

*Temporary
co-driver*

Compliance Efficiency

4C GROUP AG

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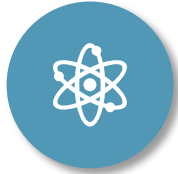
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Introduction and Overview



Introduction and Overview

Sounds familiar? – Many companies are being confronted with similar organisational and regulatory challenges



A variety of Legacy-Systems

A disperse landscape of systems,
making a precise overview difficult



Redundant Structures

Similar data and functions are
being collected in multiple
systems



High level of manual efforts

Standard processes or data
migrations must be performed
manually



Complex, dynamic regulations

Regulations are continuously
being adjusted and are built upon
each other

Introduction and Overview

Organizational framework conditions and regulatory complexity lead to inefficiencies of the Regulatory Management Operating Model

Regulation, Structural / Process Organisation

- Complex, dynamic, interrelated regulations & intensification of external audits
- Complex structures in organisation and management of large and multinational enterprises.
- Large projects and portfolios to regulatory management change projects
- Inertia of transformation processes, inefficient implementation and lack of dynamics
- Low standards in forensic procedures and investigations

Regulatory Mgmt. Framework

IT / Technological Environment

- Disperse Legacy-Systems (Banking, Compliance / AFC System)
- Often missing IT or digitalisation strategy
- Little automation: manual machining processes or multiple sub-steps
- Redundant data structures and heterogenous processes for data management
- Representation of same functions in multiple systems
- Complex IT management
- Lack of dynamism in IT change processes

Introduction and Overview

4C Approach: Increasing efficiency in regulatory management through the use of lean management methods in combination with the latest technologies

Lean Management

The classic **Lean-Management approach** focuses on creating value without creating waste. A focus on customers, highly efficient processes and an aspired perfection are paramount.

Organisations of Regulatory Management should strive for “operational efficiency” in addition to “regulatory effectiveness”

Compliance Efficiency describes the application of Lean Management principles in the area of Regulatory Management.

Specific Approaches

- _ Alignment of processes to regulators and businesses
- _ Identification of required resources with regards to regulatory activities
- _ Elimination of redundant processes, aiming at the fulfilment of regulatory requirements
- _ Changes in processes are primarily induced by regulatory requirements
- _ Striving for perfection in fulfilling regulatory requirements



Regulatory Technology (RegTech)

RegTech refers to the support of **Regulatory Management Functions** for fulfilling requirements through the usage of **newest technologies**.

Primary objectives are to relief regulatory processes – an increase of **efficiency** – and an increase of **effectiveness**.

Specific Approaches

- _ Automation potentials in the KYC process
- _ Next Gen Investigation: *using newest technologies for efficiently providing information and creation of an effective base for decision-making*
- _ Natural Language Processing / Text Mining
- _ Strategic KI: *Deriving decisions through the identification of patterns based on machine learning*

» The increase in efficiency achieved and the capacities freed up can be used to increase the effectiveness of regulatory management and to strengthen the protective shield

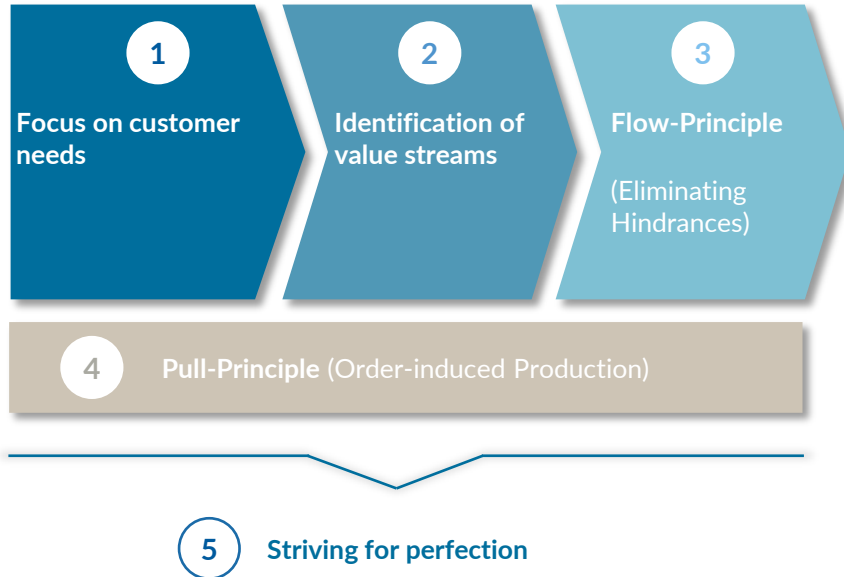
„Compliance Efficiency“



Compliance Efficiency

Five Lean Management principles are the foundation for Compliance Efficiency



Lean Management Principles



Derived Compliance Efficiency Approaches

- 1) Alignment of the Regulatory Management Organisation in accordance to regulators as well as the requirements and needs of the business units
- 2) Identification of resources and activities, necessary for complying with regulatory requirements
- 3) Continuous review of activities and processes, for compliance with its regulatory requirements while eliminating non-essential processes
- 4) Derivation and implementation of regulatory process adjustments due to changes in the regulatory framework
- 5) Implementation of defined risk tolerances as well as striving for highly efficient regulatory processes solely for the purpose of the defined objectives

Activities and examples of compliance efficiency with the 4C (high-level) approach

	1) Focus on regulators / Business Units (Stakeholders)	2) Identification of necessary resources and processes	3) Definition of processes and elimination of redundancies
Activities 	<ul style="list-style-type: none">_ Specification of the (relevant) requirements by the regulator_ Elaboration of the necessities / requirements of business units_ Definition of risk tolerances	<ul style="list-style-type: none">_ Definition of all necessary resources for complying to requirements and necessities_ Identification of necessary activities / process steps_ Evaluation of delivered value per activity and its regulatory benefit	<ul style="list-style-type: none">_ Ideal design of the individual process steps / process landscape_ Determination of responsibilities per process / reg. requirement_ Implementation of the flow principle (elimination of unnecessary activities – process efficiency)
Example New Client Adoption (NCA) 	Alignment Regulatory Management: <ul style="list-style-type: none">_ Regulator requires, among other things, compliance with regulations according to GWG_ Objective of Business areas: e.g. short NCA process_ Risk tolerance: No business with high-risk customers in specific sectors	Process steps (selection): <ul style="list-style-type: none">_ Legitimation and clarification of business purpose_ Name List Screening_ Risk classification of customers_ Definition of requirements and conditions	Design of activities (e.g.): <ul style="list-style-type: none">_ Omitting, or possibly limiting standard-background checks_ Eliminating repositories of digitally documented legitimations_ Reducing review / control activities onto a necessary minimum

Regulatory Technology



Regulatory Technology

RegTech – Regulatory Technology, derived from „FinTech“ – applies newest technological developments to support the Regulatory Management Function effectively and efficiently

Regulatory Technology (RegTech)

RegTech refers to the support of the **Regulatory Management function** in fulfilling the requirements through the use and application of the **latest technological advances**. The relief of regulatory processes – **increasing efficiencies** – and the **increase** of its **effectiveness** should be achieved.

Specific Approaches



Automation potentials in the KYC process



Next Gen Investigation



Natural Language Processing (Text Mining)



Strategic KI

Key Technologies (selection)

- _ Big Data
- _ Data Fusion | Open Source Intelligence
- _ Real Time Analytics
- _ Artificial Intelligence (AI)
 - Expert systems / Rule-based system
 - Pattern- / Anomaly-Detection
 - Adaptive learning
 - Artificial Neural Network, ANN
- _ Text Mining
- _ Robotics
- _ Automation
- _ Technologies of visualisation

Regulatory Technology

The automation of KYC process components can be a significant efficiency driver - not only for the KYC process [1/2]



Automation potentials in the KYC process:

KYC process (components) are **automated** for low and medium risk clients by dedicated **KYC function modules**.

The objective is the (almost completely) automated **execution** (or support) of the **New Client Adoption**, **Regular** and **Event Driven Reviews**, taking into account the corresponding duties of care.



Efficiency Potentials

- _ Reducing manual labour
- _ Acceleration of processing
- _ Decreased documentation efforts
- _ Decreasing sources of error and thus a decrease of subsequent processing and control mechanisms



Additional Benefits

- _ Quality assurance through machine supported data collection and processing
- _ An increase of effectivity through larger datasets
- _ Re- and further use of functions for other Reg. Mgmt. functions due to the modularly developed architecture



Possible Challenges

- _ A flexible architecture of modules and functions is crucial for responding to a dynamic environment
- _ Automated data reconciliations, data research, data consolidation, and data analysis could be a source of error
- _ Realignment of the overall quality assurance concept

Regulatory Technology

The automation of KYC process components can be a significant efficiency driver - not only for the KYC process [2/2]



Application Examples

Automated authentication and screening

Digital extraction of identification documents (ID) and automated open source screening

Changes in the ownership structure

Integration of credit agencies (regular checks), business register, etc.

Adverse media and reputation risks

Consideration of press portals, internet research, adverse media registers

Monitoring of requirements and obligations

Automated and “intelligent” monitoring of requirements and obligations as well as potential workarounds



Key Technologies*

- _ Data Fusion | Open Source Intelligence
- _ Robotics
- _ Automation

- _ Predictive pattern/anomaly detection
- _ Adaptive learning
- _ Artificial Neural Network, ANN

- _ Data Fusion | Open Source Intelligence
- _ Text Mining
- _ Predictive pattern/anomaly detection

- _ Automation
- _ Real Time Analytics
- _ Adaptive learning

*selection

Regulatory Technology

New technologies in investigation processes do not only create an efficient provision of data and information, but an effective basis for analysts in decision making [1/2]



Next Gen Investigation

The Next Gen Investigation concept considers the following core elements:

- _ Automatically **providing** and fusion of **intelligent data** (internal and external)
- _ Use of **visualisation technologies** for the representation of complex subjects and their interdependencies
- _ **AI specific investigation base**



Efficiency Potentials

- _ Reduction of heterogeneous and time-consuming manual research activities
- _ Acceleration of decision making
- _ Automated documentation reduces end-to-end investigation time



Additional Benefits

- _ Broadening and deepening the investigative base
- _ Incorporating current information by automated search inquiries (e.g. over night)
- _ Comprehensible findings as well as investigation and standardisation of documentation



Possible Challenges

- _ Development of an investigative base prepared for AI may only be possible in the medium to long term
- _ Standardised behaviour of the analysts during the investigation possible (counteraction if necessary)
- _ Possibly establishment of core resources or specialists necessary

Regulatory Technology

New technologies in investigation processes do not only create an efficient provision of data and information, but an effective basis for analysts in decision making [2/2]



Application Examples

AML Monitoring

Consolidation of internal and external intelligence data, AI detection of transaction anomalies

Special Investigations

Integration of leak sites, fusion with internal data sources, unstructured text interpretation

Standard-Background-Check / Profiling

Standardised preparation and fusion of intelligence data (forensics) for all suspects

Visual representation of network relationships

Representation of complex facts and relationships (e.g. transaction networks & behaviour)



Key Technologies*

- _ Big Data
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*selection

Regulatory Technology

Natural Language Processing supports investigations and forensic processes in the analysis of large unstructured texts [1/2]



Natural Language Processing (Text Mining)

Extraction of **information** from **unstructured texts**. Use of linguistic, statistical and mathematical methods.

Patterns of content in texts are recognized and **relationships identified**. Processing and utilisation of large amounts of text can be, for example, investigation decisions (ex-post), analysis of leak information, files or communication protocols.



Efficiency Potentials

- _ Decrease of processing times for investigation information
- _ Extracted information and findings can be used in multiple investigation processes (synergy potential)



Additional Benefits

- _ Increased effectiveness by including a larger information base for the investigation
- _ Re- and further use of functions for other Reg. Mgmt. processes



Possible Challenges

- _ Possibly establishment of core resources or specialists necessary
- _ Standardised behaviour of analysts during investigations possible - Text Mining supports investigative assessments and decisions, does not take the final decision of the analysts

Regulatory Technology

Natural Language Processing supports investigations and forensic processes in the analysis of large unstructured texts [2/2]



Application Examples

Information supply and disclosure

(Pre-) analysis of large amounts of data and records as well as the evaluation and monitoring of internal communication (e.g. insider trading and market manipulation)

Investigation

Identification of patterns, relationships and structures of e.g. leak information

Forensics

Analysis of damage records and documentation of investigation decisions



Key Technologies*

_ Technologies used in relation to text mining:

- *Big Data*
- *Data Fusion | Open Source Intelligence*
- *Robotics*
- *Automation*
- *Real Time Analytics*

_ Findings from text mining methods are used as input for the further processing or use of e.g. AI methods

*selection

Regulatory Technology

The use of strategic AI can sustainably improve the effectiveness of AFC and has the potential to increase efficiency



Increased effectiveness through strategic AI

Strategic AI considers the comprehensive use of AI methods in Reg. Mgmt. Organisations.

Based upon **rule-based expert systems** (machine learning), especially **patterns** and **anomalies** can be identified and support the derivation of **decisions**.



Efficiency Potentials

- _ Elimination of extensive manual transaction monitoring
- _ Independent recognition, registration and documentation of relationships between companies and organisations
- _ Rule-based decisions of self-learning systems reduce the number of alerts and transactions which would have to be checked manually



Additional Benefits

- _ Predictive analytics approaches of AI for early detection of financial crime structures
- _ Identification of networks and relationships
- _ Transactions which have been out of scope for audits due to their large amounts are processed through AI.
- _ AI identifies previously unrecognised patterns associated with money laundering

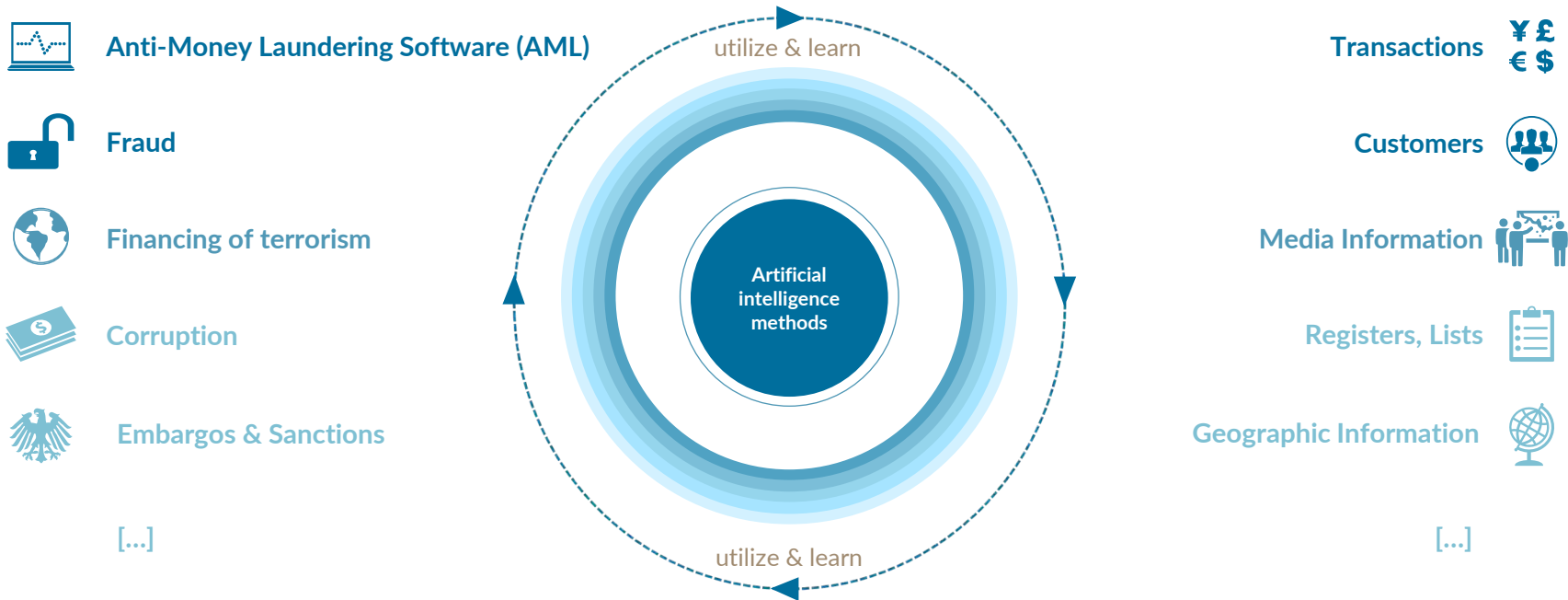


Possible Challenges

- _ AI gives an estimation of conspicuous circumstances, but the decision and responsibility about next steps remains with the employee
- _ The decision of the AI must remain comprehensible and documented
- _ Possibly a longer phase of establishment necessary (depending on the area of application)

Regulatory Technology

AI becomes a strategic approach when a cross-functional application is developed and deployed - example: anti-money laundering software (AML)



Your point of contact

For any further question, we are gladly at your disposal.



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