

OPERATIONAL RISK APPETITE

May 8, 2015



AGENDA

Brief Introduction

Discussion on Operational Risk Appetite
Industry Perspective

Technology considerations

Different Perspective

ANALYST RECOGNITION



Source: Gartner Leaders Quadrant for EGRC Platforms 2013

BWise is in the Leaders Quadrant for the 5th time in a row

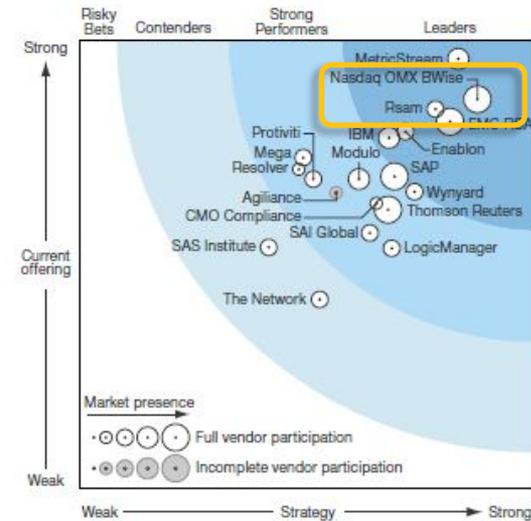
Gartner, Inc. (US) is the world's leading information technology research and advisory company.



Source: Forrester Wave for EGRC Platforms 2014

BWise has been a leader in the Forrester Wave since 2006

Forrester Research (US) is a global research and advisory company.



Source: The Info-Tech eGRC Vendor Landscape 2013

BWise has been recognized as a Champion in the eGRC market

Into-Tech (Canada) is the global leader in providing IT research and advice.



Source: Chartis RiskTech Quadrant™ for Enterprise GRC 2013

BWise is mentioned as a leader in the Chartis RiskTech Quadrant™

Chartis (UK) analyses the systems, products, vendors, applications and trends in the risk technology marketplace.



NASDAQ BWISE CUSTOMERS



OPERATIONAL RISK APPETITE

Industry Considerations



ASSOCIATION OF FOREIGN BANKS (AFB)

Operational Risk Appetite Definition

There is no prescriptive or universally accepted definition of operational risk appetite that is suited to every organisation, sector or jurisdiction. Conceptually, however operational risk appetite is 'the level of operational risk that one (entity/ platform/ business line) is willing to accept on a risk-reward basis, where the reward aspect may include considerations such as revenue/returns from engaging in specific activities/being in business, versus the manifestation or potential impacts of operational risk (through operational risk losses, fines and/or regulatory sanctions, reputational impact etc).'

There is also a connected/ancillary concept of risk tolerance that some firms may use, which is the level of risk above which one (entity/ platform/ business line) cannot or should not go.

Additional concepts include risk capacity, limits, and thresholds etc., which are linked to both the risk appetite and the 'measurement' of operational risk / the operational risk profile.

An organisation should articulate what it means by operational risk appetite as well as introduce common vocabulary and describe ancillary terms and tools/measures used to ensure that the terminology is clearly understood.

ASSOCIATION OF FOREIGN BANKS (AFB)

Operational Risk Appetite Concepts

Contrary to credit and market risk, operational risk is rarely intentionally sought and has no direct material upside in terms of return/ income generation but is linked to business reward and therefore needs to be identified, measured, monitored and managed. Operational risk and operational risk appetite should be considered in terms of a holistic view of operational risk which can be broken down into subcomponents or subcategories.

Following on from this, it is suggested that an Operational risk appetite framework should have the following characteristics:

- Should be set in both quantitative and qualitative terms;
- Should consider the risk-reward dynamic;
- Have clear trigger points, actions and escalation processes;
- Have clearly described monitoring arrangements and appropriate ownership thereof;
- Be formally set and approved by the appropriate governance body and appropriately disseminated down/ translated for lower levels or strata (based on business line, entity etc);
- Can be set at various levels, e.g. Board, region, entity, business line, department and operate consistently at a consolidated level and at a sub strata level;
- Have clear ownership at the respective levels;
- Be embedded/ used by the business;
- Be expressed through a suite of measures, rather than just one 'measure' or parameter (e.g. just losses or just Key Risk Indicators);
- Be simple to understand (e.g. a compendium of operational risk Key Risk Indicators and trigger points will need subjective interpretation as to whether they show an operational risk profile to be within OR appetite or not); and,
- Be appropriately documented and reviewed on a periodic basis.

ASSOCIATION OF FOREIGN BANKS (AFB)

Poor Examples:

- “We have zero tolerance for fraud.” Fraud is an event that cannot be wholly eliminated except by not entering in to business.
- “There is low appetite for operational losses.” The term “low“ is vague and needs to be quantified.
- “The operational risk appetite of the organisation is medium“
- “Our operational risk appetite is bounded by the annual value of operational risk losses. We do not have an appetite for operational risk losses that exceed USD20m for the year“.
- “The operational risk appetite of the organisation is defined by the operational risk loss value using a 99.5 % confidence level on our statistical loss distribution“.

Contrary to credit and market risk, operational risk is rarely intentionally sought and has no direct material upside in terms of return / income generation ...

but is linked to business reward and therefore needs to be identified

EXAMPLE, RESERVE BANK OF AUSTRALIA

4.4 Operational Risks

The Bank's appetite for specific operational risks is detailed below. Risks are carefully analysed in all the Bank's operational activities, including to ensure that the benefit of the risk control measures exceeds the costs of these measures.

(i) Information Technology

Information Technology (IT) risks cover both daily operations and on-going enhancements to the Bank's IT systems. These include:

- **Processing – Prolonged outage of a core RBA system:** The Bank has a very low appetite for risks to the availability of systems which support its critical business functions including those which relate to inter-bank settlements, banking operations and financial markets operations. Maximum recovery times have been identified and agreed with each business area.
- **Security – Cyber-attack on RBA systems or networks:** The Bank has a very low appetite for threats to Bank assets arising from external malicious attacks. To address this risk, the Bank aims for strong internal control processes and the development of robust technology solutions.
- **On-going Development:** The implementation of new technologies creates new opportunities, but also new risks. The Bank has a low appetite for IT system-related incidents which are generated by poor change management practices.

(ii) Fraud and Corruption

The Bank has no appetite for any fraud or corruption perpetrated by its staff. The Bank takes all allegations of suspected fraud or corruption very seriously and responds fully and fairly as set out in the Code of Conduct.

(iii) Physical Security

The Bank strives to provide a highly-secure environment for its people and assets by ensuring its physical security measures meet high standards. The Bank has a very low appetite for the failure of physical security measures.

(iv) Compliance

The Bank is committed to a high level of compliance with relevant legislation, regulation, industry codes and standards as well as internal policies and sound corporate governance principles. Identified breaches of compliance will be remedied as soon as practicable. The Bank has no appetite for deliberate or purposeful violations of legislative or regulatory requirements.

(v) Information Management

The Bank is committed to ensuring that its information is authentic, appropriately classified, properly conserved and managed in accordance with legislative and business requirements. It has a very low appetite for the compromise of processes governing the use of information, its management and publication. The Bank has no appetite for the deliberate misuse of its information.

MARKET VIEW



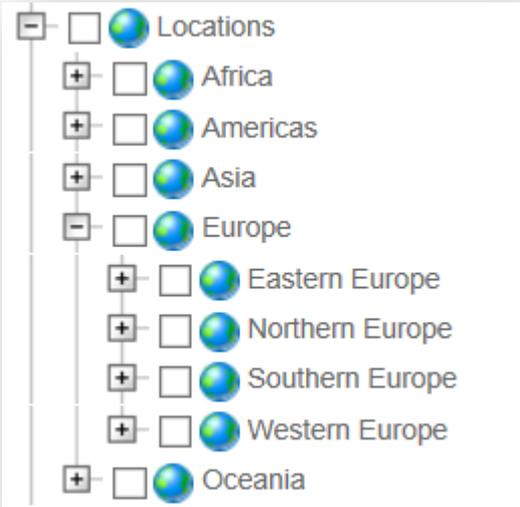
Examples of quantitative measures	Characteristics	Sample
Expected loss measures	Describes operational risk appetite in terms of the amount of losses that the institution is willing to incur in the normal (or expected) course of business.	Management is willing to accept non-exceptional operational risk event losses to a maximum of x% of revenue.
Unexpected loss measures	Describes operational risk appetite in terms of the amount of losses that the institution is willing to incur above a certain (high) threshold.	Management is not willing to accept any single loss greater than \$xm, or combination of y losses in a quarter in excess of \$zm.
Operational limits	Describes operational risk appetite in terms of an amount of activity (for instance in the form of a process throughput measure) that management is willing to accept ('safe rate of speed').	We are not prepared to process more than x account openings on any single day.
Operational risk capital	Describes operational risk appetite in terms of the amount of operational risk capital that management is willing to see attributed to a business or an activity.	A maximum of x% of total regulatory capital is permitted to be allocated to operational risk in this business.

Traditionally, risk appetite has been easier to define for credit risk and market risk than for operational risk. This is due to the fact that operational risk is pervasive, managed across the organisation and is often really just a consequence of operating the business. In addition, operational risk has been more difficult to quantify than market and credit risk, and besides (imperfect) capital measures there is no 'common currency' for operational risk. As a result, senior management teams are frequently challenged by the mandate to define and express operational risk appetite in a way that is understood and accepted across the organisation, and can be used to guide business decisions.

TECHNOLOGY CONSIDERATIONS

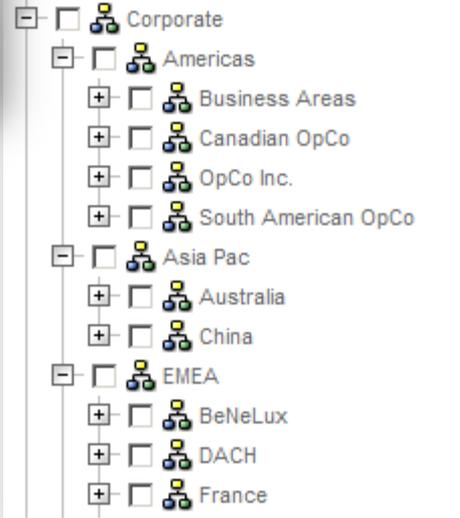


CAPTURING THE ORGANIZATION



Business units

Legal entities



DECOMPOSITION AND AGGREGATION

Decomposition

- Business Units
- Legal entities
- Geographical locations
- Business lines
- Brands

Best Practice Decomposition

- Document structural relations
- Minimize structures
- Decomposition of risk appetite over business units, to ensure best recognition and adoption

Aggregation

- Business Units
- Legal entities
- Geographical locations
- Business lines
- Brands

Best Practice Aggregation

- Initial aggregation by business unit structure
- Aggregation by other organization structure (typically legal entities) by using documented relations

CAPTURING RISK APPETITE

PER ENTITY, UNIT

OpCo Inc.

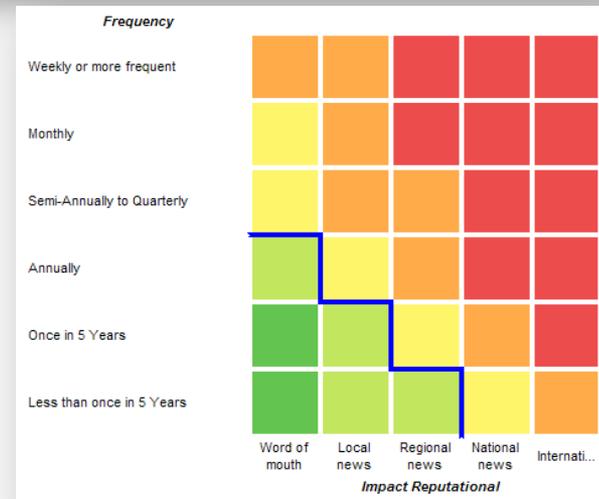
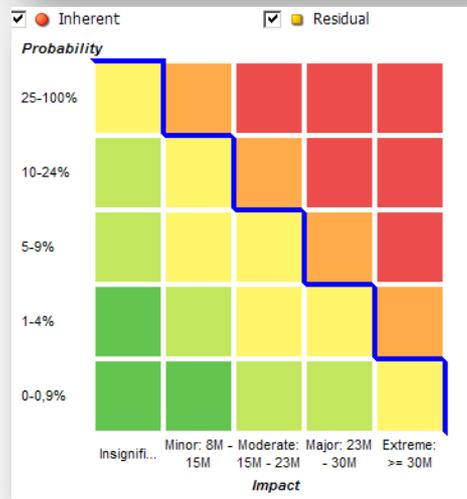
General Functions Persons Companies Issues

Risk Appetite -- News -- Division Dashboard Incidents Risk Dashboard Results Approval Permissions Relation Permissions

<input type="checkbox"/>	Dimension	Appetite Level	Description
<input type="checkbox"/>	Financial	30,000,000	US Dollar \$
<input type="checkbox"/>	Heat Map	30,000,000	US Dollar \$

Risk Appetite History

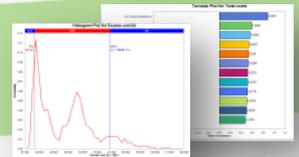
Dimension	Date from	Date to	Appetite Value
Financial	March 16, 2010 11:47:12 AM	November 19, 2011 9:56:00 PM	30,000,000
Heat Map	March 16, 2010 11:51:25 AM	November 19, 2011 9:56:00 PM	30,000,000



BANKING OPRISK CYCLE

Risk Reporting

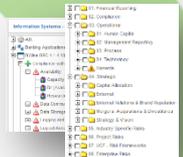
Capital Calculation



Risk Framework



Risk Identification



RCSA



Action Management



Loss & Incident Management



KRI Management

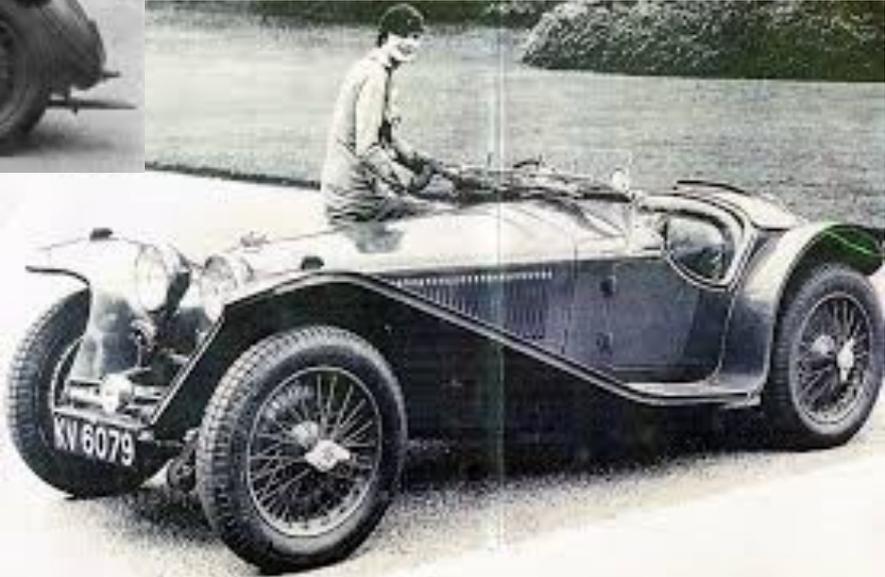


DIFFERENT PERSPECTIVE

Contrary to credit and market risk, operational risk is rarely intentionally sought and has no direct material upside in terms of return / income generation



BACK THEN ...



TODAY

BMW Ultimate Service

NO-COST MAINTENANCE
— 4 YRS / 50K MILES¹ —



THANK YOU

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