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OF THE NATIONAL BANK OF UKRAINE



Software Tools in System of Operational Risk Management in Bank

IT for Practice 2015

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AGENDA

- ***Modern features of the operational risk of bank***
- ***Operational risk management in the risk-based performance management system of bank***
- ***IT solutions for the System of Operational Risk Management (ORM) in Bank***
- ***ORM Software Tools for Banks***
- ***Conclusions and recommendations***

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- ***The concept and modern features of the operational risk of bank***
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Operational risk associated with all directions of banking and is particularly important for functioning of the bank.

The Basel Committee on Bank Supervision (BCBS, June 2004) puts importance on operational risk in second place among the other risks and defines it as:

“the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic and reputational risk”.

Within the framework, of the so-called “Basel III”, the most important aspects improving of BCBS approaches to Operational Risk Management have become:

- revised principles on risk management in corporate governance for banks (July 2015);
- formulation and practical aspects of bank of the principles (June 2011) and recommendations to optimize the basic elements of operational risk management (October 2014);
- recommendations on use of the Advanced Measurement Approaches for operational risk (June 2011) and proposals to correct deficiencies of the Simpler Approaches for operational risk measurement (October 2014);
- principles of effective aggregation and reporting of operational risk events (January 2013) and analysis of progress in their application in order to improve operational risk management (December 2013).

About a large scale of losses in 60 banks around the world and frequency distribution events of standard categories of operational risk aside typical business lines by 2008 - 2013 years shows information of The Operational Risk data eXchange Association ORX (2014).

The total amount of losses from operational risk by 2013 was 11,399 MEUR.

Gross losses by business line and event type – reported to ORX during the year 2013 ≈

€ Million	Corp. Finance	Trading & Sales	Retail Banking	Private Banking	Commercial Banking	Clearing	Agency Services	Asset Mgmt.	Retail Broker.	Total	% of Total
Internal Fraud	€0.2	€1.2	€158.0	€13.9	€0.7	€0.6	€0.8	€23.6	€39.1	€238	2.09%
External Fraud	€28.2	€1.6	€690.0	€815.0	€11.5	€3.4	€1.1	€37.1	€24.1	€1,613	14.16%
Employment Practices & Workplace Safety	€10.3	€40.9	€432.0	€33.2	€1.7	€9.2	€6.5	€117.0	€18.5	€669	5.88%
Clients, Products & Business Practices	€14.3	€625.0	€2,948.0	€322.0	€5.8	€97.2	€77.6	€269.0	€133.0	€4,492	39.43%
Disasters & Public Safety	€1.0	€0.7	€40.3	€3.3	€0.2	€0.1	€1.0	€0.2	€0.2	€47.0	0.41%
Technology & Infrastructure Failures	€0.9	€28.8	€47.1	€52.7	€8.6	€8.9	€1.5	€1.6	€0.9	€151	1.33%
Execution, Delivery & Process Mgmt.	€17.6	€2,036.0	€1,010.0	€589.0	€99.6	€184.0	€152.0	€53.7	€39.2	€4,181	36.71%
Total ≈	€72	€2,734	€5,325	€1,830	€128	€303	€241	€502	€255	€11,390	
% of Total	0.64%	24.00%	46.75%	16.07%	1.12%	2.66%	2.11%	4.41%	2.24%		

Recent events in the banking system of Ukraine also related with material and financial losses of banks.

It led to liquidation of 50 banks and a range of banks in stage of liquidation (the list is constantly growing).

The modern features of operational risks of Ukrainian banks

They are associated with such categories of the operational risk as:

- the risk of damage to material values, including the risk of business interruption;
- risks of changes in laws and regulatory requirements;
- risks of internal and external fraud;
- risks of relationships of the stakeholder bank.

The Problem of ORM

Problem of identification, quantitative assessment, monitoring, control and prediction of essential operational risks due to their features which, in our opinion, are as follows:

- typical is slight probability of events and their rarefaction in time in conjunction with devastating character of financial and other effects of events;
- typical is not repetition of events and the emergence and creation of new risky situations and risk factors;
- often operational risks arising in conjunction with other risks or its groups;

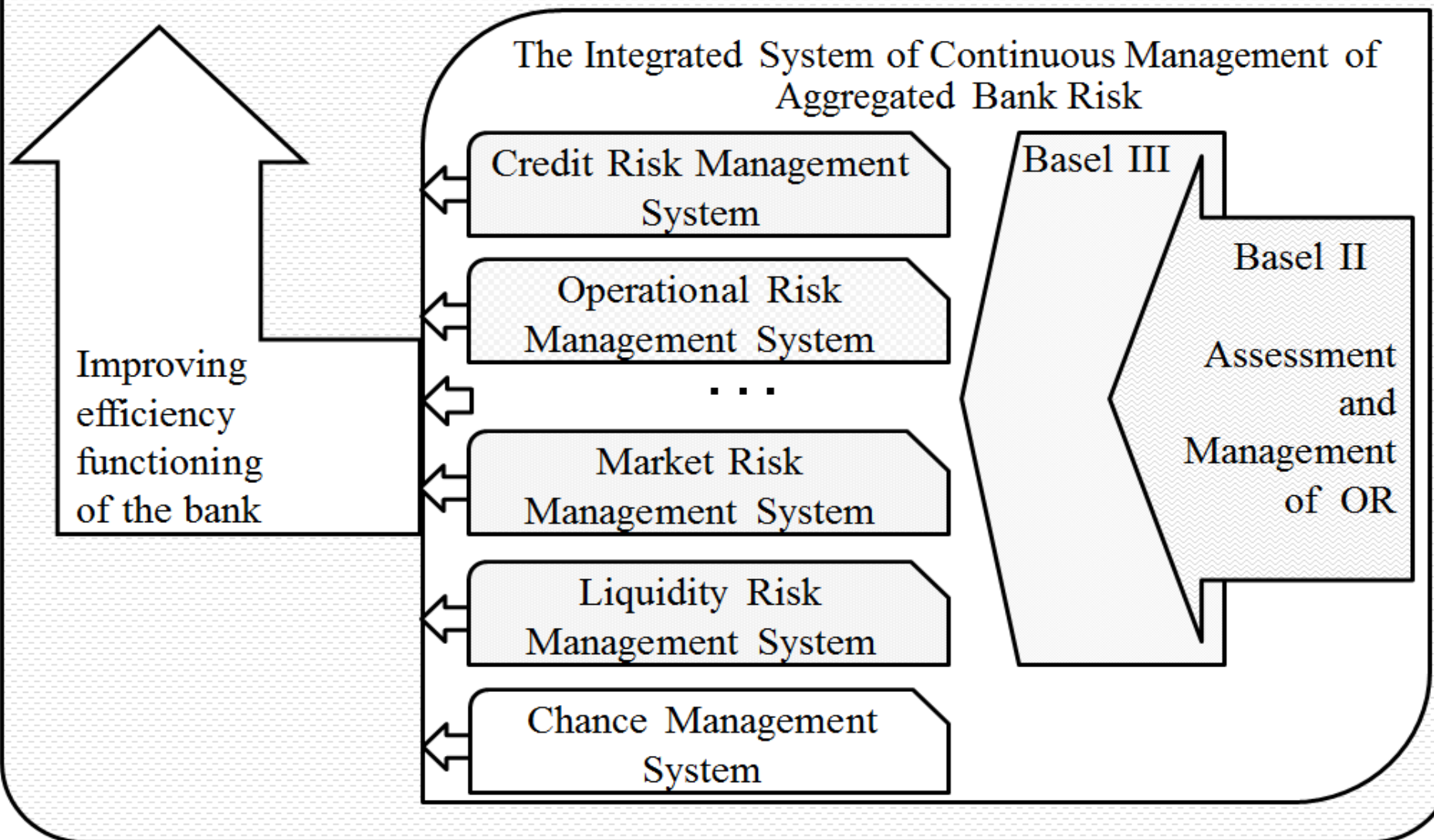
The Problem of ORM

- part of operational risks has latent nature, that is, implementation of risks is manifested not immediately after the event, subsequently (or never) and amount of the losses from not detection of several such events can reach the critical values for business;
- catastrophic events are mainly the result of the coincidence (concentration) in space and time several risk factors which may located within the permissible deviations of operation and therefore guilty in the event may not be;
- the risk is specific for a particular bank and depends on its organizational structure, system of information flows, quality and management practices, products and business processes;
- the difficulties of determining factors and the impossibility of complete removal of risk sources.

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The Complex System of Risk-Based Performance Management of Bank



The operational risk management are integrating into the general system of performance management of the bank.

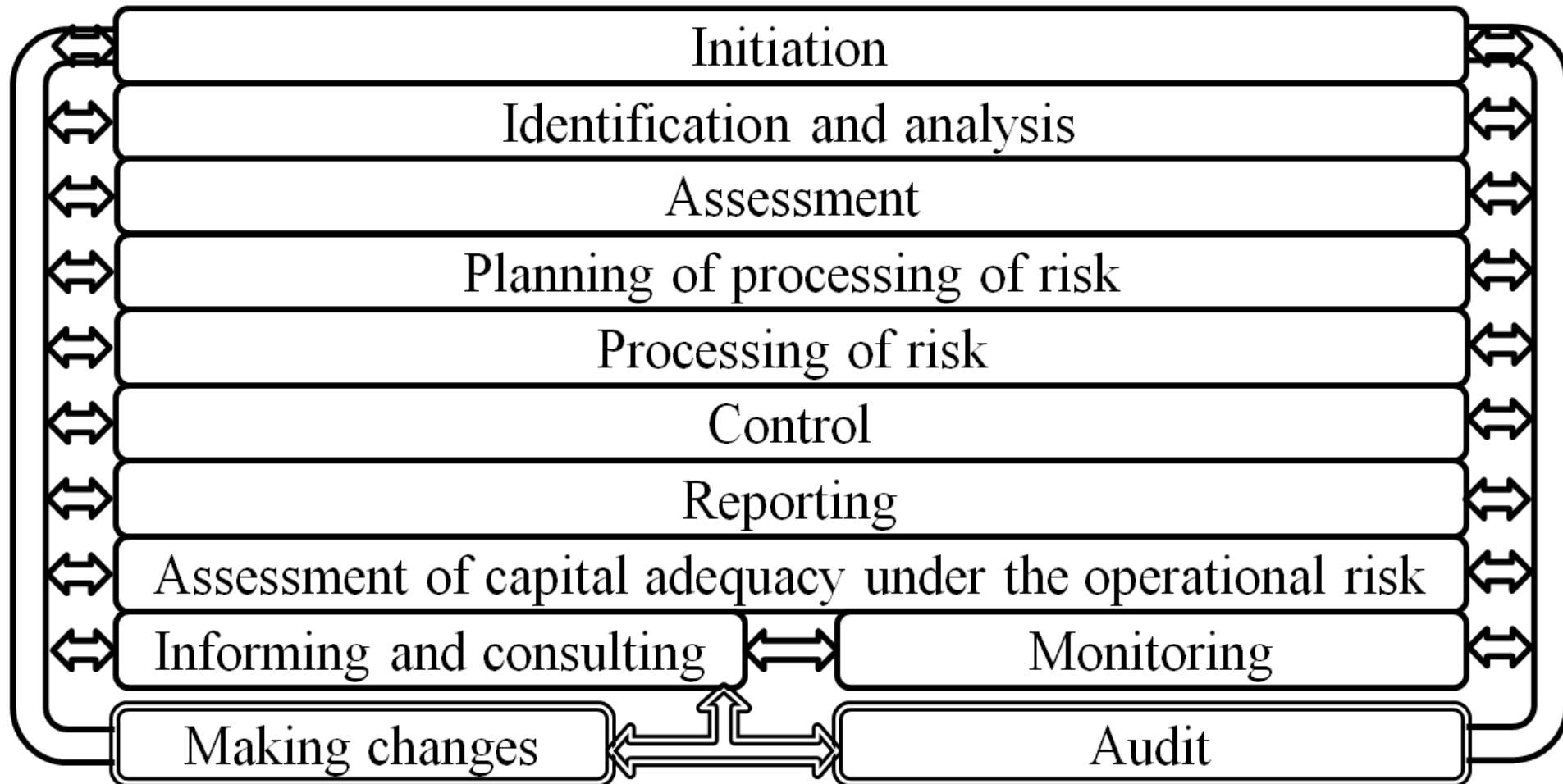
Effectiveness is increasing by improving the decision making process from effective use of limited resources based on forecasting and eliminating the causes and consequences of adverse events.

The main goal for risk management (of chances and losses) in the bank is a positive impact on achievement of target value of its objective function FG .

Analysis of specific in point of view consideration of interests bank stakeholders allows us to conclude that most appropriate is a model of maximizing the value of bank V :

$$FG = V \rightarrow \max.$$

Model integrated operational risk management process in bank



Source: ISO 31000, 2009; own.

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Typically, automated operational risk management is a “billet”, which then adapted to the actual conditions and business processes of a particular bank.

Specificity of operational risk management cannot establish such production systems "turnkey".

Automation allows to solve the following tasks on operational risk management:

- collecting, processing and storing information about the risks and risk factors necessary for risk management;
- automation of algorithms of risk analysis and risk portfolios, the calculations and mathematical modeling;
- provision to participants of risk management processes of the necessary information,
- the creation of conditions for effective information exchange;
- formation of regular reporting of risk management.

Among the main processes of bank which automated are:

- corporate governance in accordance with the standards BCBS (2015),
- management of the overall risk,
- allocation of reserve capital to business units,
- compliance and social responsibility.

Such systems are divided into two types:

- eGRC (enterprise GRC)
- IT-GRC

Already now instead of purchase separate solutions (for finance, risk management, audit, IT and for other functional business units), many banks choose the single integrated platform eGRC with the basic modules.

These modules are automate the processes of corporate governance and risk management, audit and regulatory and legal regulation of changes.

In development of banks may pass through the gradual introduction of compatible modules and function-specific applications.

Note that these solutions themselves do not minimize the risks, but only help to reduce the risk.

They:

- make internal processes of the organization more transparent for the leadership;
- minimize the costs of activities of operational risk management;
- facilitate the timely detection of risk associated with these processes;
- allow more quickly respond to identified risks and control the activities of processing risks.

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Currently the market offers software solutions from international and ukrainian companies.

The research results who regularly carry known companies, for example,

Gartner. <http://www.gartner.com/>

 **Chartis** <http://www.chartis-research.com/>

help to choose the best solution on the market to improve corporate governance, risk management, business continuity and the bank's ability to achieve defined business goals.

Hype Cycle for GRC Technologies, 2015

John Wheeler

Magic Quadrant for Business Continuity Management <i>Roberta Witty</i>	Magic Quadrant for IT Vendor Risk Management <i>Chris Ambrose</i>	Magic Quadrant for IT Risk Management <i>Paul Proctor</i>	Magic Quadrant for Operational Risk Management <i>John Wheeler</i>	Market Guide for Audit Management <i>Khushbu Pratap</i>	Market Guide for Corporate Compliance & Oversight <i>Jeffrey Wheatman</i>	Market Guide for Enterprise Legal Management <i>Jie Zhang</i>
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Market Guide for GRC Software Platforms

John Wheeler

Graphical representation of the results of market research GRC software platforms:

- Magic Quadrant for Operational Risk Management, Source: Wheeler and Paul, 2014.

X - “Completeness of vision” - 8 criteria:

Market Understanding, Marketing Strategy, Sales Strategy, Offering (Product) Strategy, Business Model, Vertical/Industry Strategy, Innovation, Geographic Strategy.

Y - “Ability to Execute” - 7 evaluation criteria:

Product/Service, Overall Viability, Sales Execution/Pricing, Market Responsiveness/Record, Marketing Execution, Customer Experience, Operations.

High, Medium, Low.



As a result of this market analysis Operational Risk Management solutions in 2014 many companies are offering the GRC solutions, which can be deployed within a cloud-based or on-premises environment.

However, none of the vendors did not have a complete or ideal solution to manage operational risk, which would be fitted to all financial institutions.

The Security Division of EMC (RSA) demonstrated

Archer GRC Platform v.5.5 SP1

to a wide variety of end users, and supports a spectrum of use cases related to ORM.

This Platform is scalable but well-suited for large, dynamic and complex organizations.

GRC solutions from MetricStream

focused on large-scale implementations (with unique requirements) that demand a highly tailored solution.

For this purpose a base platform integrated with purpose-built modules, such as Risk Management, Compliance Management, Loss Management, Scenario Analysis Management and Issue Management.

Increasingly in demand are solutions for sophisticated analytics and modeling capabilities offered by vendors like IBM, SAP and SAS.

IBM's core platform,
OpenPages GRC Platform v.7.0
is offered as an on-premises or SaaS-based solution для larger, more complex environments and with limited functionality for small and midsize businesses.

SAP Risk Management is oriented by companies that utilize SAP ERP modules or other SAP software products that will use the required infrastructure / support and allow for easier integration.

SAS Enterprise GRC v.5.1

includes operational risk module SAS, and SAS OpRisk VaR modeling and statistical tools and well suited to the financial services industry.

The company Chartis Research Ltd.
especially for market analysis Operational
risk & GRC - solutions developed its own
methodology

RiskTech100®

taking into account production,
technological and organizational
capabilities vendors.

The methodology contains six areas of research

- Functionality,
- Core technology,
- Organizational strength,
- Customer satisfaction,
- Market presence,
- Innovation

Total score for the top 100 risk technology providers in the world.

According to the research results in 2015 once again

1. IBM ranked number one.

Also took first place SAS,

3. SunGard

The following took 7 seats

Wolters Kluwer FS, MSCI, Oracle,
Moody's Analytics, Thomson Reuters,
Misys, OpenLink.

The RiskTech Quadrant® for describes view of the vendor landscape for operational risk technology solutions.

It takes into account product and technology capabilities of vendors as well as their organizational capabilities. The sophisticated methodology of ranking allows to explain which solutions would be best for specific buyers

Completeness of offering analyzed by of 15 parameters, Market Potential takes into account 10 parameters.



It should be noted that implementation of GRC solutions - it is always a long and time-consuming project that requires interaction between business and IT departments of the bank, company consultant and vendor.

Typical solutions here does not and can be, every project is unique. But not always objective is modification of software solution by the vendor, more often it is works to implementation, that is performed by consulting company.

First of all, this adaptation of decision under the specific business processes of a particular bank and under risk assessment methodology, which accepted by it.

Labor input of implementation usually depends on the maturity of risk management processes, risk assessment techniques used in the company and the specific technical solutions.

Banks can use the synergies arising from the integration of standard business models vendors solutions and personal experience, specific of the business, as reflected in their own or in customized solutions.

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- The current stage of development GRC solutions market includes integrated product for performance management and risk management, and also function-specific applications and applications that support the mobility of users.
- Using the results of the analysis Market Operational risk & GRC by different consulting companies allows banks to comprehensively evaluate proposed IT solutions and choose the most suitable product.

- Large integrated operational risk management systems demand only the largest banks.

For these banks, it is important to improve their efficiency and reduce the likelihood of risk due to a high volume and velocity of information, complexity of algorithms processing. Also, the big banks have the necessary resources for implementing best-in-class products for high reliability and security requirements imposed for risk-management systems.

- Small banks are trying to make their own analysis and forecasting of operational risks.
- The modern tendency to increase competition, the persistence of instability and amplification regulation in the banking sector the demand for operational risk management system will only grow.

Thank you for Your attention!



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