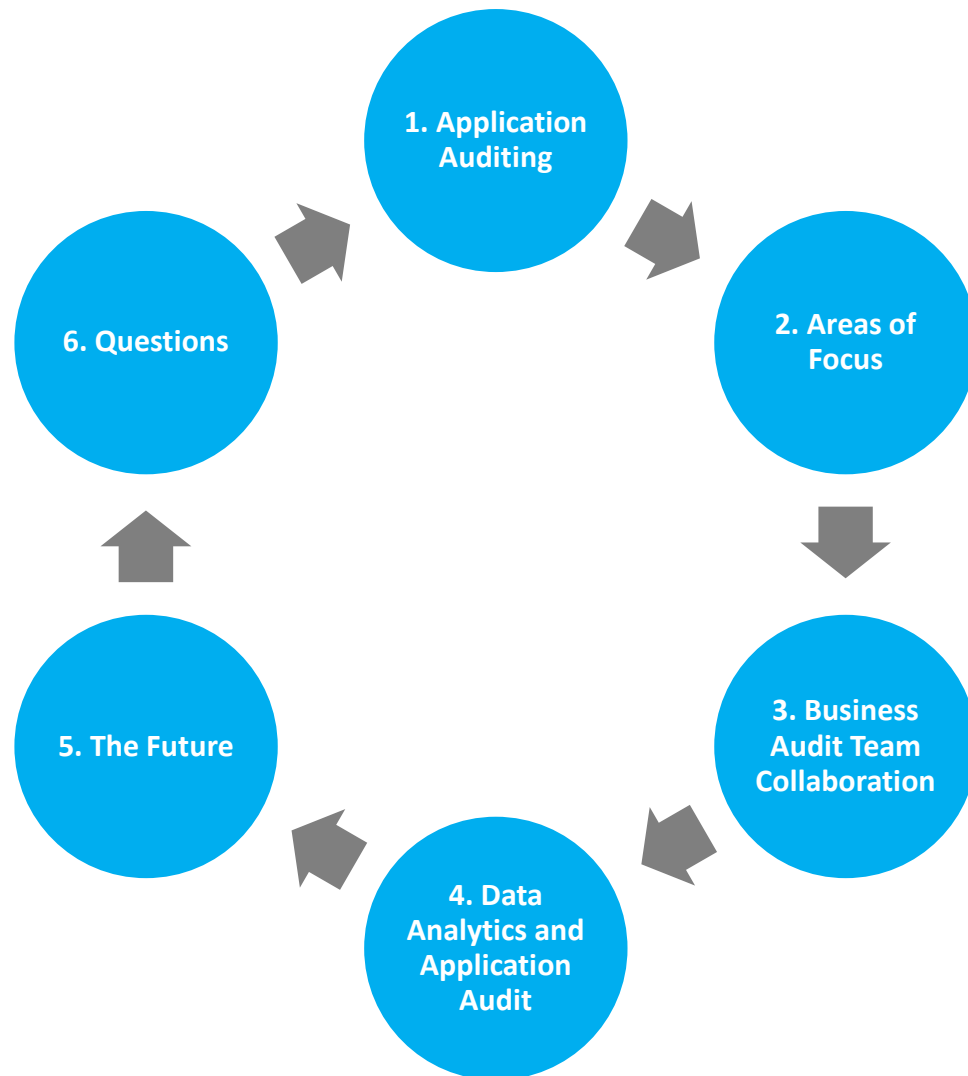


# BAGL Internal Audit

Successes in Application Auditing  
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# 1. Application Auditing

Application controls ensure the completeness and accuracy of data as it is input, processed and output from an application.

Evolved over the years as businesses have seen the cost effectiveness, efficiencies and reliability of automated controls.

## Then:

- Generic checklists



- Application and general controls reviews
- Application reviews
- Integrated auditing



# 1. Application Auditing

## Now

Integrated Audits



Change Audits



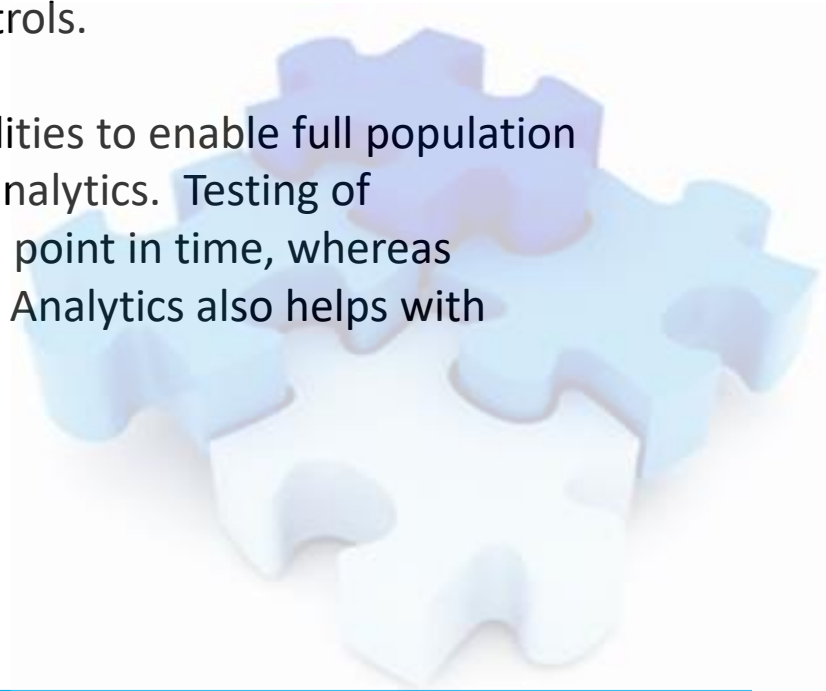
Standalone Application Audits/Thematic audits



# 1. Application Auditing

## Integrated Audits

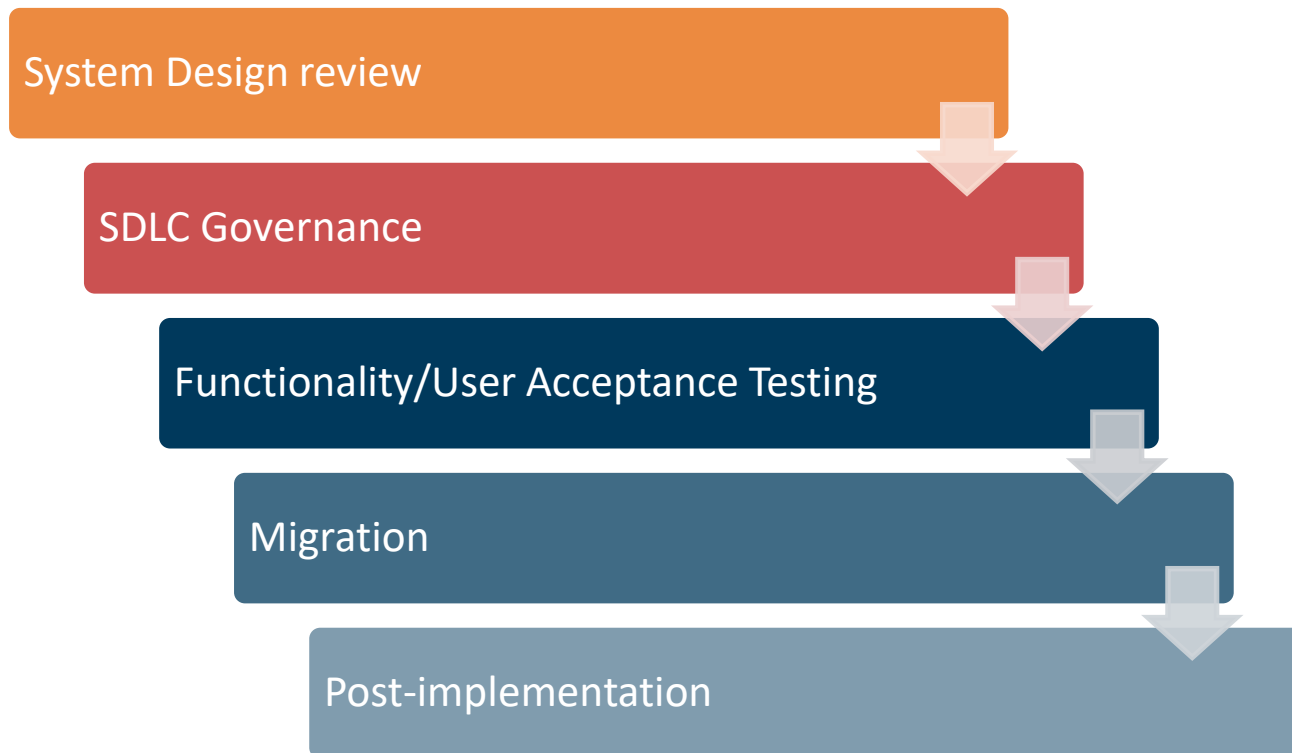
- Traditional business controls are becoming automated making it more important for IT and Business auditors to bridge the knowledge gap.
- Business and IT auditors performing end-to-end walkthroughs of the business and testing the key business controls.
- Strong use of data analytics teams/capabilities to enable full population testing, regressive testing and predictive analytics. Testing of configurations only provide assurance at a point in time, whereas analytics provide assurance over a period. Analytics also helps with identifying application bugs.



# 1. Application Auditing

## Change Audits

Auditing projects as they move through the system development lifecycle (SDLC):



# 1. Application Auditing

## Standalone/Thematic

- Post implementation
- Innovative environments where new technology (channels/biometric) is introduced to existing channels
- Thematic issues across audits (frequent issues on Disaster recovery, backups, monitoring of user activity , backup recovery)
- Central systems (central customer information , payment , sanctions, credit scoring systems)

## 2. Areas of Focus : Privileged User Activity Monitoring

Focus on user logical access and automated control effectiveness, but what about the privileged users that can circumvent all of the automated controls

- Application logging capability
- What events and items are logged by the system (critical events)
- Reviews of rights (responsibility is segregated)
- Alerting when logging is turned off
- Break-glass processes





## 2. Areas of Focus : Robotics and automation

Key decisions and checks performed by algorithms/systems.

- logic and reliability of those process
- Variance checks
- Real time response where there are high risk time critical operations kill-switches
- fallback processes in the even these do not work
- fuzzy logic for calculating/predicting fraud (logic is protected)



## 2. Areas of Focus : Alerting

Alerting/Error-handling mechanisms generated to identify control failures so that they are resolved timely.

- Confirm that the alerts are configured and agents installed
- Once off alerting or repetitive
- Testing of the alerting process
- Confirmation of receipt, regular review of escalation routes (clear responsibilities defined and not generic email to group of individuals)



## 2. Areas of Focus : Job Scheduling

Key operations via scheduled jobs (journals/payments etc.):

- Determine the type of job
- Detection of slow response times
- System checks to identify duplicate files or transactions (slow response time-self service tool)



## 2. Areas of Focus : End User Computing

End-user computing (EUC) refers to systems in which non-programmers can create workable applications. Technology diversity becoming the norm and not an exception in the current workplace.

- EUC Policy
- General and Application controls (Change control, version control, password, documentation, access, backups)



## 2. Areas of Focus : Third Party Dependencies

Increase in the use of vendors providing or hosting our applications and services.

- Master Services Agreement and Service Level Agreements (SLA)
- Regular monitoring and oversight against the SLA
- Statement on standards for Attestation Engagements (SSAE 16) and International Standards on Assurance Engagements (ISAE 3402)
- Third Party audits



## 2. Areas of Focus : Digital and Biometrics Channels

As companies roll out new technologies/channels, they also introduce new risks

- Two-factor authentication
- Storage of the bio print (voice/physical)
- Replicability of the bio print
- Third party dependencies (websites, sim-cards, app stores)



### 3. Business Audit Team

Business audit teams are becoming more familiar with IT controls. Train the teams to do control testing traditionally done by IT audit so that we can increase coverage of the more key application controls.

- Logical Access Management (Joiner, Mover, Leaver controls)
- Disaster Recovery testing
- Change Management



## 4. Data Analytics assisting with Application Auditing

Analytics are being used in conjunction with Apps controls to provide assurance on consistent operation of the control over the review period.

- Trends and insights through predictive analytic tools (R, Python, Tableau)
- Configuration settings recently implemented
- Bugs in system code
- Effectiveness of decision trees/models
- Identification of patterns and times when control failures occur (better root cause identification)
- Mule Accounts







## Questions

