



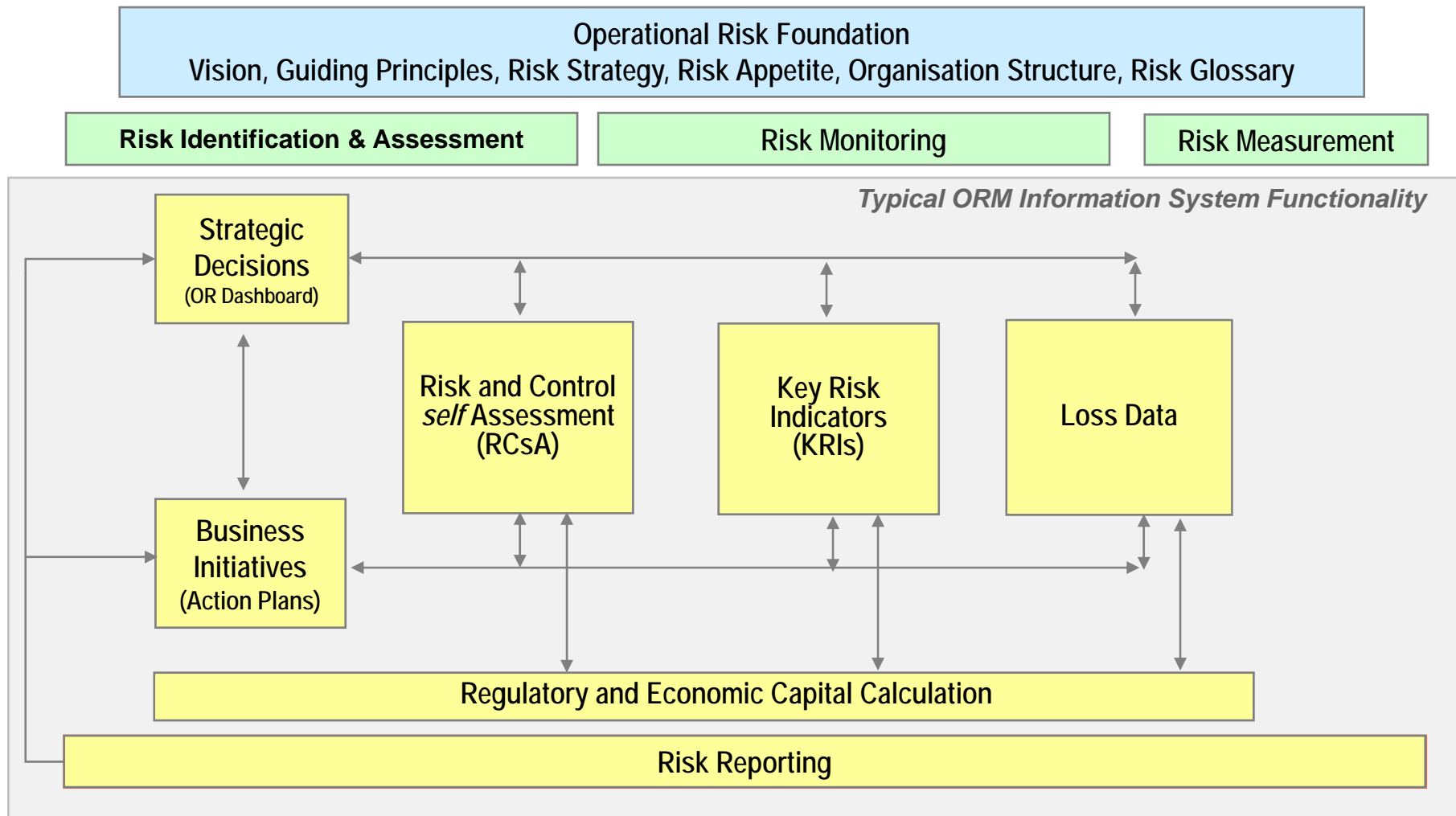
# Operational Risk Technology Considerations

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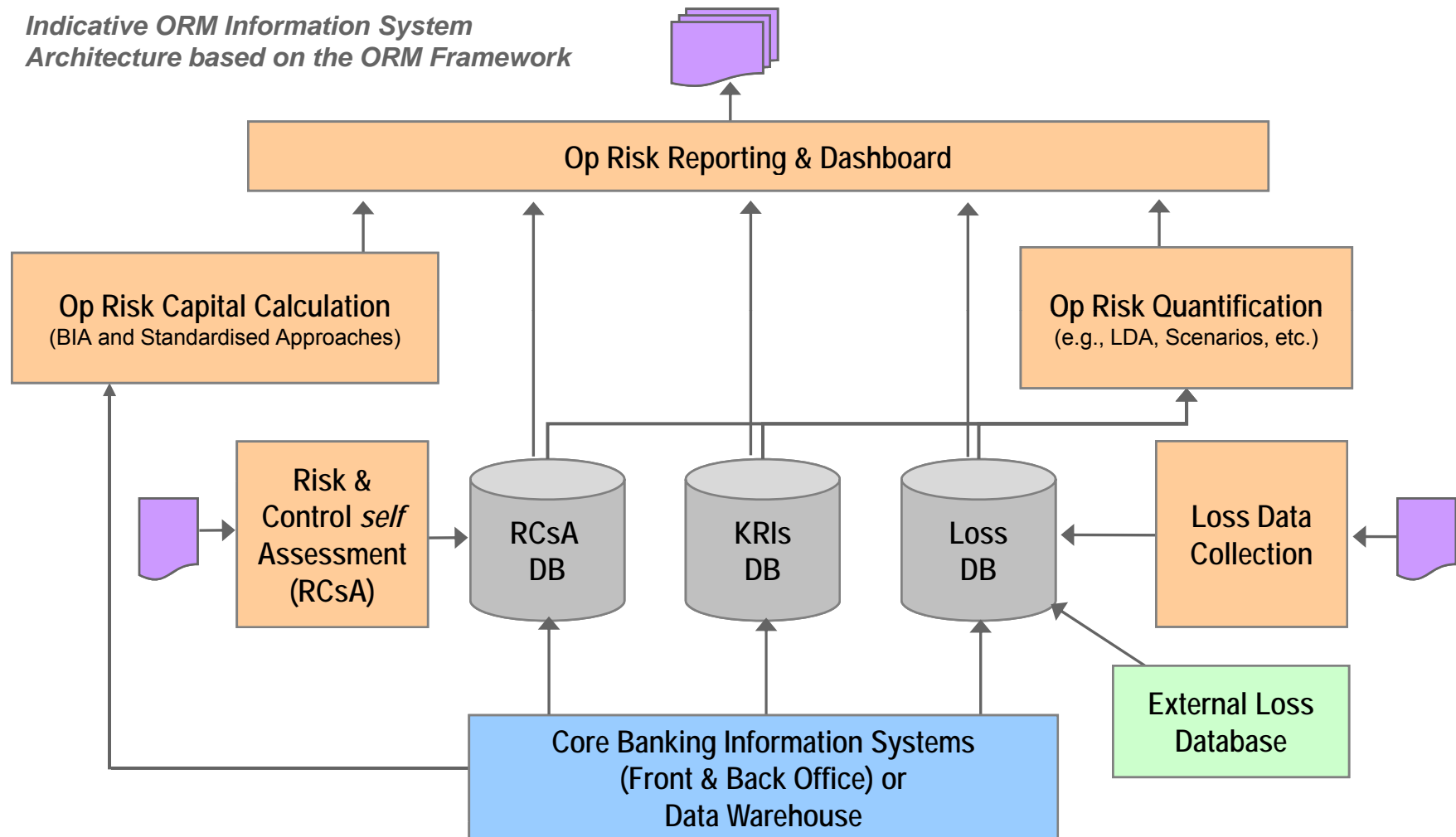
# ORM framework and information system functionality

Ernst & Young ORM Framework

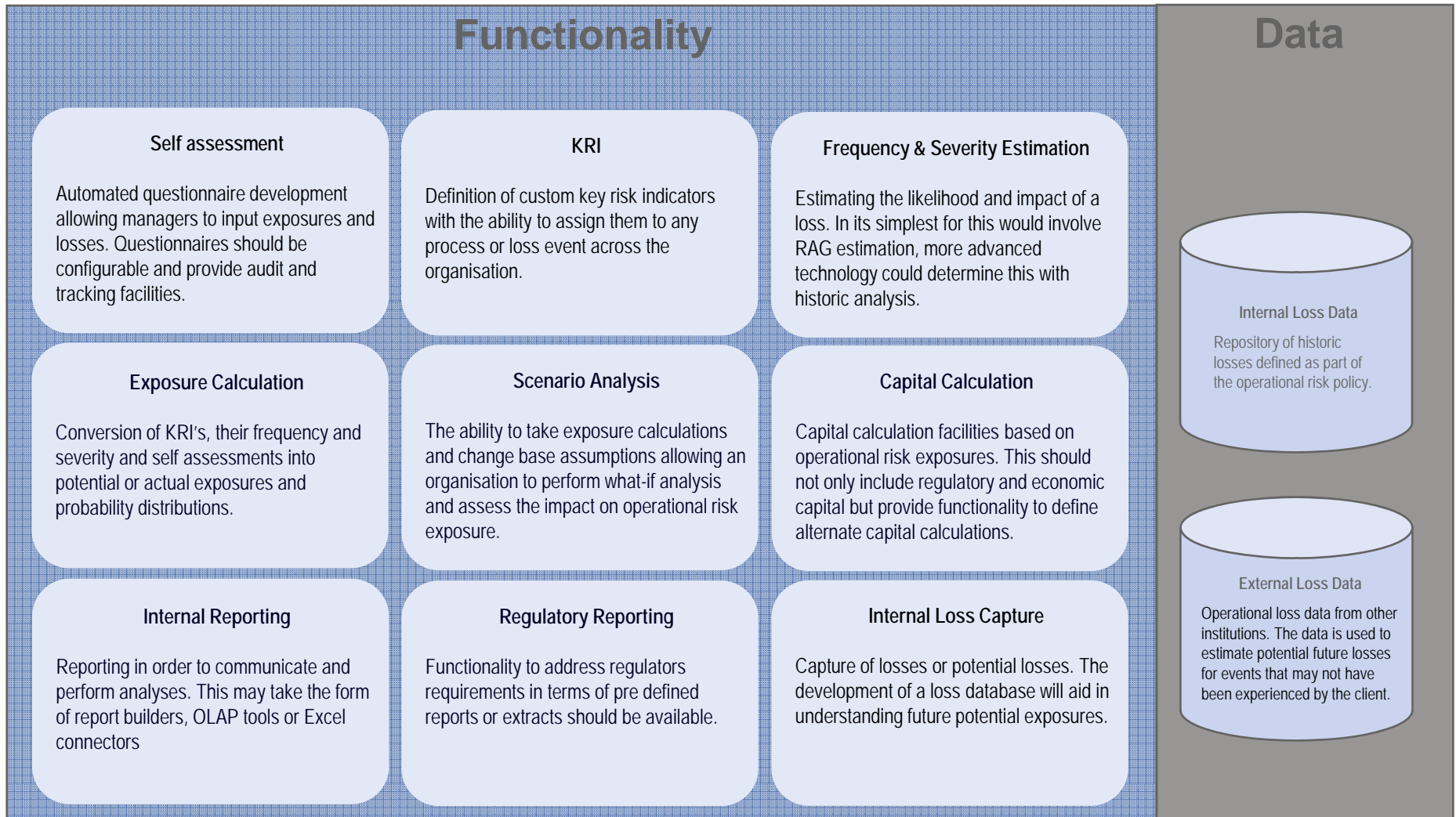


# Generic ORM information system architecture

*Indicative ORM Information System  
Architecture based on the ORM Framework*



# Key Technology Components



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# Key Considerations

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## Operational risk programs should give due consideration to:

- ▶ Risk Convergence – Governance, Risk and Control
  - ▶ Technology implementation programmes should consider the overlap between various risk and compliance initiatives such as Basel II and SOX 404. As these initiatives begin to converge, clients need to consider if their chosen technology and implementation partners are able to support this transition.
- ▶ Solution Integration
  - ▶ Clients should consider how a technology will integrate into their current architecture to provide a true end to end solution. Consideration should be given to the components required by a solution as apposed to an application, such as sophisticated reporting and analysis, document management and well as incident tracking. Does the vendor provide the entire stack or do the they expect a number of building blocks to be in place ?
- ▶ Project Mode vs BAU
  - ▶ Organisations embarking on operational risk technology initiatives should consider the impact of these projects on BAU. New initiatives require management both at a project and programme level. Clients must consider whether they have the bandwidth Interms of resources to ensure programme delivery without affecting business as usual.

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# Implementation Challenges

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## Lessons learned from industry deployments:

- ▶ **Configuration vs Development**
  - ▶ Customisation should be mostly parameter driven rather than requiring custom development efforts.
- ▶ **Scalability & Performance**
  - ▶ The solution should scale with regards to new business or departments being added. Customers should be aware of vendor benchmarks that indicate when performance will begin to degrade ie. Volumetrics.
- ▶ **Requirements Gathering**
  - ▶ Have a clear understanding of the data and functional requirements before deployment.
- ▶ **Out of the box functionality**
  - ▶ Expect a reasonable amount of preconfigured processes and templates to accelerate deployment, however, ensure that it can be customised to local requirements.
- ▶ **Project Mode**
  - ▶ Be aware of a continual state of analysis ie Analysis Paralysis. The objective is to take an iterative approach, with clear timeframes, deliverables and go live dates. Think Big, Start Small, Iterate and evolve.

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# Vendor Characteristics

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## What to expect from an implementation:

### ▶ **In-depth Operational Knowledge**

- ▶ Vendors should articulate an in-depth knowledge of operational risk. They should possess a deep understanding of practices and the business problems customers are facing.

### ▶ **Ability to Educate Prospects & Customers**

- ▶ Vendors should be able to educate a client on best practices and clearly articulate the benefits of migrating their business processes to the solution. They should bring a wealth of knowledge based on their experience with other clients, able to identify where performance and value will be increased.

### ▶ **Execution Excellence**

- ▶ Vendors need to demonstrate impeccable delivery with focus on the quality of software, support and implementation credentials.

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# Vendor Characteristics

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## What to expect from an implementation:

### ▶ Professional Services

- ▶ Solution vendors should possess a professional services organisation or partners, both from a technical and business perspective.

### ▶ Global Presence

- ▶ Large clients will require support from their vendors and integrators in different geographic locations. Vendors should demonstrate how they can support the clients regional departments.

### ▶ Revenues and Market Presence

- ▶ Clients understand the financial performance of the vendor in terms of revenues and market share. This will provide a good indication as to the stability and future of the vendor and their offering.

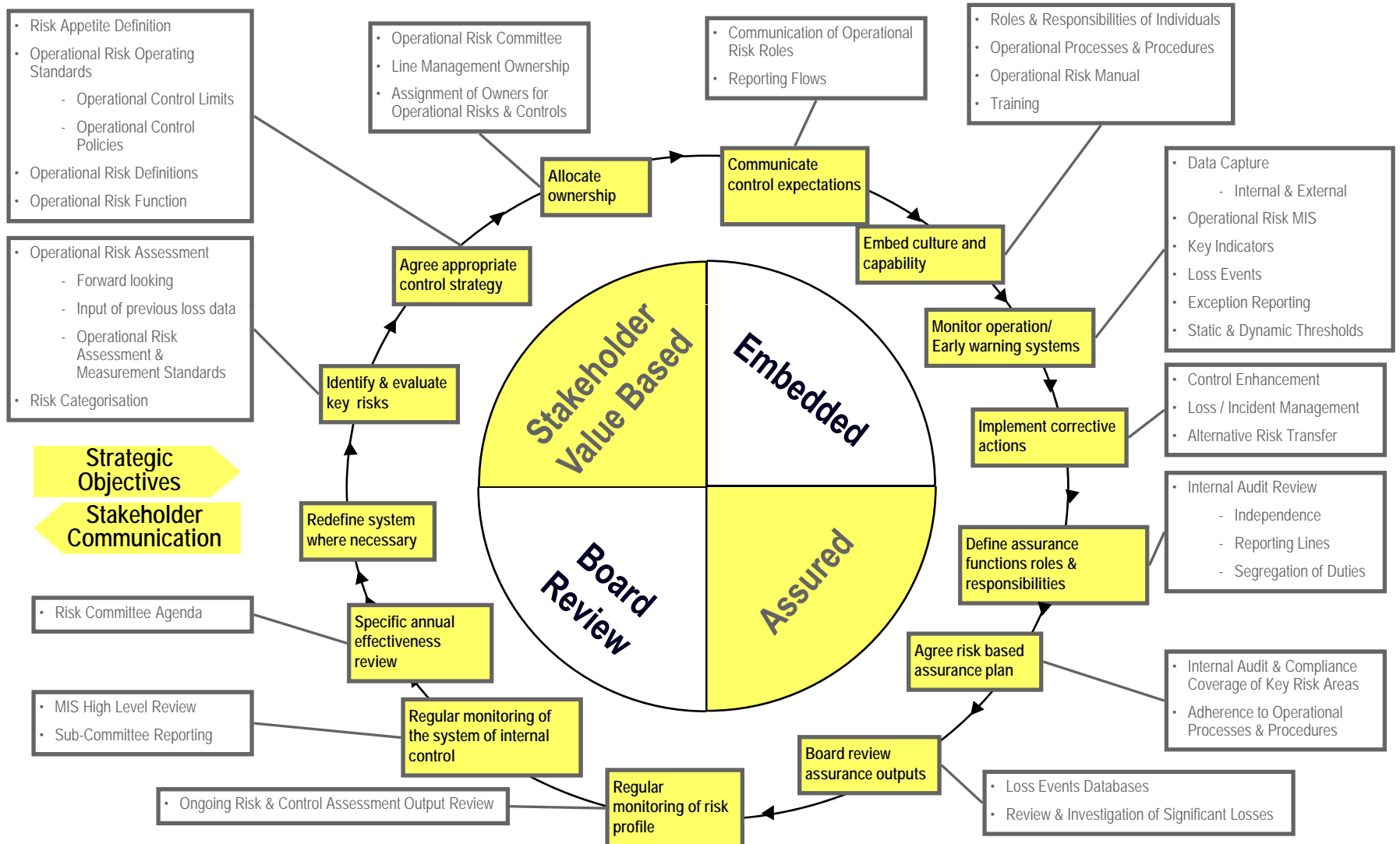
# Key Vendors\*

Key vendors in the market place:

Vendor	Solution
Algorithmics	OpRisk/OpVantage
Financial Objects	RAFT Radar
SAS	OpRisk
Methodware	Methodware
Oracle Financial Services	Reveleus
Open Pages	ORM
CI3	Sword

\* Not exhaustive : i.e Optial, EFront, Fermat and others

# Corporate Governance – Operational Risk



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# Mistakes Observed in Indian Banking Context :

## Operational Risk added in Implementing Operational Risk projects

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- ▶ **Trying to Predict Advanced Approach Readiness**
  - ▶ Jumping the gun by asking for every advanced approach model that they have only academically read up on when buying the system.
  - ▶ Operational Risk is about controls, collecting data and then analysing what kind of losses are worth focusing on and monitoring, then evolve advanced approaches with outcomes of loss distributions
- ▶ **Not analysing issues first and then doing a vendor assessment followed by implementation**
  - ▶ A full understanding of the risk profile, how it is spread in your branch/subsidiary network and whether there are appropriate controls, measures identified, materiality etc are needed before EVEN thinking of procuring a system
  - ▶ Different vendors may claim to have the same functionality, but our analysis shows that there is wide range of differences
  - ▶ Secondly, buying a system early before doing the analysis locks you into their pre-defined modeling approaches, even though these may not be useful to your loss distributions

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# Mistakes Observed in Indian Banking Context :

## Operational Risk added in Implementing Operational Risk projects

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- ▶ **Integrated Risk is important – Buying an Integrated Risk Management System is Not**
  - ▶ You can buy best of breed Risk Management systems – Credit Risk, Market Risk and Op Risk systems
  - ▶ Integrated Risk Management Systems fail to deliver in one or more areas and often not well integrated from a capital aggregation, modeling, stress testing perspective
  - ▶ EAI/SOA and associate technologies can allow you to make the glue between Best of Breed Risk Management and have an ability to develop the ERM in a way suitable for your bank profile – Capital Modeling, Capital Budgeting, Capital Aggregation and Stress Testing can be different than these in order to allow you to build stronger responses to the ICAAP and overall Enterprise Risk Management MIS for your organization
  
- ▶ **Buying now – may prove technology & methodology obsolescence**
  - ▶ Operational Risk is maturing, but in nascent stage right now
  - ▶ Models, methodologies will improve over time
  - ▶ Data readiness is biggest issue, invest in good Data Warehouses first and then scale/upgrade Operational Risk systems in the future

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# Mistakes Observed in Indian Banking Context :

## Operational Risk added in Implementing Operational Risk projects

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- ▶ **Holding themselves to Ransom from Systems Vendors**
  - ▶ Systems Vendors lock you in if you buy the full system from them or have an obligation to provide you with modules as they are released
  - ▶ One should know how to influence the Systems Vendors – by being part of their board of advisors around key products
  - ▶ High license payers are unfortunately not Indian, you may have volume, but not the expenditure with these vendors and have little to no say
- ▶ **Procurement should be done in phases**
  - ▶ Allow the project to be budgeted in phases and allow release of funds in phases.
  - ▶ It keeps the Systems Integrators and Vendors on their toes to deliver well within a phase and also for their technology not to become obsolete compared to other innovations.
  - ▶ A VALUE check can be done at the end of each phase and problems with delivery can be addressed before proceeding to the next phase

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# Mistakes Observed in Indian Banking Context :

## Operational Risk added in Implementing Operational Risk projects

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- ▶ **How does implementing Operational Risk properly help create VALUE from a financial/operational performance perspective?**
  - ▶ In some cases Op VAR can have a big impact on capital required inside a bank
  - ▶ A high amount of operational risk expenditure may indicate poor controls and processes – LEAN/SIX SIGMA can be effective to reduce waste and variance, which both can reduce operational risk
  - ▶ Examine how small changes in Operational Risk in key areas can impact the Balance Sheet/P&L and how this then can derive VALUE

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# Things You Can Do Wisely in an Investment in an Operational Risk Programme

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**Design Business  
Architecture First**

**Obtain an Experienced Independent  
Operational Risk Business Consulting Team  
with Modeling Skills**

**Independent  
Vendor Assessments**

**Write a tough RFP – With key scenarios to  
demonstrate and get the Consultant above to  
mark the technical scoring**

**Procure in Phases**

**Keep Cost Control and Value Add foremost.  
Put Systems Integrators and Vendors on the  
defence that they HAVEN'T won the whole  
project and have to prove themselves phase  
by phase – Be ready to hire another integrator**

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# Things You Can Do Wisely in an Investment in an Operational Risk Programme

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Improve T1 Skills  
Keep L1

Currently T1 technical assessments are very weak. Contract an experienced vendor selection team to score this and push vendors



Integrated Risk  
NOT Integrated Solution

Plan the Business Architecture with a proper Enterprise Wide Risk Framework from a Business Viewpoint and then work out how to integrate Best of Breed



## Q & A

For more information

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