A NEW LEAF

Agricultural Network Exchanging Witnesses and Leading Experiences Against the Fraud

AVEPA AGENZIA VENETA PER I PAGAMENTI IN AGRICOLTURA

OLAF EUROPEAN ANTI-FRAUD OFFICE

A New Leaf project. Final conference. "New policies against frauds in agriculture and shared models of detection and control by the Paying Agencies"

Padova, September 23rd 2015

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EY Building a better working world

Measurement models and tools to support fraud risk analysis

Padova, September 23rd 2015

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Anti-Fraud Model

The elements of anti fraud risk management program

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Effective fraud risk management provides an organization with tools to manage fraud risk. Such approach has four phases:

Assessment

Identify the scope of the analysis and the key officer, profile the current state of internal controls and fraud risk management and define steps necessary to close the gap.

Design

Develop a program that encompasses controls to prevent, detect and respond to incidents of fraud.

Implementation

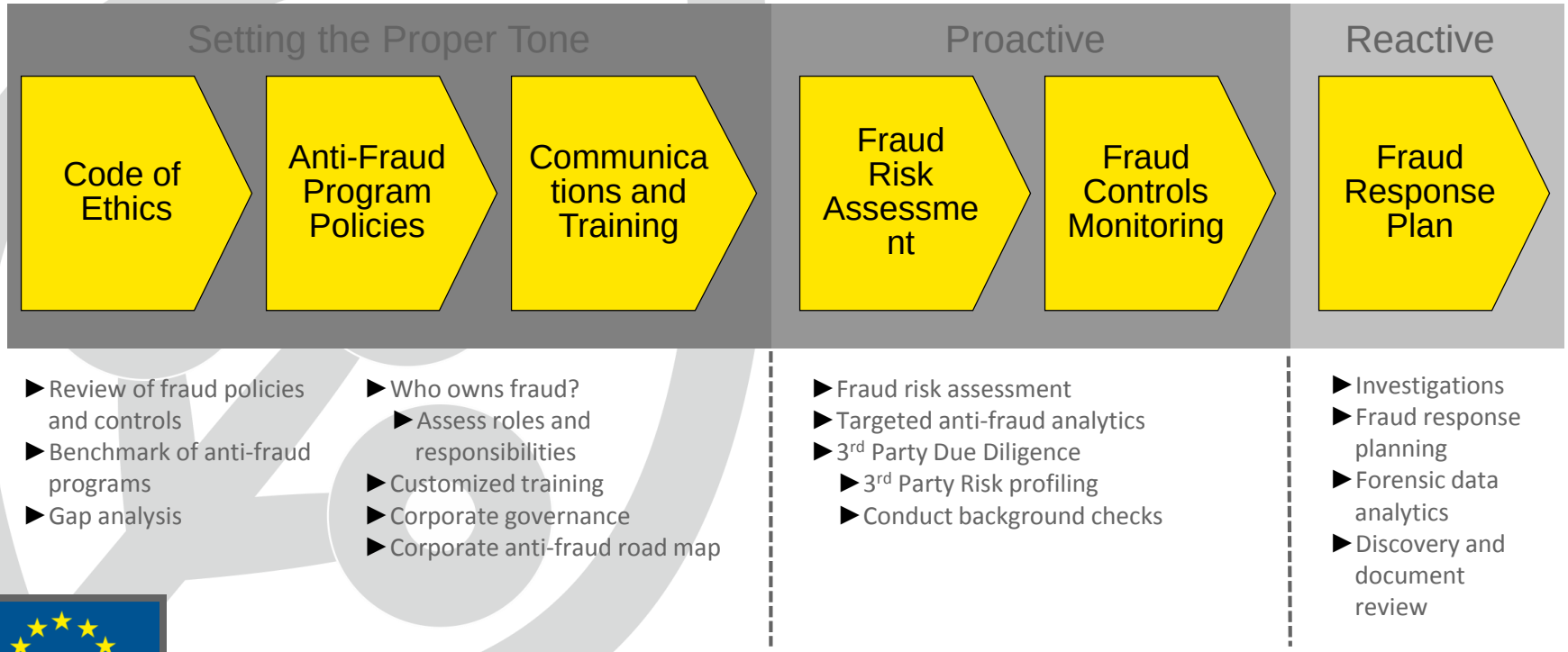
Deploy a strategy and process for implementing the new controls throughout the organization and assign responsibility for leading the overall effort.

Evaluation

Assess existing controls compared with legal and regulatory frameworks as well as leading practices.

Anti-Fraud Model
Anti-Fraud Program

- An Anti-Fraud program demonstrates that management is setting the proper "tone at the top"
- An effective Anti-Fraud program should include each of the following elements:



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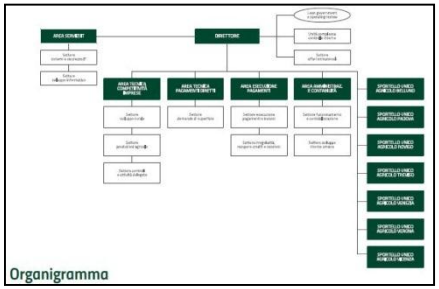
Anti-Fraud Model

Successfully managing fraud involves several key groups within PA



Adobe Acrobat Document

Director:

- Setting the proper tone
- Ensure management designs effective fraud risk management policies
- Establish mechanisms to ensure it receives accurate and timely information
- Monitor the effectiveness of the Anti-Fraud program

Anti-Fraud Program

Roles and Responsibilities

Internal Audit:

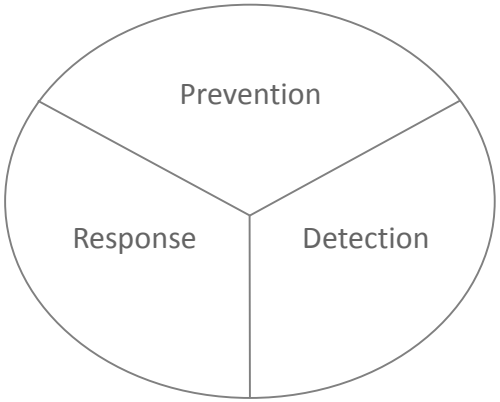
- Ensures fraud prevention and detection controls are sufficient for identified risks
- Responsible for investigating suspected instances of fraud
- Active role in the risk assessment process
- Monitors fraud risks via internal auditing
- Direct reporting channel for external audit

Area Manager:

- Responsible for design, implementation and day-to-day execution of the Anti-Fraud program
  - Setting the proper tone
  - Reactive
  - Proactive
- Reinforces setting the proper tone at the top
- Helps to create a culture of zero fraud tolerance

The Key Mechanisms of Fraud Risk Management: Prevention, Detection, Response

An effective, business-driven fraud and misconduct risk management approach is one that is focused on four objectives:



- **Prevention:** includes those controls designed to reduce/prevent the risk of fraud and misconduct from occurring in the first instance;
- **Detection:** includes those strategies/controls designed to discover as soon as possible fraud and misconduct when it occurs;
- **Response:** respond appropriately to a fraud when it is detected and take corrective action and remedy the harm caused by fraud or misconduct
- **Monitoring:** provide information that demonstrate compliance with fraud control strategy or raise alerts

Conduct a fraud risk assessment

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1 Plan
Confirm goals and schedule

2 Assess
Assess current state of fraud risks

3 Respond
Identify strengths, gaps, and recommendations

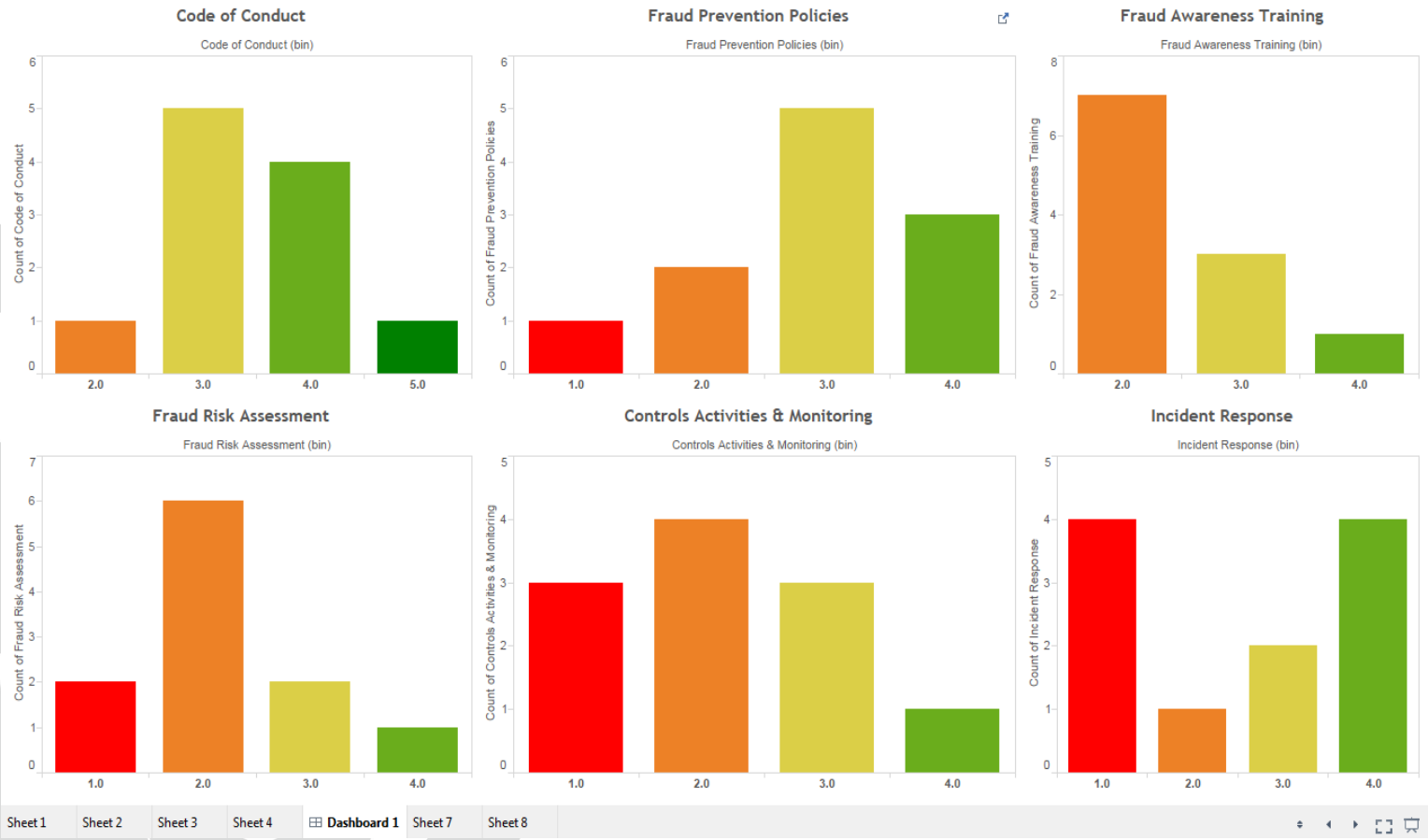
4 Report
Present findings and finalize report with recommendations

Continuous coordination between management and assessment team

Risks			Inherent Risk		
Area	Definition	Sources / Examples	Impact	Likelihood	Rating
High-level Risk Area	Detailed description of risk	The objective of this field is to populate, through discussion with PA Key Officer, a description of how this risk might materialize in the organization.	Impact Assessment as per Methodology	Likelihood Assessment as Per Methodology	Inherent Risk Rating Final

Control Effectiveness								Residual Risk
Control Descriptions / Comments	Preventive or Detective?	Manual / Automated / Partially Automated	Internal Audit Findings	3rd Party Assessments	Design Effectiveness Rating	Operating Effectiveness Rating	Overall Control Effectiveness Rating	Rating
Identify each control to be assessed against this risk. Evaluate each control.	Describe the nature of the control, and whether it is preventive or detective.	Describe the nature of process automation.	Identify any relevant open internal audit findings.	Identify the results of any 3rd Party Assessments.	Conclude on control design effectiveness.	Conclude on control operating effectiveness.	Aggregate assessment of control effectiveness considering both design and operating effectiveness.	Residual Risk, after considering the inherent rating of the risk and the results of controls' effectiveness.

The Fraud Risk Management Maturity as indicated by OPs



Why Forensic Data Analytics

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Data Analytics (DA) is the science that deals with examining the data (structured and rough) in order to draw conclusions on such information.

Data Analytics is used in large companies and organizations in order to support the management in identifying the best business decisions.

Data Analytics Object

- Cause and Effect
- Identify specific problem
- Improve future actions

Why Fraud Data Analytics

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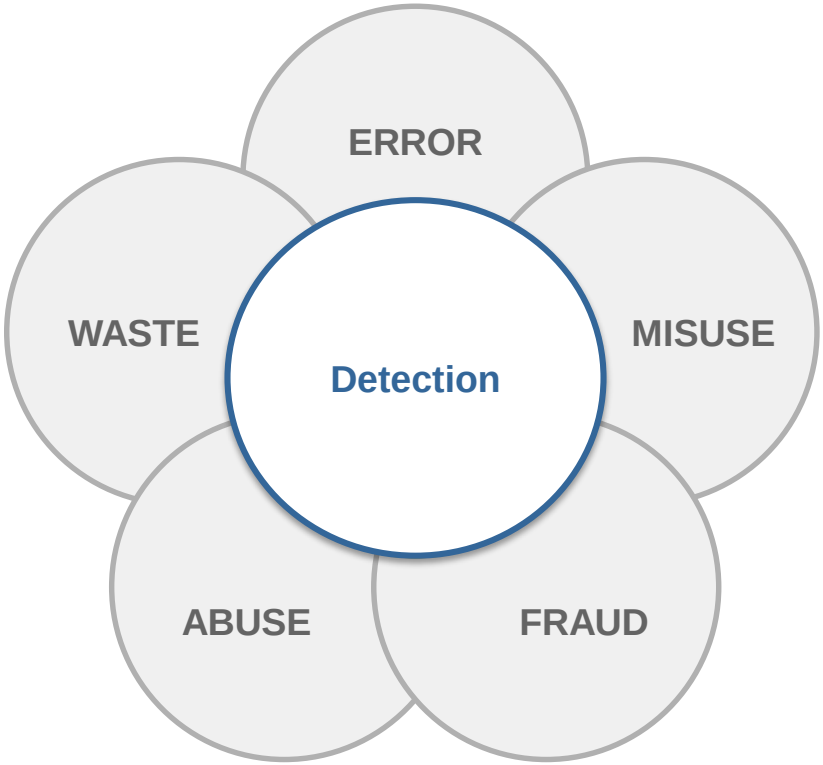
- Anti fraud control through inspection of 100% of transactions
- Automating the analysis of forensic auditors and fraud examiners
- Retrospective and/or real time
- Independently validate compliance with company code of conduct
- Measures gap between policy and expectation vs. what really happens and report on control effectiveness
- Detect risks as they happen - when they are less costly and less complex to prove, correct and remediate



Data Analytics tools used in organization

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		Global results								
	Italy	Total	Transportation	Consumer products	Manufacturing	Financial services	Life sciences	Mining	Oil and gas	Technology, communications and entertainment
	38	422	28	85	30	100	47	23	88	21
Spreadsheet tools such as Microsoft Excel	39%	65%	75%	79%	77%	55%	55%	57%	63%	62%
Database tools such as Microsoft Access or Microsoft SQL Server	26%	43%	39%	53%	37%	44%	43%	13%	42%	57%
Forensic analytics software (ACL, IDEA)	11%	26%	25%	21%	27%	24%	36%	26%	27%	24%
Statistical analysis and data mining packages	11%	11%	0%	11%	10%	14%	15%	4%	13%	14%
Continuous monitoring tools, which may include governance risk and compliance tools	24%	29%	25%	26%	27%	26%	36%	35%	35%	19%
Visualization and reporting tools	8%	12%	18%	16%	7%	11%	13%	4%	10%	10%
Big data technologies	0%	2%	4%	1%	0%	3%	4%	0%	2%	0%
Text analytics tools or keyword searching	24%	26%	14%	33%	37%	21%	28%	22%	25%	24%
Social media/web monitoring tools	16%	21%	18%	25%	23%	23%	21%	4%	17%	24%
Voice searching and analysis	0%	2%	0%	2%	0%	3%	4%	0%	1%	5%

The importance of Rules and Alerts and False Positive

1. Reduce fraud-related financial losses with earlier detection
2. Flexible platform allowing to support multiple fraud scenarios
3. Increased security of transactions in key business processes
4. Reduced workload for fraud investigation teams (less false positives)
5. Better prevention and deterrence of fraud attempts
6. Reduced fraud risk on a long term basis

Data Mining - Overview

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Data Requirements

Data collection

Transformation aggregations

Analysis

Presentation of results

Decision

Extracting **information** from **data**, often also called data analysis, is an important task. Statistical approaches, which use methods from probability theory and numerical analysis, are well-founded but difficult to implement: the development of a statistical data analysis program for any given application is time-consuming and re-quires knowledge and experience in several areas.

Information Quality involves all steps:

- Data Requirements
- Data Collection
- Transformations & Aggregations
- Actuarial Analysis
- Presentation of Results

To improve Final Step:

- Making Decisions

Relational Databases

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Relational databases are category of databases (actually the most common at the moment) in which the data are stored in **tables**, originally called relations.

- A table is a collection of related data **entries** and it consists of **columns** and **rows**.
- A **database** contains one or more tables, and each table contains **rows** (**records**) of data

ID	FIRST_NAME	LAST_NAME	CITY	COUNTRY	Height
1	Albert	Lucas	London	England	184
2	Beatrice	Monroe	New York	USA	171
3	Charles	Jones	New York	USA	176
4	Diane	Mc Gregor	New York	USA	165

For instance, the table above contains **4 records**, each one of those having **6 fields**.

In order to interact with a relational database systems, that is to insert and retrieve data, we have to use a specific programming language. To this purpose, most of databases uses **SQL** (Standard Query Language).

SQL provides the syntax to **create**, **retrieve**, **update** or **delete** a piece of information

Databases are specifically designed for dealing with large amounts of data

- They use scripting languages specific for data manipulation
- They provide features for mission critical aspects such as security, efficiency, reliability, fault tolerance, data consistency, backup, etc.

However, most of business applications use a database system and the use of databases is the key for data analytics. Nevertheless, when the amount of information grows, using spreadsheets becomes particularly difficult, or even unfeasible.

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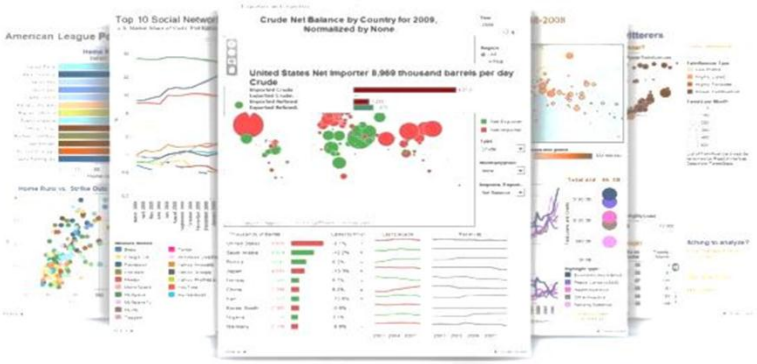
Dashboarding

Best practices for dashboard building

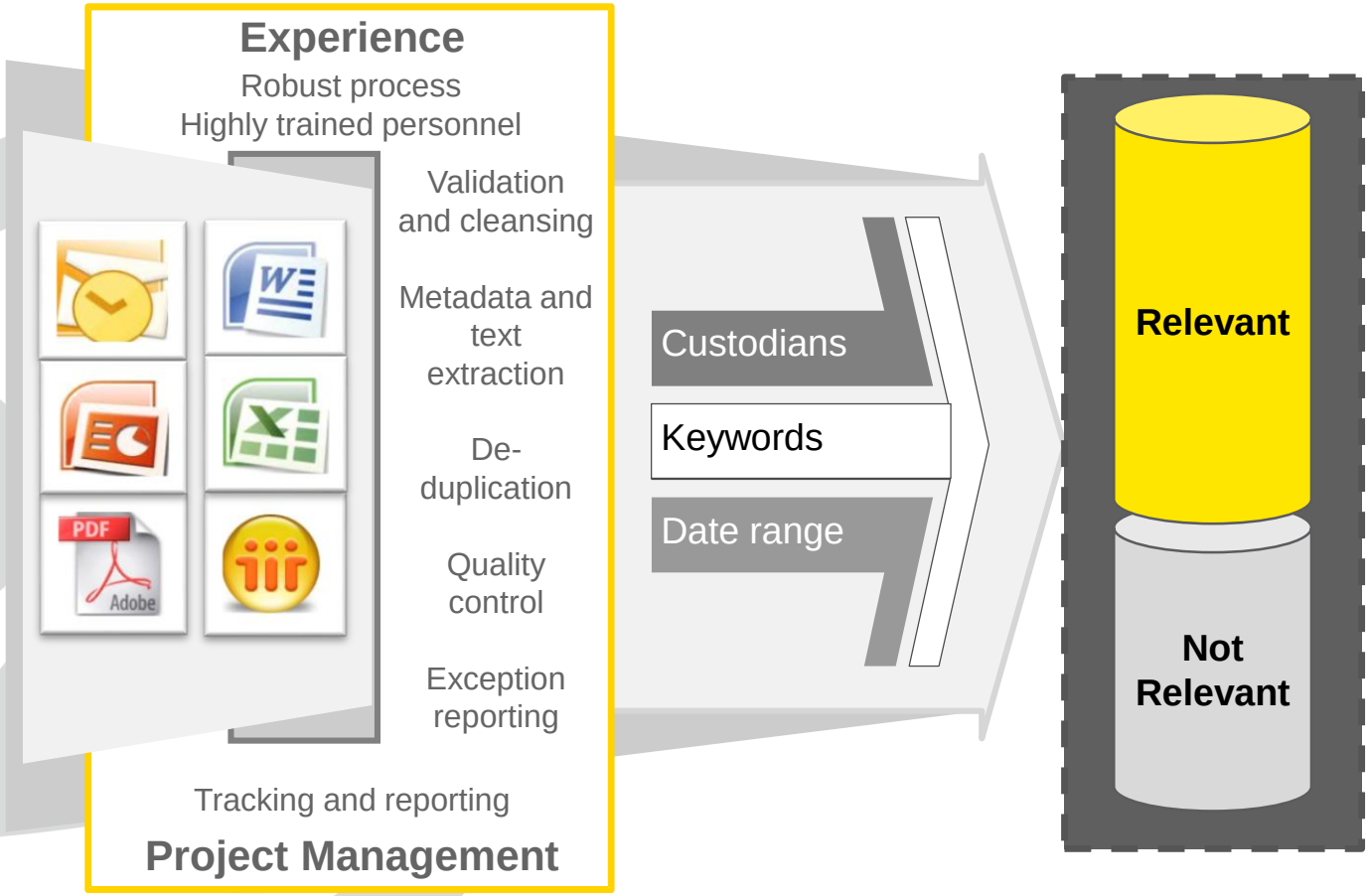
After you have analyzed some data and determined what information you need to share, adhering to these principles will help you create better dashboard designs:

- Size the dashboard to fit in the worst-case available space.
- Employ 4-pane dashboard designs.
- Use Actions to filter instead of Quick Filters.
- Build cascading dashboard designs to improve load speed.
- Limit the use of color to one primary color scheme.
- Use small instructions near the work make navigation obvious.
- Filter information presented in crosstabs to provide relevant details-on-demand.
- Remove all non-data link.
- Avoid one size fits all dashboards.



eDiscovery

Electronic Discovery: the process of identifying, managing, preserving, processing, analyzing, reviewing producing and presenting of electronically stored information, usually in the context of an investigation or litigation.



Next frontier – Link Analysis

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Fraud Data Analytics

eDiscovery

Output

Output

Link Analisys

- Analysis of the relationships between the identified findings and reconstruction of dependencies.
- Data Sources: anomalous transactions , relevant documents