



Session 11: Introduction to Risk Register, Process and Treatment using Data Analytics

Regional Workshop on Cross-border Digital Trade for CAREC Countries

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12-14 November 2024

Seoul, South Korea

Risk Management Key Strategies

Map	Context is established, and risks related to the context are enumerated
Measure	Enumerated risks are analyzed, quantified, or tracked where possible.
Manage	Risks are prioritized, and either avoided, mitigated, shared, transferred, or accepted based on measured severity.
Govern	Appropriate organizational measures, set of policies, processes, and operating procedures, and specification of roles and responsibilities are in place.

SOURCE: MANAGING RISK FOR SAFE AND EFFICIENT TRADE – ITC AND UNECE, AUGUST 2022

Strategy for Inbound Shipments

Applying	Applying formal and standardized methodologies to manage non-compliance risk in border
Strengthening	Strengthening the role of import compliance procedures in market surveillance and enforcement systems run by regulatory authorities responsible for product compliance
Integrating	Integrating import compliance processes applied at the border of respective regulatory systems to ensure that these processes support all regulatory goals and respective Sustainability Development Goals (SDGs)
Ensuring	Ensuring efficient integration of risk management processes of all regulatory agencies involved in border control; when appropriate
Consolidating	Consolidating risk management in border control with other trade facilitation tools, such as the single window

SOURCE: MANAGING RISK FOR SAFE AND EFFICIENT TRADE – ITC AND UNECE, AUGUST 2022

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What is a Dynamic Risk Management?



Provides real-time updates on the following incidents:

- Strategic goods, regulated items
- Maritime crimes, weapons of mass destruction



Predictive information enables planning ahead to:

- Mitigate and avoid potential risk
- Support risk targeting and profiling activities



Helps acquire results

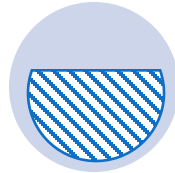
- Pattern Recognition
- Trending
- Pinpointing red flags

Enabling Proper Risk Management



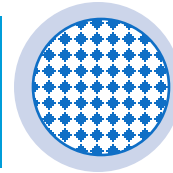
Predictive

Close to real-time synchronization of incidents database in performing targeting and profiling activities



Effective Mitigation

Enables key decision makers to see patterns and set dynamic strategies and mitigate potential risk



Optimal Result

Key decision makers can minimize risk and achieve desired outcome

Ideal Organizational Structure



Strategic Assessment Unit

- Conducts risk identification, control system, its strength and weaknesses, likelihood of occurrence of risk, its category, and the risk matrix
- Determines the potential impact to be able to setup proper risk evaluation and prioritization



Research and Analysis Unit

- Responsible for profiling and targeting of actual shipments and the creation of Selectivity Lists based on specific risk category using scoring system generated from the consolidated data and reports of various offices
- The scoring system includes all the identified risk indicators and other threats



Operational Risk Assessment Unit

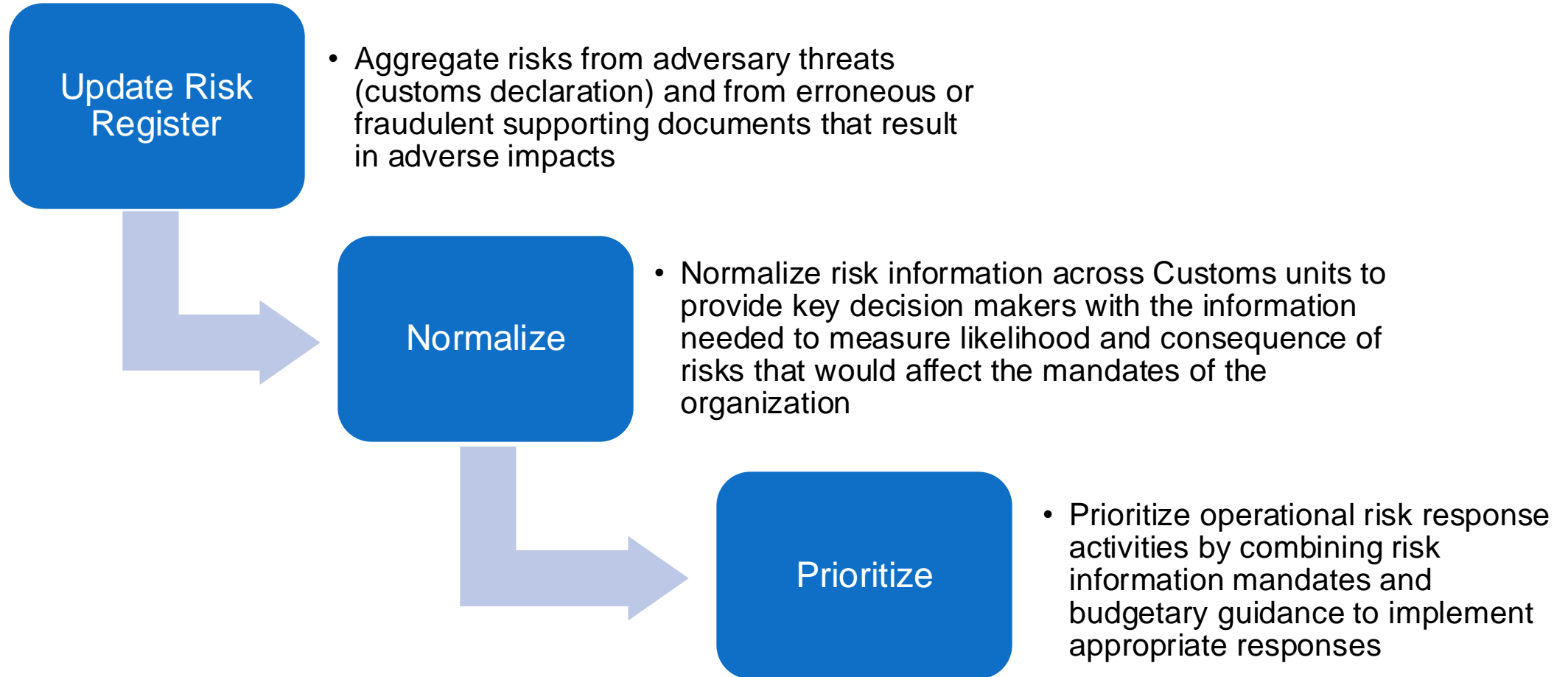
- Responsible for the creation, monitoring and evaluation of set criteria and parameters including systems behaviors affecting the selectivity
- In charge of updating the risk profiles
- Coordinates closely with the Enforcement Unit

Risk Register Template

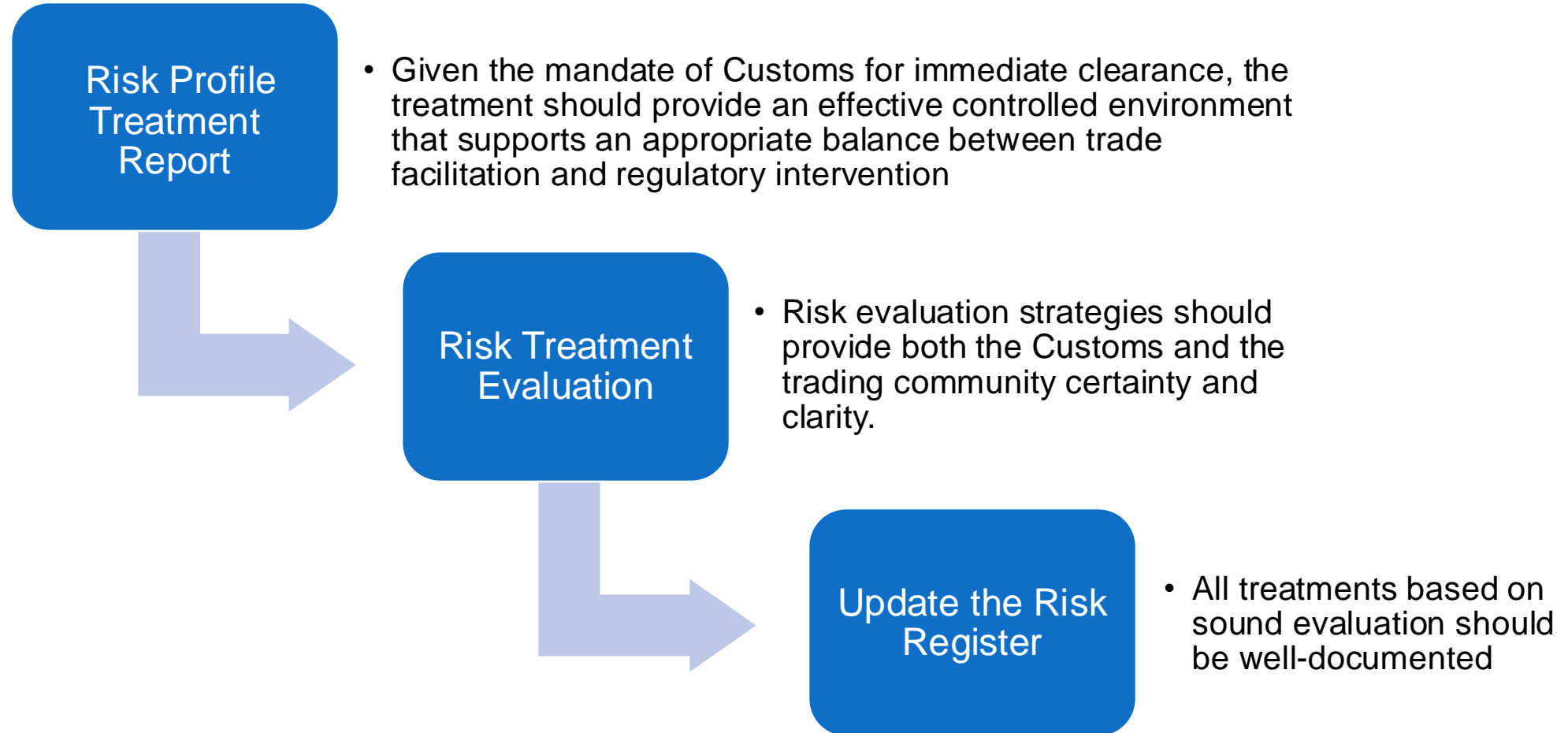
Register Element	Description
ID (Risk Identifier)	A sequential numeric identifier for referring to a risk in the risk database
Priority	An indicator of the criticality of this entry in the database, either expressed in sequence as '1' is the highest or in reference to a given scale (high, moderate, low)
Description	Brief explanation of the risk
Category	Risk categorization is helpful in executing aggregation procedure
Likelihood	Estimation of the probability, before any risk response. This could be the first iteration of the risk cycle
Impact	Analysis of the potential benefits or consequences that might result from this scenario if no additional response is provided
Exposure Rating	A calculation of the probability of risk exposure based on the likelihood estimate and the determined benefits or consequences of the risk. Exposure is the combination of likelihood and impact. Formula used is usually $\text{Exposure} = (2(\text{Likelihood}) + \text{Impact}) / 3$
Response Cost	Estimated cost of applying the risk response
Risk Response Description	A brief description of the risk response. e.g., develop an application in capturing unstructured data from trading partners, then process this as inputs to data analytics using data warehousing system
Owner	Staff or official responsible and accountable for ensuring that the risk is managed well
Status	A data element for tracking the current condition of the risk and any next activities



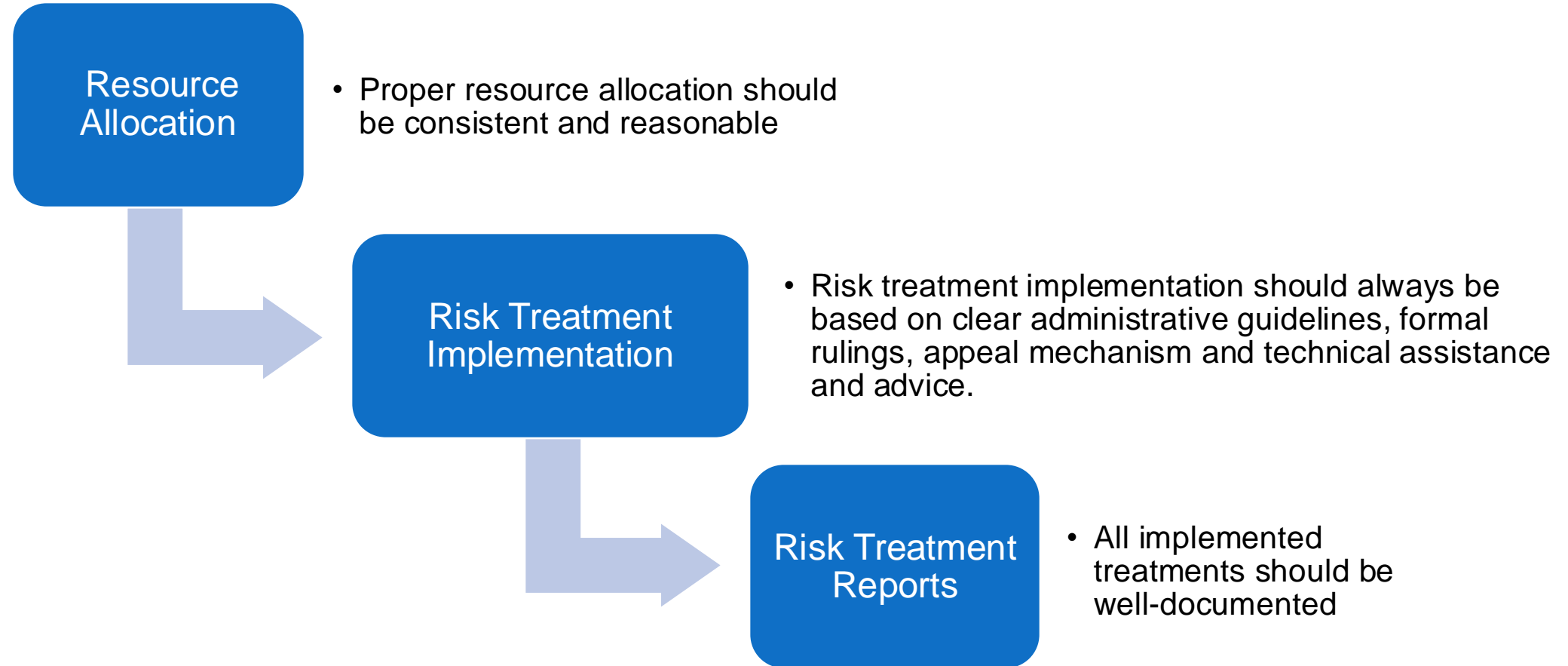
Risk Register Process for Operational RA Unit



Risk Register Process for Research & Analysis Unit



Risk Register Process for Strategic Assessment Unit



Proactive Approach

Register Element	Description
Cultural Risk Awareness	Encourage risk specialists and frontline operations officers to look for cargo clearance issues before they become significant
Risk Response Training	Train risk specialists on risk appetite, data analytics, dynamic targeting and profiling and review selected risk responses
Risk Management Performance	Discuss the impact of implemented risks on every Customs front line staff and designated BRA officials why effective management of risks is crucial to informed decision making
Risk Response Preparedness	Conduct exercises to provide practical and meaningful experience in recognizing, reposting, and responding to cargo clearance risk scenarios
Risk Management Governance	Remind risk specialists to comply with Customs rules, policies, and procedures that are established to help improve risk awareness and response
Risk Transparency	Enable an environment where key officials involved in risk management may openly and proactively report potential risk situations without fear or reprisal

Sample Business Case

It was observed that a trader is purchasing goods in bulk from a manufacturer in Country A. He files for import declaration below the de minimis value to avail of the duty-free importation (category 2) on a regular basis.

- Identify the risk description, cite the risk area and the risk profiles that would be triggered
- What is the reasonable treatment?
- How to fill up the risk register?

Reasonable Treatment

What is the reasonable treatment?

- *Review of historical data, similar shipments for price comparison, link analysis*
- *Update of selectivity parameters*
- *Review and/or revise policies on de minimis*
- *Subject to audit*

Business Case Risk Register

Register Element	Description
ID (Risk Identifier)	2024-1007-001
Priority	Medium
Description	It was observed that a trader is purchasing goods in bulk from a manufacturer in Country A. He files for import declaration below the de minimis value to avail of the duty-free importation (category 2) on a regular basis.
Category	Medium
Likelihood	60%
Impact	50%
Exposure Rating	56.67%
Response Cost	Medium
Risk Response Description / Impact to Selectivity Profile	It was observed that a trader is purchasing goods in bulk from a manufacturer in Country A. He files for import declaration below the de minimis value to avail of the duty-free importation (category 2) on a regular basis.
Create New Risk Profile	Value + Weight + Type of Importer/ Entity + Description + Importers + Exporter + Country of Origin + Frequency + Ports of Unloading + Route *this are also the data needed for effective profiling
Owner	Assessment, Risk Management Office, Human Resources, Intelligence Group
Status	On-going / Continuous

Data Analytics – Data Definition

*Data analytics (DA) is the **process of examining** data sets to draw conclusions about the **information they contain**, increasingly with the aid of specialized systems and software.*

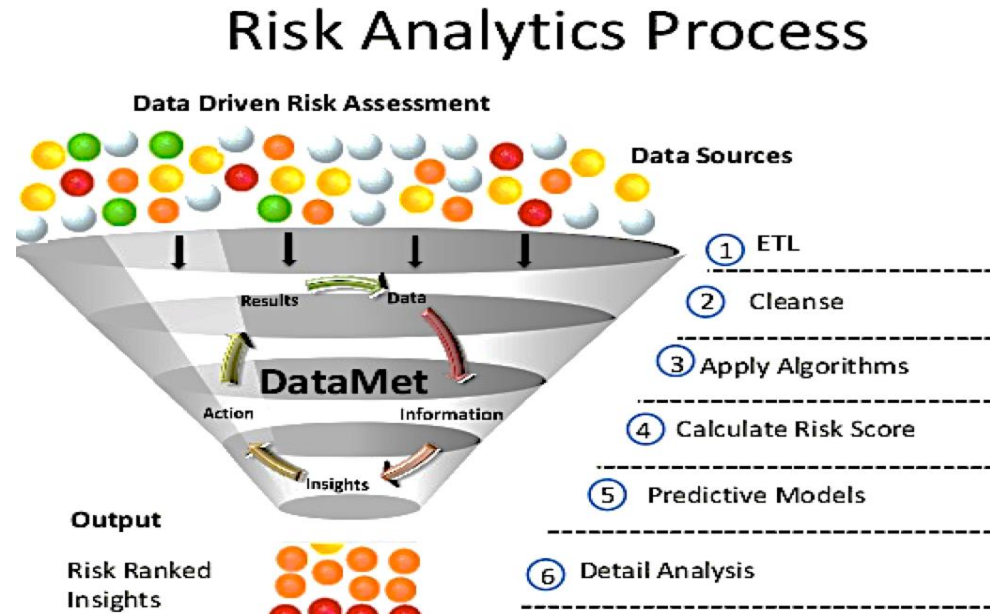
Search Data Management - 2018

*Data Analytics involves applying an **algorithmic or mechanical process to derive insights**. For example, running through data sets to look for meaningful correlations between each other.*

Simplilearn - 2018



Risk Analytics Process



Due to **technological advances** and **general transparency**, the data collected is now more important for risk management than it has ever been.

Risk analytics offers a means of **transforming** these **data assets** into **actionable insights** that can be used to significantly impact performance

Protecht Africa – 2015



Risk analytics provides **intelligence** to management from data and information to make decisions on uncertainties faced by the organization

Protecht Africa – 2015

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Data Analytics – Strategic Steps

Step I – the Initial State

- What is your concern?
- How good do you know your traders and economic operators?
- What data is currently available ?
- How is its quality and relevance?
- Have you tried to put them in one screen?
- How are decisions currently made?

Step II – the Base Line

- What key data should be collected?
- How will the data be collected?
- What are the sources of data?
- How is the availability of data?
- What system will be used to collect and store the data?
- What is the quality of the data?

Step 1:
Define the
questions to
investigate

Step 3:
Clean, prepare
& combine
the data

Step 5:
Understand
& consider
the insights



Step 2:
Ingest & store
the available data

Step 4:
Perform
analyses &
build models

Step 6:
Take
actions &
decisions

Step IV – Challenge yourself

- Can you see something that others could not?
- What's next?

Step III – Data to Information

- How will you turn the data into information?
- How can the information be accessed?

Risk Profiling Exercise

Step I – the Initial State

- What is your concern?
Importation with COO
- How good do you know your Stakeholder?
Single Stakeholder
- What data is currently available ?
Import Declaration, e-COO, Advance Export Declaration
How is its quality and relevance?
Data Cleansing
- Have you tried to put them in one screen?
Dashboard
- How are decisions currently made?
Electronic data support



Step II – Set up the Base Line

- What key data should be collected?
e-COO utilization
- How will the data be collected?
Real Time
- What are the sources of data?
Data Warehousing and NSW database
- How is the availability of data?
Daily Basis
- What system will be used to collect and store the data?
NSW database
- What is the quality of the data?
Data Cleansing



Step III – Data to Information

- How will you turn the data into information?
ETL Tools, Data Mart, Dashboard, Analytics Tool
- How can the information be accessed?
Executive Information System, Command Center



Step IV – Challenge your Self

- Can you see something that others couldn't?
Data Correlation, Trend, Anomaly, etc.
- What's next?
Action Plan



Risk Profiling Exercise

Basic framework to apply data analytics to assess risk:

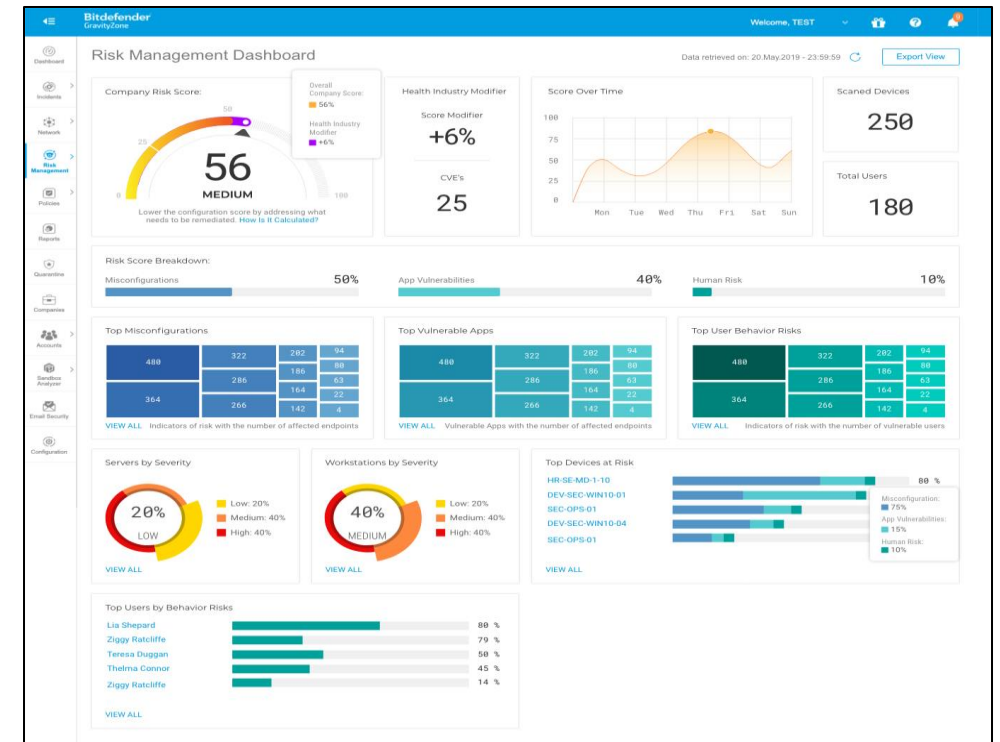
- Build a profile of potential risks
- Test data for possible risk indicators
- Improve the process by implementing continuous analysis
- Review results
- Expand the scope and repeat
- Report

ACL - 2018

Type of analyses is performed:

- Completeness Analysis
- Uniqueness Analysis
- Values Distribution Analysis
- Range Analysis
- Pattern Analysis

Data Source Consulting - 2018



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Key Takeaways

- There is **no fixed way** of establishing Risk Profiles
- Risk Profile must be **flexible** to achieve the purpose agreed
- Countries may have **different domestic purpose** with various levels of details
- Risk Profile is **continuous review** and should reflect newly identified risks

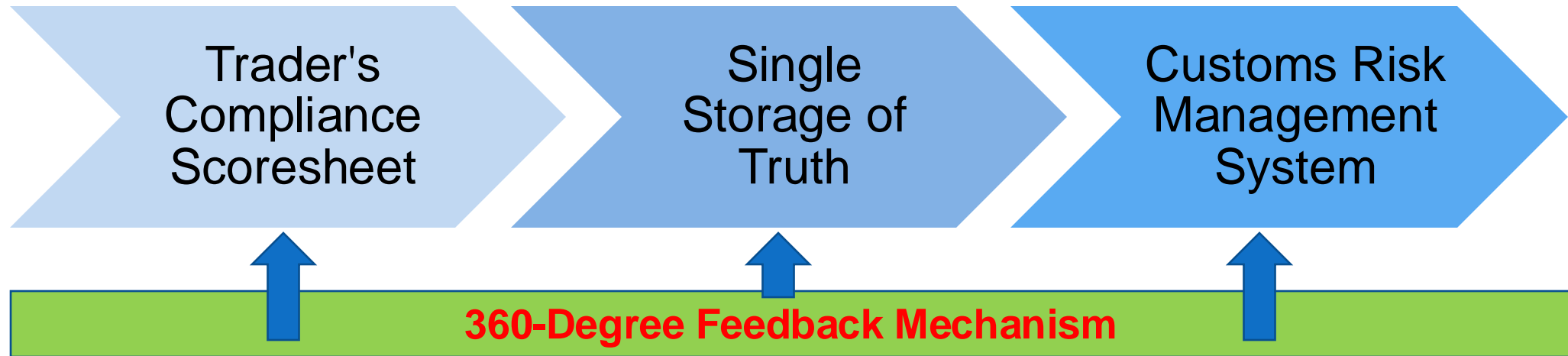
The Global Facilitation Partnership for Transportation and Trade (GFP) – 2003
MAFF, Japan

- Determine the **key risk questions** need to be answered
- Establish the **data source** requirements
- Digitize data within a **single data repository**
- Cleansing data to maintain **data accuracy**
- Develop **analytics tool** and **dashboard**
- **Command Centre with Dashboard** will enable you to make **decisions in a snapshot using analytical tools**

Protecht Africa – 2015



Trader's Compliance Scoresheet Staging



Level	Indicators	Remarks
1	Risk management not applied	Initiation needed
2	<ul style="list-style-type: none"> Awareness on board Internal consolidation of risk parameters 	Implementation preparation activities such benchmarking, focused group discussion, and constructing risk management formula.
3	<ul style="list-style-type: none"> Distinct treatment based on trader risk profile Ready to share risk profile data 	Legal framework from some OGAs available to regulate and manage the risk management implementation
4	ISO 3100 <i>Compliance</i>	Customs has fully implemented the WCO risk management principles

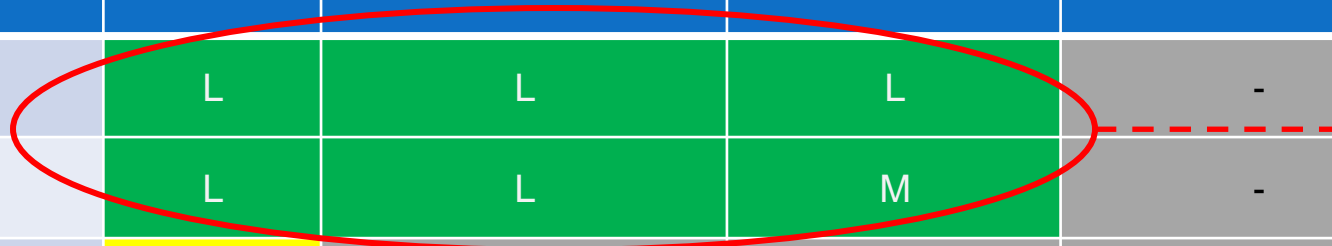
Trader's Compliance Matrix

Source: Customs database

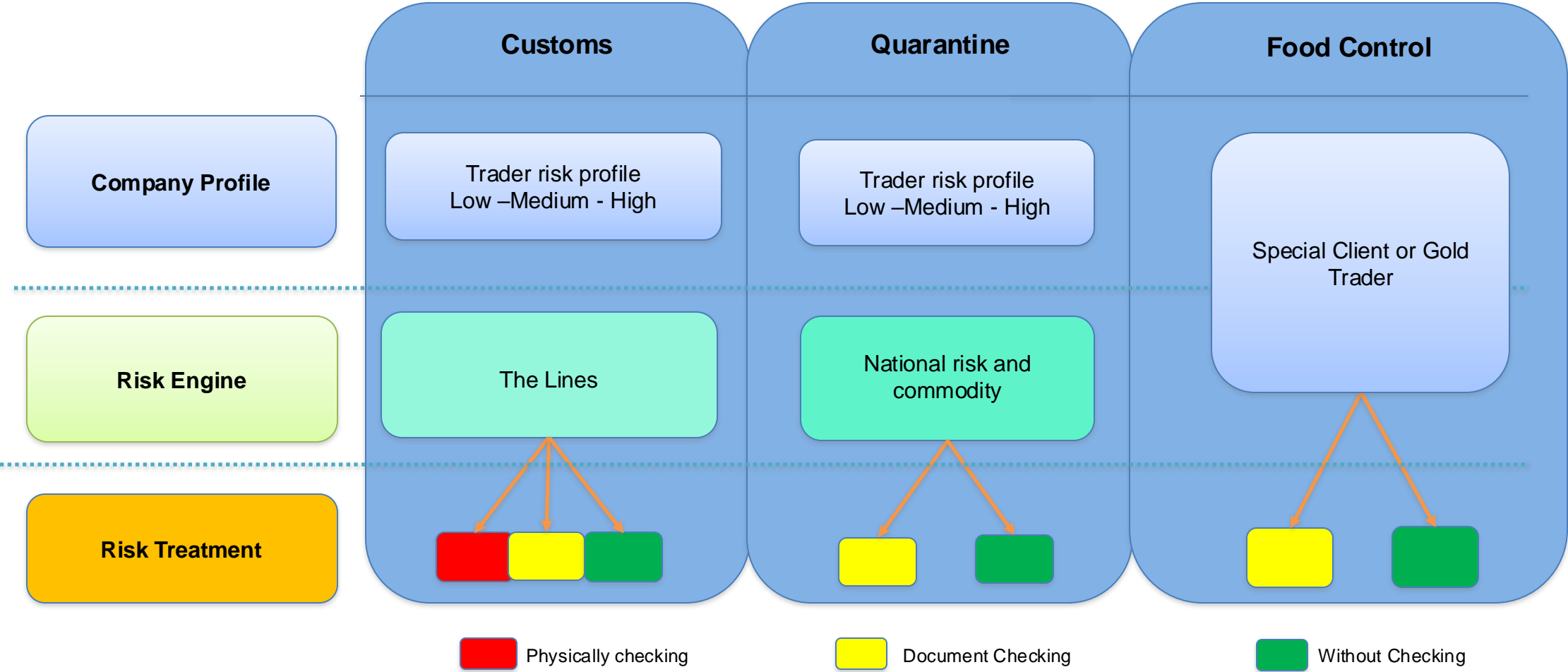
- Owner Profile
- WCO Sanction List
- Post-Entry Audit Group List
- Taxpayer status
- etc.

Whitelists are importers with the same risk profile resulted by each government agency's risk management.

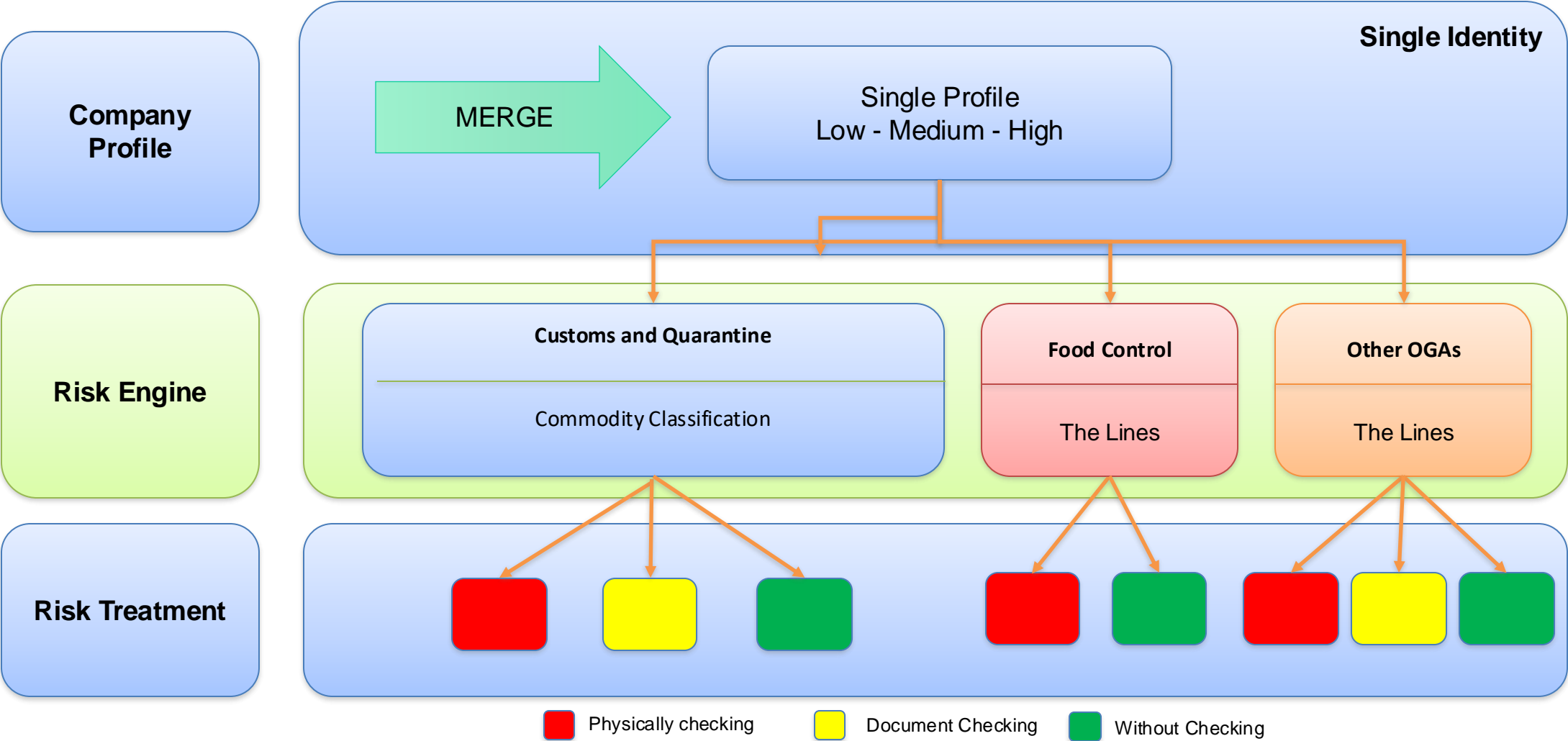
No	Importer	Custom	Agriculture Quarantine	Food Control	Fish Quarantine	Ministry of Trade
1.	Trader A	L	L	L	-	-
2.	Trader B	L	L	M	-	-
3.	Trader C	M	M	-	-	-
....
n.	Trader Z	H	-	-



Existing Circumstances “as-is”



Integrated Risk Management with OGAs



Dynamic

Ideal for Integrated Risk Management



Conclusions

- ❑ The key to a dynamic risk management system is the access to data that allows the application of risk principles. Some information that PGAs require for risk profiling are not available from the customs declaration.
- ❑ In some cases, though, the information might already be available with PGAs, but this database remains in a silo. Thus, its systemic use and application remains discretionary rather than being part of a systematic process.
- ❑ Fewer well-researched and well-defined criteria that achieve results are more desirable than large pool of criteria that generate examinations but do not produce results.

Conclusions

- ❑ Focus should not only be on automation. It can cause Customs officials to rely only on the information and communications technology aspects of the effort and give less attention to the necessary operational and organizational changes – simplification and rationalization of procedures
- ❑ Just as automation of ineffective procedures is counter-productive, so is implementation of cargo selectivity without developing the necessary analytical capacity on the operational side of customs procedures
- ❑ Profile review should be done by measuring results of interventions against actual findings to see how effective the system is. It is a continuous process to optimize interventions with available resources

Towards Dynamic Risk Management

- ❑ The development and implementation of the Customs Risk Management system will be a challenge, but if implemented gradually and sustainably, it will be quite valuable for both government and traders.
- ❑ PGAs that issue or process export or import licenses, permits, certificates, declarations, etc. need to participate fully in the inter-agency sharing of risk related data to support Customs Risk Management Office
- ❑ The mandates of Customs (trade facilitation, revenue generation, and enforcement), other government agencies (consumer protection, environment protection, plant and animal health, etc.), carriers (speed and assurance of delivery), and traders (just-in-time delivery) should be addressed based on agreed workflow management and data ownership.

Leveraging the Use of Modern Technology

- ❑ Information technologies will continue to evolve and provide organizations with more and better capabilities in identifying, collecting, organizing, analyzing, and managing data. The same applies to risk data.
- ❑ With time and investment, risk technology will continue to help drive further investment and integration of control processes across organizations to allow decision makers to exploit risk analytic functionalities, as well.
- ❑ As the front-end application features become more complex, the PGAs will need to adjust its ICT staffing profiles to address the skills required of a more complex computing environment. Support for full career personnel development across the organization should be considered.



Thank you

A decorative footer graphic with a blue background. On the left, there is a colorful circular arrangement of icons representing various digital and trade concepts. On the right, there are vertical lines of varying lengths and dots, resembling a circuit board or data stream. The bottom right corner features a green and yellow abstract shape.

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