



SmartPay®

*Supporting your mission*

U.S. General Services Administration

# Use of Data Analytics for Effective Program Oversight

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## GSA SmartPay TRAINING FORUM

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New Orleans, LA



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- CLPs earned during the forum will be automatically uploaded to your DAU/FAI transcript and will count towards your certifications (like FAC-COR, FAC-PM, etc.) that are housed within the DAU/FAI system.
- After the forum, please do not submit a request to upload your earned CLPs to DAU/FAI CSOD on your own.
- Allow 4–6 business weeks for the CLPs to be displayed on your DAU/FAI transcript.
- For questions, please contact [pshctraining@gsa.gov](mailto:pshctraining@gsa.gov)

# Training Agenda

- Overview and Expectation
- Foundations of Data Analytics
- Benefits of using Data Analytics
- Audit Review
- Metrics
- Available Tools and Resources

# Overview & Expectations

This training provides an overview of data analytics and shares best practices and commercial tools currently available as part of the GSA SmartPay® (SP) Program



Upon completion of this course, participants should have a better understanding of:

1. The concepts of data analytics;

2. The application of data analytics;

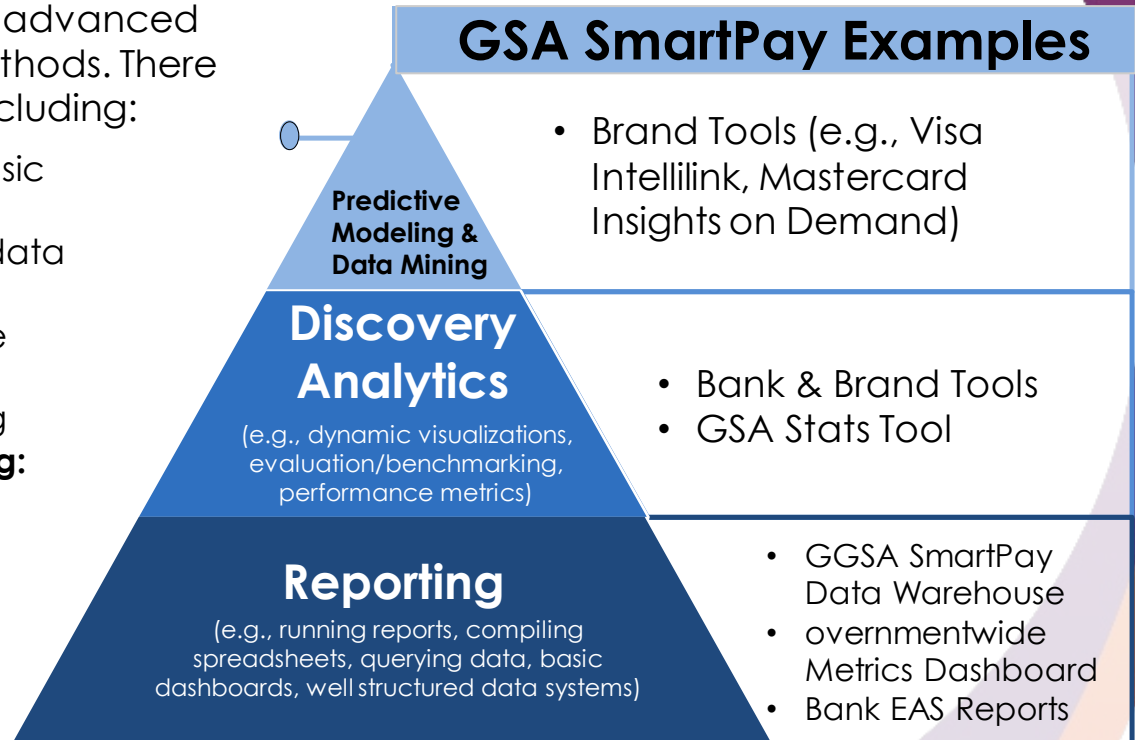
3. The resources available to Agency/Organization Program Coordinators (A/OPCs) and card managers;

4. The use of data analytic tools to enhance oversight within agency card programs

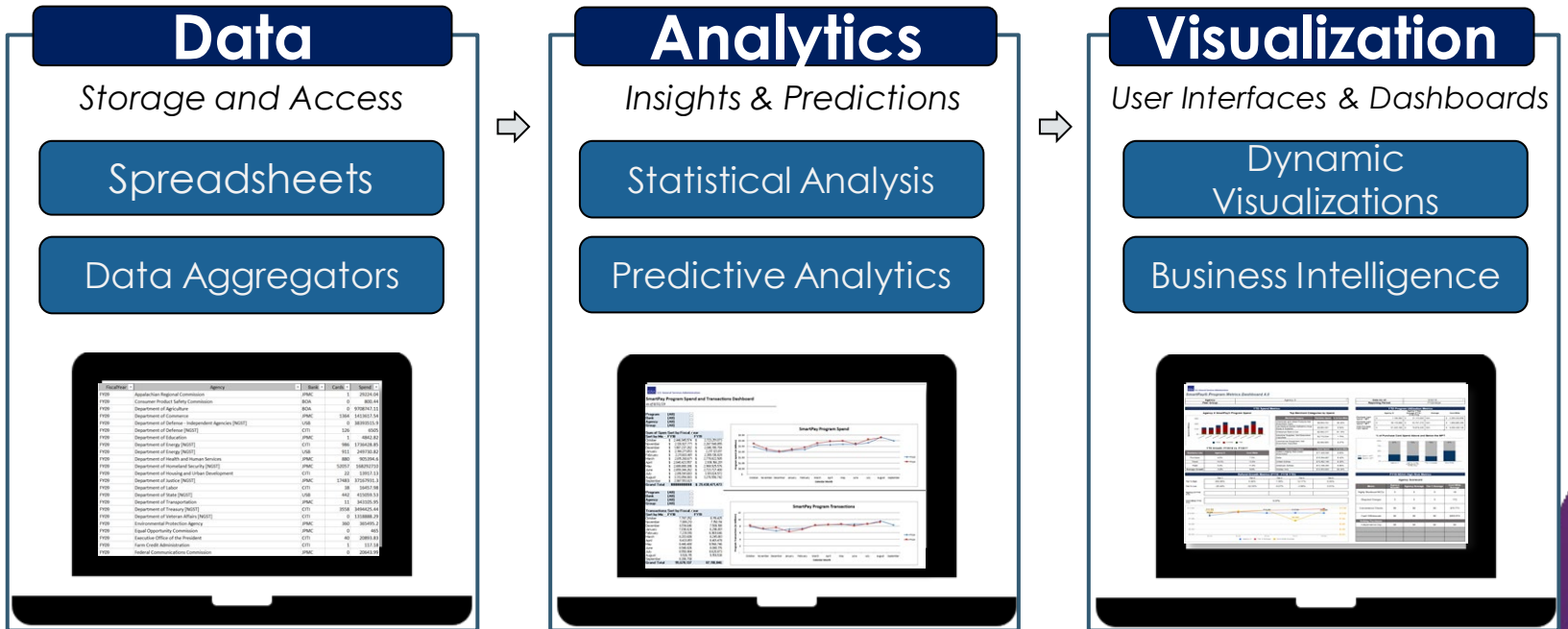
# Foundations: What is Data Analytics

Data analytics refer to the use of advanced computational and statistical methods. There are different levels of analytics including:

- **Reporting:** consists of running basic functions to organize data (e.g., using Microsoft Excel to output data in table formats or charts)
- **Discovery Analytics:** involves the creation of real-time dynamic visualizations and benchmarking
- **Predictive Modeling/Data Mining:** involves the use of advanced statistical techniques to predict future outcomes



# Levels of Data Analytics



# Why Should You Use Data Analytics



**Prevent potential fraud, misuse and abuse**

**Significant improvements in their decision making and risk avoidance**

**Data analytics provide meaningful indicators and empower agencies to leverage data to:**

**Support the management of their card program, enhance internal controls, and make decisions based on real-time data**

**Improve operations and oversight capabilities through benchmarking and predictive analysis**

# Impact of Data Analytics



The implementation of key data analytic principles can enhance controls against fraudulent activity and support A/OPCs in running their card programs more efficiently



Agencies can use data analytics to grow their programs by analyzing trends in transaction data to increase card spend and earn more refunds. This includes opportunities for the expanded use of the purchase card for contract payments



In addition to the positive impacts on program efficiency, data analytics solutions help agencies maintain compliance with public laws and congressional mandates



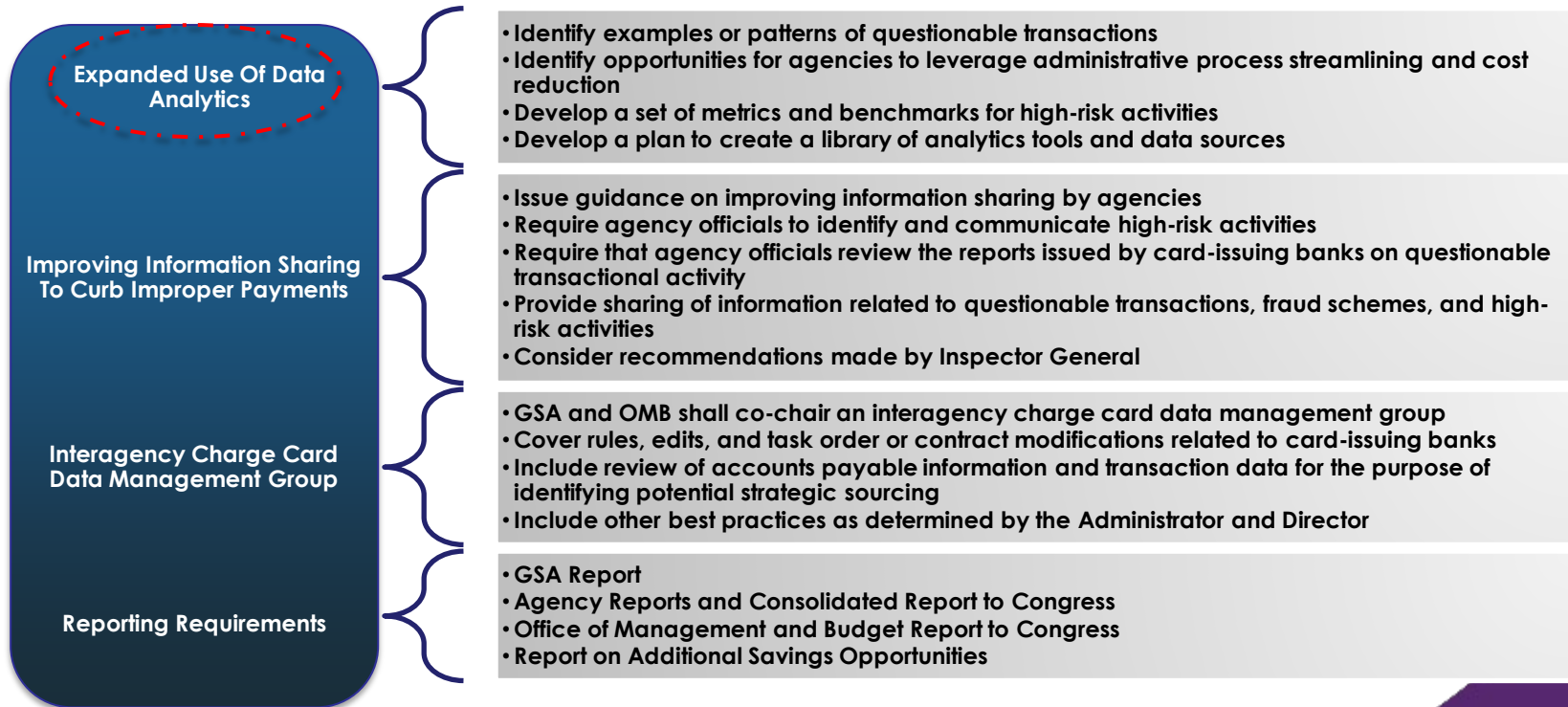
# FY18 NDAA Title XVIII: Purchase & Travel



## NDAA Title XVIII

On December 12, 2017, the FY18 NDAA became Public Law 115-91. Title XVIII contains the full text of S.1099/H.R.4047, "Saving Federal Dollars Through Better Use of Government Purchase and Travel Cards Act of 2017."

# FY18 NDAA Title XVIII: Purchase & Travel



# FY18 NDAA Title XVIII – Expanded Use of Data Analytics

The **objective** for **leveraging analytics** is to **identify patterns of questionable transactions** and to develop tools and methods for use by GSA and agencies to:

**1**

Identify questionable transactions

**2**

Recover improper payments

**3**

Leverage the program's administrative process streamlining and cost reduction, including card-based strategic sourcing

**4**

Develop a set of metrics for high-risk transactions

**5**

Create a library of analytic tools and data sources for agency use

# FY18 NDAA Title XVIII – GSA SmartPay® High Risk Metrics

The GSA Center for Charge Card Management (CCCM) and the GSA SP Data Management Group (DMG) identified the initial set of governmentwide high-risk metrics

Metrics
Cash Withdrawals
Convenience Checks
Holiday Purchases
Transactions at Highly Monitored MCCs
Disputed Charges

- These metrics are in addition to what CCCM is currently posting and are generated and updated for CFO Act agencies and posted in the GSA SP data warehouse portal on a quarterly basis

# Fraud Analytics and Enhanced Capabilities

Under GSA SP3, Citibank and US Bank offer the following customizable tools to meet the unique mission of agencies:

- US Bank Payment Analytics
- Citi Program Audit Tool (PAT)
- Mastercard Insights on Demand (IOD)
- Visa IntelliLink

# Rule Templates & Case Management

## Rule Templates

- Are flexible and easy to use
- Can be customized to meet the specific needs of an agency
- Can be modified quickly
- Can be applied at the hierarchy or account level

## Case Management

- Is flexible and can be managed by designated personnel
- Can be used with other data mining tools to enhance the management of your card program

# Sample Rule Templates (1 of 3)

Rule	What It Tracks
Account Balance	Daily account balances that are outside an over/under designation and a dollar amount parameter.
Excessive Cash Withdrawals	Excessive cash withdrawals on a specific account.
Extensive Use of Convenience Checks by Dollar Amount	Extensive use of convenience checks based on dollar amount during a specified number of calendar days.
Foreign Currency Transactions	Transactions in a currency other than U.S. dollars.
Holiday Purchases	Transactions on holidays.
Merchant Watch List	Transactions with non-preferred suppliers.

# Sample Rule Templates (2 of 3)

Rule	What It Tracks
Purchase Split Across Multiple Merchants with the same MCC	Transactions that appear to be a split purchase (e.g., multiple transactions at similar MCCs to avoid a single purchase limit) during a time period of 1 to 3 days that the agency specifies in the rule.
Purchase Split Into Multiple Transactions at the same Merchant	Transactions that appear to be a split purchase (e.g., dividing a single transaction at the same merchant to avoid a single purchase limit) during a time period of 1 to 3 days that your agency specifies in the rule.
Transactions in Highly Monitored MCC	Transactions with MCCs that are on the highly monitored MCC list.

Source: Information is from US Bank Payment Analytics and is for illustration purposes only



# Sample Rule Templates (3 of 3)

Rule	What It Tracks
Travel Card Purchase in Cardholder's ZIP Code or Postal Code	Transactions with merchants that are in the cardholder's ZIP/Postal code.
Two or More Purchases at the Same Merchant within the Same Hierarchy	Transactions at the same merchant on the same day from 2 or more cardholders in the same hierarchy position.
Weekend Purchases	Transactions on Saturday and Sunday.

Source: Information is from US Bank Payment Analytics and is for illustration purposes only

# Transactions w/unauthorized MCCs

- Sample list of unauthorized MCCs
- The list should be customized based on the policy and specific needs of the agency

MCC	Description	Card Type
5698	Pawn Shops	Purchase & Travel
4829	Wire Transfer – Money Orders	Purchase & Travel
5094	Precious Stones and Metals, Watches and Jewelry	Purchase & Travel
5813	Cocktail Lounges, Bars-Alcoholic Beverages	Purchase & Travel
7273	Dating & Escort Services	Purchase & Travel
7995	Betting including Lottery Tickets	Purchase & Travel
9223	Bail and Bond Payments	Travel

# Machine Learning

- Reviewing transactions individually to detect waste, fraud and abuse can be labor intensive and error prone
- Machine learning can effectively and efficiently help identify anomalies from typical spending patterns
- Ex: Predictive module in Visa IntelliLink
  - Scores each transaction with a proprietary predictive algorithm to help identify out of policy spend
  - Can extend date range for spending history
  - Provides reason codes for high scores
  - Contains a learning capability based upon cardholder behavior and spend patterns

# Audit

Audits help to validate program compliance and ensure policies and procedures are being followed

Provide assurances that controls are properly implemented

**One of the most common risk factors cited by auditors is a weak internal control environment**, i.e., a failure to implement adequate safeguards against card misuse

**Opportunity** for fraud and abuse arises if cardholders know that their purchases are not being properly reviewed

Very important that agencies select the right sample size and frequency for audit

For convenience checks, subject to the agency's specific policy, if possible, conduct 100% review of all convenience check transactions

Documentation is key!!!

# Methods for Audit

Statistical  
Sampling

Selecting a random sample from the transactions

Non-  
Random  
Sampling

Non-random method of selecting a sample based on judgmental factors

Data  
Mining

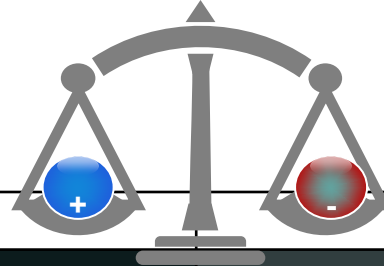
This is a form of non-random sampling that typically employs

Spot  
Checks

These are random on-site or desk reviews of cardholders, AOs, etc.

Source: HHS GPC  
Program Directive  
(Version 7.0—Nov 2021)

# Audit Methods



## ADVANTAGES

## DISADVANTAGES

### Statistical Sampling

1. Allows review results to be projected to the entire population.
2. Minimizes possible bias in the sample selection process.
3. Can be applied to individual cardholders, AOs, or to the entire organization.

1. Requires knowledge of statistics to determine sample size, selection, and projection to entire population.
2. Requires resources to identify and select the sample, and to review transactions in the sample.

### Non-Random Sampling

1. Simplifies sample selection.
2. Can be easily scaled to fit the resources available for conducting the review.

1. Review results cannot be projected to the entire population.
2. The sample may be biased and not be indicative of overall performance, whether positive or negative

### Data Mining

1. Software-based data mining can screen and identify suspicious transactions faster than a manual review of the data.
2. Serves as a good compliance technique by directly targeting suspicious transactions.

1. May result in additional expense to acquire and use software.
2. May not project results to the entire population. Subtleties and exceptions in data may generate false positives.

### Spot Checks

1. Useful for ensuring compliance because personnel never know when they may be reviewed.
2. Useful for targeting high-risk areas.

1. Cannot project results to the population.
2. Requires resources to conduct the reviews.

Source: HHS GPC Program Directive (Version 7.0–Nov 2021)

# Helpful Tips for Fraud Prevention

1. Ensure key duties are separated, such as making purchases, authorizing purchases, and reviewing and auditing purchase documentation.	5. Review statements that included duplicate transactions or questionable transactions, such as purchases of jewelry, home furnishings, cruise tickets, electronics, and other consumer goods.
2. Review cardholder statements, receipts and invoices to detect delinquency and misuse.	6. When having goods shipped, the same person should not approve and place the order or place the order and receive the goods.
3. Review span of control: AO to cardholders' ratio and the average number of monthly purchase card transactions each AO reviews.	7. Ensure each cardholder is assigned an AO other than the cardholder.
4. Pay attention to accounts with questionable history and/or high predictor scores. Look for spending at department stores, e.g., Macy's, Jos. A. Bank, Saks Fifth Ave, etc.	8. Pay attention to returned goods for store credit instead of credit going back to the agency.

# Revised OMB Circular No. A-123

- On August 27, 2019, the Revised OMB Circular No. A-123, Appendix B was issued. Appendix B contains "A Risk Management Framework for Government Charge Card Programs"
- Under Section 5.3.2 and Section 5.3.3 of the revised OMB No. A-123 Circular, Appendix B, CFO Act Agencies are required to provide Statistical and Narrative Reporting to CCCM on an annual basis
- These submissions provide insight into agency best practices for charge card management as well as monitoring delinquency and interesting statistical metrics



# Revised OMB Circular No. A-123: Insights

Key Insights from statistical reporting based on data received from CFO Act Agencies in FY21:

317

**Average number of Purchase cards with limits above the MPT per agency.** Decrease of **-42%** compared to FY20 (543)

644

**Average increase in Fleet card counts compared to prior reporting period.** Decrease of **-53%** compared to FY20 (735)

7.5K

**Number of convenience checks written.** Decrease of **-70%** compared to FY20 (23.9K)

1:1.7

**Average Purchase span of control.**  
*(1 AOPC:1.7 Cardholders)*

# Leverage Data— Governmentwide Metrics

- GSA provides interactive dashboards for each CFO Act agency that allows agencies to compare key statistics to their own thresholds, their peer group, and governmentwide averages
- CFO Act agencies can access the GSA SmartPay Portal, including the Quarterly Metrics dashboards at <https://spdatawarehouse.gsa.gov/>

## Sample Reports from Bank EAS

**Declined  
Authorizations  
Report**

**Disputes Report**

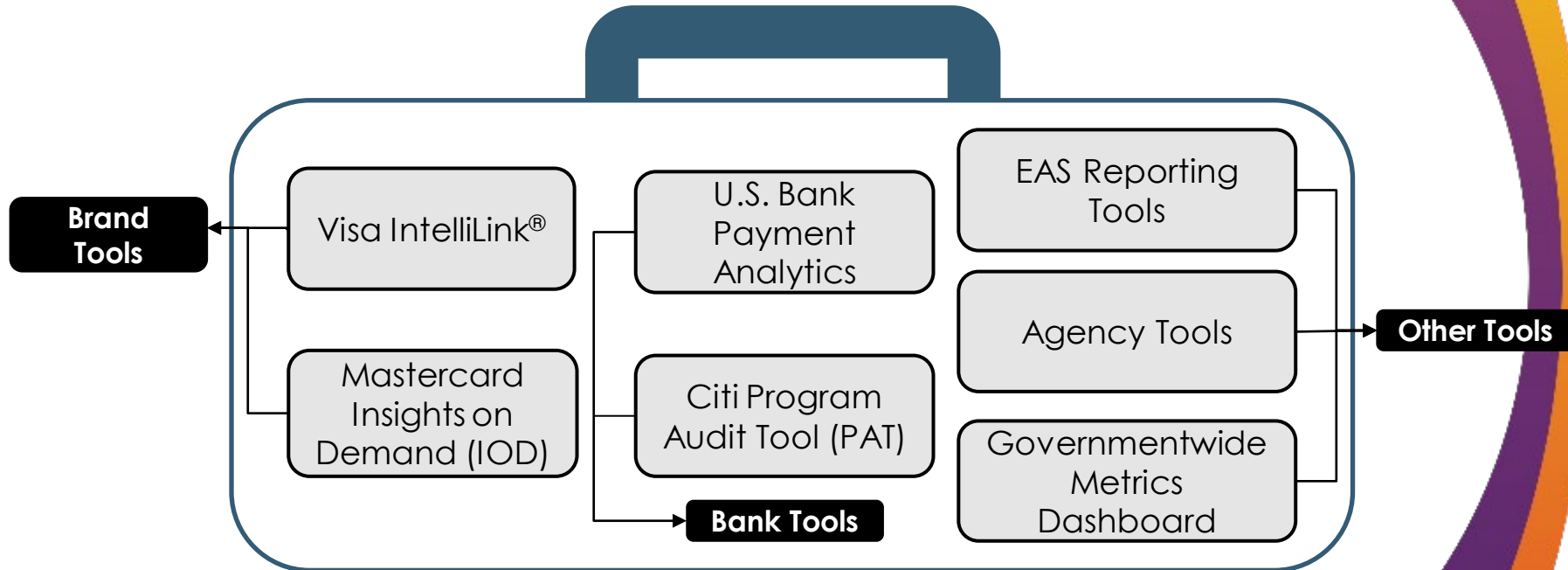
**Lost/Stolen Card  
Report**

**Cash  
Withdrawals  
Report**

- Leverage available reports from bank EAS to:
  - Review declined transactions and the reason for the decline
  - Identify outstanding and resolved disputes including the status on the dispute from the original charge through the resolution
  - Identify lost, stolen, invalid, or canceled cards, and unusual spending activities
  - Review cash withdrawal report and monitor pattern of excessive cash withdrawals—cash withdrawals with no associated travel, e.g., air, hotel, car rental

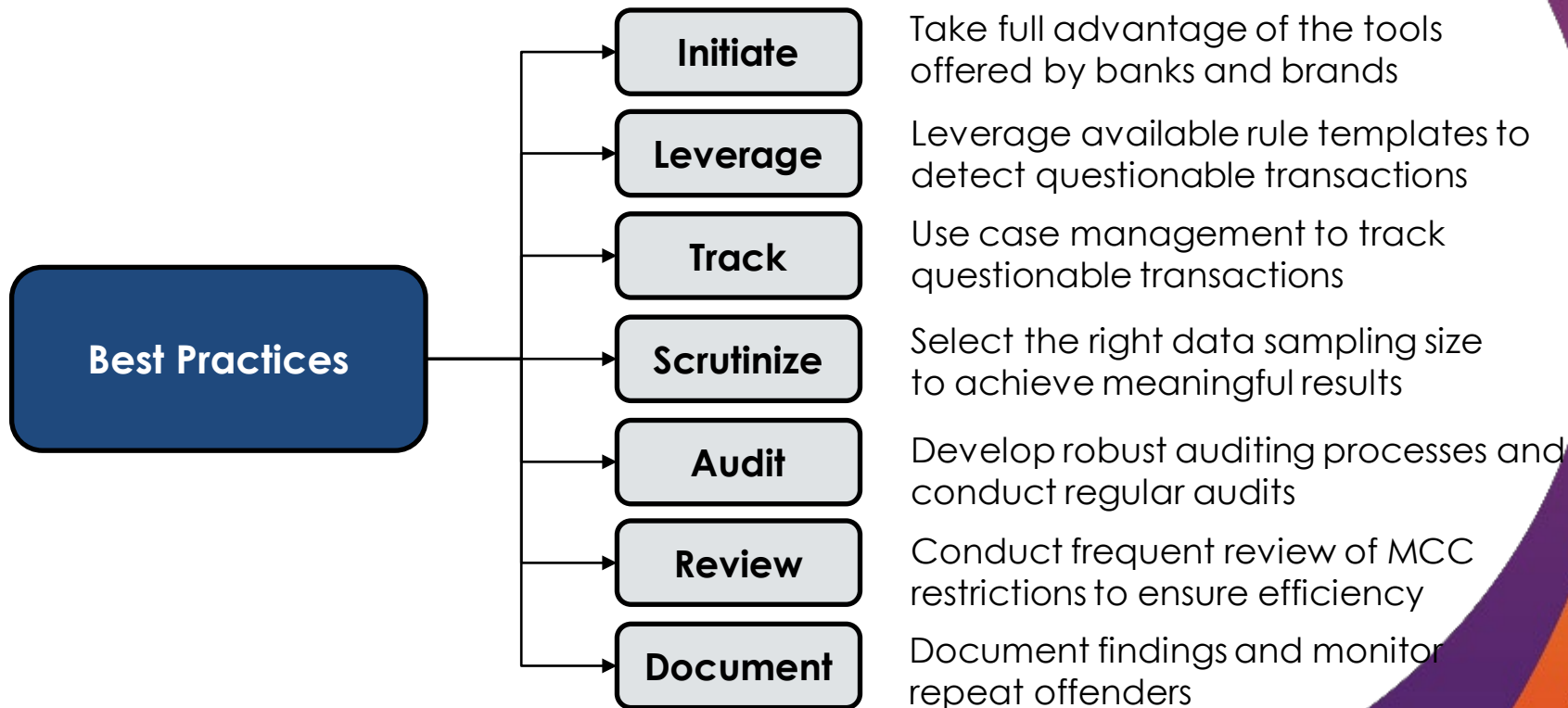
Each contractor bank's EAS provides over 50 standard reports to help agencies manage their card programs

# GSA SmartPay<sup>®</sup> Analytic Tool Set



Effective applications of data analytics involve using multiple tools and processes to address agency specific needs

# Best Practices



# Additional Training from SP3 Banks

- Please see the training schedule for information on training offered by contractor banks at the Forum.
- For more information on the training offered by your contractor bank, please see the following sites and contact information:
  - Citibank: <http://www.cards.citidirect.com/welcome.asp>
    - Customer Service: (800) 790-7206
  - U.S. Bank: <https://access.usbank.com/cpsApp1/index.jsp>
    - Customer Service: (888) 994-6722

# Additional Training from Brands

- More information and specific trainings on Visa IntelliLink and Mastercard IOD can be accessed at the following sites:
  - <http://intellilink.spendmanagement.visa.com>
  - <http://globalrisk.Mastercard.com/online-resources-2016/>

# GSA SmartPay® Resources

- GSA Smart Bulletins
  - <https://smartpay.gsa.gov/policies-and-audits/smart-bulletins>
- Other Program Manager Resources
  - <https://smartpay.gsa.gov>
- GSA SmartPay Training
  - General Info: <https://training.smartpay.gsa.gov/>
  - Training does not require a login



