

Misys Suite of Risk Solutions

## Credit Risk Vantage



Credit default loss  
modelling

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### Why Misys Credit Risk Vantage?

Credit Risk Vantage enables banks to quickly and effectively manage a portfolio of credit losses by using the proven and advanced models of CreditRisk+™ to determine economic capital, expected and unexpected losses and expected shortfall at portfolio and sub-portfolio levels.

Minimal input parameters and fast processing ensure the model is accessible, transparent and amenable to intuitive stress-testing.

### What is Credit Risk Vantage?

Credit Risk Vantage is a credit risk engine, based on the CreditRisk+ methodology, which enables credit default loss modelling.

It is designed to be completely interoperable with other systems. It delivers scientific and accurate results in a fast manner due to its light weight architecture.

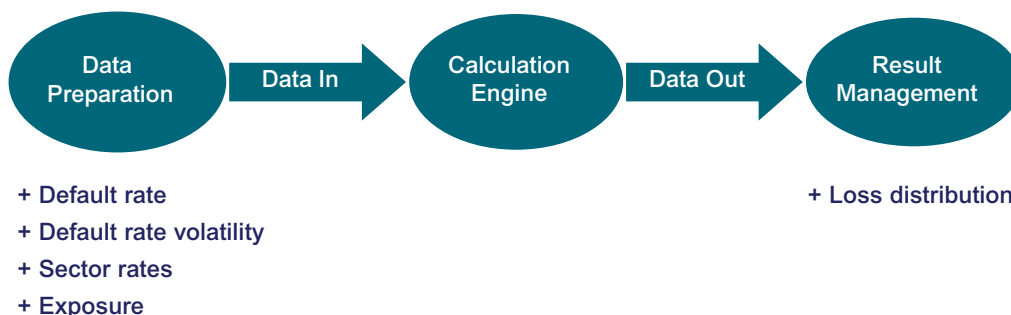
The Credit Risk Vantage component has been designed using Service Oriented Architecture (SOA). It can be integrated with a data warehouse, a front office system, a risk system, a back office system, or can be deployed as a stand alone system using XML files or MS Excel.

### What requirements does Credit Risk Vantage meet?

The credit crisis highlighted banks' exposure to unexpected credit default losses. A more robust and accurate representation of extreme value risk needs to be adopted. Risk concentrations can no longer be ignored. Markets and regulators are driving the need for more scientific credit loss measurement techniques to be implemented.

**Credit Risk Vantage calculates counterparty's contribution to portfolio credit loss thereby helping banks to locate risk concentrations within counterparty groups.**

#### Simple component structure



## How can Credit Risk Vantage be applied to your business?

It can be used for distribution loss queries as follows:

### + Economic Capital

How much capital do I need to set aside to cover my average worst case credit losses?

### + Riskiest Counterparties

Which counterparties do I need to allocate more capital against?

### + Expected Shortfall

What is the average of my worst case credit losses beyond a given confidence level?

### + Credit Provisioning

How can I establish an Incremental Credit Reserve (ICR) to protect against unexpected losses?

### + Diversification

How diversified is my credit portfolio? How can I ensure that one sector offsets the impact of another?

### + Average Loss

How much can I afford to lose from credit defaults at a given confidence level?

### + Pricing

How much should I expect to lose from credit defaults, given that I need to price these into my credit products as credit margins?

## Functional areas where Credit Risk Vantage delivers value:

### 1. Credit VaR for limit management:

Using the metric of Credit VaR for effective credit limit management will result in a scientifically proven single measure on the whole portfolio.

Credit limits can be specified on the Credit VaR measure at counterparty, group, country, industry or any user-defined grouping level.

### 2. Credit Portfolio Management:

Effective credit portfolio management by identifying and monitoring risky exposures, thereby managing concentration risk.

Risky exposures can be identified. Diversification can be managed by reducing concentration risk. Credit loss provisions can be established.

### 3. Stress Testing:

Scenario analysis can be used to manage the tail of the credit loss distribution. It is possible to simulate a downturn in the economy by increasing the default rates and default rate volatilities. Sectors can be shocked individually to see the impact.

### 4. Calculating Capital Requirements:

Estimating the capital required to protect against worst-case credit losses.

The worst-case credit capital requirement that banks need to maintain can be measured and the resulting statistics can be computed at any user defined aggregation level.

### 5. Basel II – IRB Approach:

The new Basel Capital Accord applies CreditRisk+ for granularity adjustment in the context of regulatory capital risk weights. This model has been recognised by the Basel Committee under the advanced IRB (Internal Ratings Based) approach.

The amount of capital required is closely monitored by regulators as the interests of the depositors have to be protected.

### 6. Input to Risk Return e.g. RAROC

Moving from a control oriented approach to value management using risk-return measures like RAROC.

Credit Risk Vantage can provide two of the key inputs to this approach:

- a. Contributory expected credit loss
- b. Contributory credit economic capital



Misys Credit Risk Vantage showcases an industry first Gamma Mixture model that captures extreme value risk and the dependence structures that emerge in times of crisis.



Developed by the Financial Engineering and Research team at Misys

## Misys Credit Risk Vantage - using advanced CreditRisk+ and incorporating the best of 4 models

### Panjer

- Original CSFP model
- Uses bucketing of obligors
- Rounding issues
- Numerically unstable
- Potential to overestimate risk

### Fast Fourier Transform (FFT)

- Also uses bucketing
- Less prone to rounding error
- More stable than Panjer
- Fast performance

### Saddlepoint

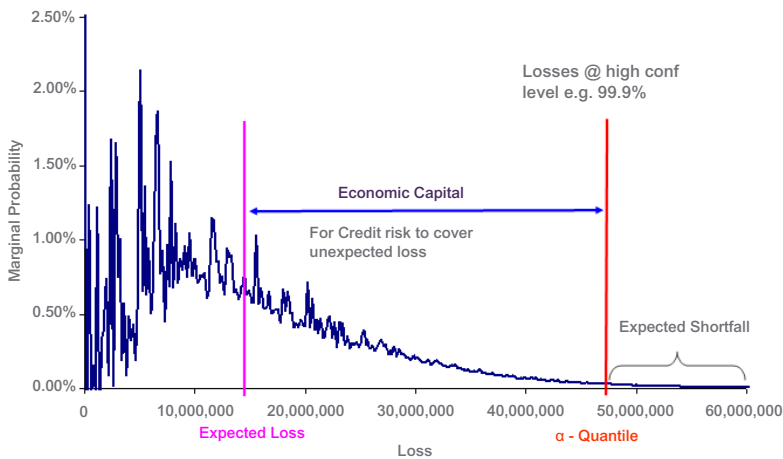
- Robust
- Good analytical approximation
- High performance
- High precision in results

### Monte Carlo

- High precision in results
- Fast but not as fast as other models
- Used as a benchmark to validate other models



## Risk Vision shareholder advantage approach



## What is so good about Credit Risk Vantage?

- + It is completely analytical (involves no simulations)
- + It requires minimal parameterization
- + It is based on a widely accepted model in the industry, (in particular by the Basel Committee)
- + Fast performance with accurate results
- + It computes key statistics from the multi-counterparty portfolio credit loss distribution
- + It captures counterparty default correlations and macro-economic dependencies

## What is unique about Credit Risk Vantage?

*It's uniqueness lies in its ability to integrate risk management into bank's daily operational activities*

**Most credit loss modelling tools are heavy weight, involve simulations, require powerful hardware, are time consuming to implement and are expensive.**

**Misys Credit Risk Vantage on the other hand is light, requires very few inputs and is built as a service so can be easily integrated to client's existing systems.**

For further information on Misys Risk Solutions, please contact:

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