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ANALYSIS OF PRESENTATIONS ON ROI AND THE DIKW MODEL

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Abstract

This study is devoted to improving the means of monitoring the state of the organization. As a mechanism for finding such means, presentations related to measuring the effectiveness of the organization in time intervals of different durations are used. The presentations explore innovative approaches to calculating Return on Investment (ROI) and managing emergent properties in both organizational and software systems. A particular focus is placed on integrating the DIKW (Data, Information, Knowledge, Wisdom) model into ROI analysis. The presentations stress the need for addressing inconsistencies in current models, leveraging commoditization effects, and ensuring the independence of data and processes. By utilizing advanced Goal-Setting System models, organizations can more effectively align with market demands, improving both system reliability and decision-making processes.

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Keywords: profitability, conflicts, information, processing, liquidity, framework, diagnostics

1 Introduction

This study uses an approach that allows the DIKW model to be used as a mechanism for expanding the set of indicators involved in the ROI system [1, 2]. This is a system used to expand the standard model for measuring the return on investment indicator. In essence, the transition from profitability research to liquidity analysis is carried out.

During the analysis of the processes of collecting and processing information on the use of ROI, it was established that the key contradiction identified is the inconsistency in parameter ranges that influence ROI calculations and the absence of standardized approaches in current methodologies [3].

Another significant contradiction is the internal friction within teams that arises when changes emphasize best practices without taking into account the emergent properties and knowledge flow within systems, as outlined by the DIKW model.

The core problem highlighted is the difficulty of improving ROI or software processes without specialized tools that can identify and resolve systemic inconsistencies and organizational conflicts. This challenge is amplified when the DIKW model is not effectively integrated into the decision-making and ROI evaluation processes.

According to the fourth element of the DIKW model, it is necessary to develop an algorithm for setting a goal in the context of liquidity. In this regard, the research problem is formulated: "It is impossible to effectively use the ROI indicator as a measurement of efficiency in the absence of means to justify it from the point of view of liquidity standards."

The object of the study is the development of methodologies and systems that can accurately calculate ROI while also testing and preserving emergent properties. This involves applying the DIKW model to enhance understanding and decision-making, ensuring that the system evolves in alignment with both immediate and long-term goals.

The targeting technology is used as the initial methodology, with the help of which the collection, processing, analysis and diagnostics of business information on ROI as a liquidity indicator is organized. Such technology requires special routing and, therefore, the roadmap mechanism was chosen.

Table 1 shows the obtained correspondence of the phases of the roadmap mechanism with the elements of the DIKW model.

The subject of the research involves the system of measurement standards and procedures used to evaluate ROI and emergent property compliance. This includes frameworks for assessing the stages of data transformation into information, knowledge, and wisdom, and how these stages can impact the ROI calculations and overall system outcomes.

Thus, within the framework of a single device that combines the functions of the roadmap and DIKW mechanisms, the harmonization of norms and measures is ensured, allowing the measurement of the effectiveness of the system throughout the entire life cycle of the organization.

2 Methodological Framework: The DIKW-ROI Integration Model

The primary idea is to design robust mechanisms that ensure the effective calculation of ROI while preserving emergent properties in organizational and software systems. A key moment is to integrate the DIKW model to enhance decision-making processes and long-term organizational success [4,5]

To summarize, the purpose of this study is to develop a procedure that ensures the measurement of the organization's effectiveness within the framework of an effective diagnostic device.

It should be noted that the given goal was formulated due to the synchronization of the DIKW model with the phases of the roadmap

application mechanism. During the synchronization, it was established that each phase of the mechanism can be described in terms of the goal-setting technology in the direction from the goal to the vision. In our case, as the evaluation interval increases, the transition in the opposite direction is carried out, namely: Goal, Strategy, Mission, Vision.

Table 1

ROI-based diagnostic device for assessing the state of an organization

Roadmap Mechanism			**Interval and Key ROI Indicator**	**Purposefulness System**		
Phase	**Function**	**Contents of the key parameter**		**Element**	**Function**	**Design ation**
Phase 1	Developing requirements and forming key indicators	Will there be enough funds to pay the bills?	Current Time ROI	Data	Collection of data on violations and failures	D
Phase 2	Formulation of a clear form for decision makers	How does the working capital cycle work?	Calendar year CTR	Informati on	Processing informatio n related to payment delays	I
Phase 3	A conclusion is formed about the organization of investments	Is the capital structure optimal?	Medium term (up to three years) ROE	Knowled ge	Financial leverage analysis and discount rate control	K
Phase 4	Deployment of a system to ensure the development of the organization	How are key people in an organization rewarded?	Long-term perspectiv e (over three years) SGR	Wisdom	Diagnosis of growth potential taking into account the assessment of capitalized profits	W

This approach proposes a four-tiered integration model that aligns each DIKW level with a corresponding goal-setting, technological and strategic function in ROI analysis (See Table 2).

This layered model reflects the progressive enrichment of raw data into strategic foresight. As information systems evolve, embedding knowledge at each stage becomes essential for achieving potencial growth through improved ROI outcomes. In this regard, four tasks were formulated.

It should be noted that the given goal was formulated by synchronizing the DIKW model with the phases of the roadmap application mechanism. During the synchronization, it was established that each phase of the mechanism can

be described in terms of goal-setting technology in the direction from the goal to the vision. In our case, as the evaluation interval increases, the transition is made in the opposite direction, namely: Goal, Strategy, Mission, Vision.

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Table 2

DIKW four-tiered integration model

DIKW Level	Goal-Setting	Technological Application	Strategic Function in ROI
Data	Goal	Data acquisition tools, sensors, APIs	Real-time collection of transactional or behavioral data
Information	Strategy	Data processing engines, dashboards, visualization	Pattern recognition and trend mapping
Knowledge	Mission	Data processing engines, dashboards, visualization	Insight generation, correlation analysis
Wisdom	Vision	Machine learning algorithms, forecasting tools	Strategic investment decisions, risk anticipation

1. ***Analyzing Data Inputs and System Connections (Goal)***: Investigating how data flows through the system and the relationships between various components to highlight contradictions and areas for improvement.

2. ***Adjusting Indicators (Strategy)*** Refining key performance indicators (KPIs) to address contradictions in ROI calculations and ensure alignment with the evolving understanding of knowledge and wisdom in the system.

3. ***Developing Medium- and Long-Term Scenarios (Mission)***: Creating forecasts and strategies that enhance ROI methodologies while considering both immediate system needs and long-term objectives informed by the DIKW model.

4. ***Preserving Emergent Properties (Vision)***: Ensuring that emergent properties within systems are not compromised during the optimization of ROI, allowing the system to remain adaptable and resilient over time.

In the applied aspect, the use of methodological frameworks ensures the manageability of the organization throughout its entire life cycle. The implementation of the DIKW model on ROI (Return on Investment) technology requires a structured and methodical roadmap that facilitates the

transformation of raw data into strategic wisdom, ultimately enhancing decision-making and value creation within organizations. This roadmap is based on a progressive layering of technological and managerial capabilities that allow data to evolve into higher-order assets, culminating in actionable wisdom for activity optimization.

3 Conclusions

The integration of DIKW with ROI technologies may offer a transformative approach to enhance organizational capability in data interpretation and strategic planning.

Thus, the proposed approach integrates metasystem designs and modular development principles to enhance the reliability of ROI assessments and emergent property management. By aligning ROI models with the DIKW model, the study demonstrated that contradictions in existing systems could be addressed more effectively, leading to improved decision-making and better system outcomes.

The novelty of this research lies in its incorporation of the DIKW model into ROI analysis and the integration of updated VMSG models and metasystem frameworks. By emphasizing the commoditization effect, logical independence, and the flow from data to wisdom, the study introduces a novel approach to ROI and emergent property analysis. These methods foster innovation while ensuring that systems remain stable, adaptable and aligned with both short-term gals and long-term perspectives.

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