to deliver value.

Talk: Connect anything and transform everything. Build an application network with secure API’s.
**Issue (Insurance Company)**

- Client had high turnover rate for all levels
- IT team was overloaded and unable to keep pace with demand to provisioning & de-provisioning IT assets
- Terminated employees retained access to systems after termination
- Controls for compliance were missing; BAAR provided automation of the SOX control for **SOX Control DS5.4**

**Solution**

- Reviewed the existing processes
- Proposed and implemented processes optimization to ensure successful automation of onboarding process
- Facilitated internal customer engagement to adopt automation
- Incorporated the process changes suggested by stakeholders

**Results**

- 45% faster onboarding time
- 300 man-hour requirements reduced per month
- 96% accuracy level observed
- 45% potential headcount redeployment
Document Management for Operational Risk

Monitor emails and folders

Extract documents and images, even if zipped and check for Malware and other active content

Classify documents and extract required information from documents

Save to SharePoint as searchable PDF’s, in folders by document type

Merge documents by PO number/Invoice number

Log into SAP or any other ERP system, or any web or native application, and enter data

Dashboards, Reports and Analytics

No specific template setup for data extraction and classification of documents.
Driven by Artificial Intelligence

Michelle will respond to emails as well as chats from your employees or customers

Employees can ask Michelle if documents are pending and also ask her to send follow-up emails (virtual agent)
Live Reporting and Analytics

Sample Dashboards:
• Customizable Dashboard
• Statistical Trending
• Custom Drilldown
• Can use any d3.js visualization

Other Features:
• Live dashboards
• Wall Boards
• Command center
BAAR Integrations

New API's being added and custom API's are easy to build
Automation of business processes

Integrate legacy and new age applications

Custom AI Solutions to Deliver Business Results

GRC Orchestration

Thank You