



Razor Risk Technologies Limited

Integrated Market, Counterparty Credit, Liquidity Risk measurement and management with Capital Calculations and real-time reporting



October 2018

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Agenda



- Introduction to Razor Risk Technologies Limited
- Introduction to Razor (demonstration)
- Worked Examples
 - Counterparty Credit Risk/Limits & Excess Management
 - Liquidity Risk
 - Hedging Strategies
- Q & A

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Company Overview



Razor Risk founded in 1997; listed 2002 (ASX); part of TMX Group (2012/16)

Taken Private 1/1/2017

- A recognised, award winning vendor established in response to complex issues surrounding Risk Management
- Proactively measures the total exposure of financial institutions across all of their global / regional activities and offers both a proven risk solution and consulting approach
- HQ now in London; Core Development Centre in Sydney. Client support offices in Frankfurt, Singapore and Dubai

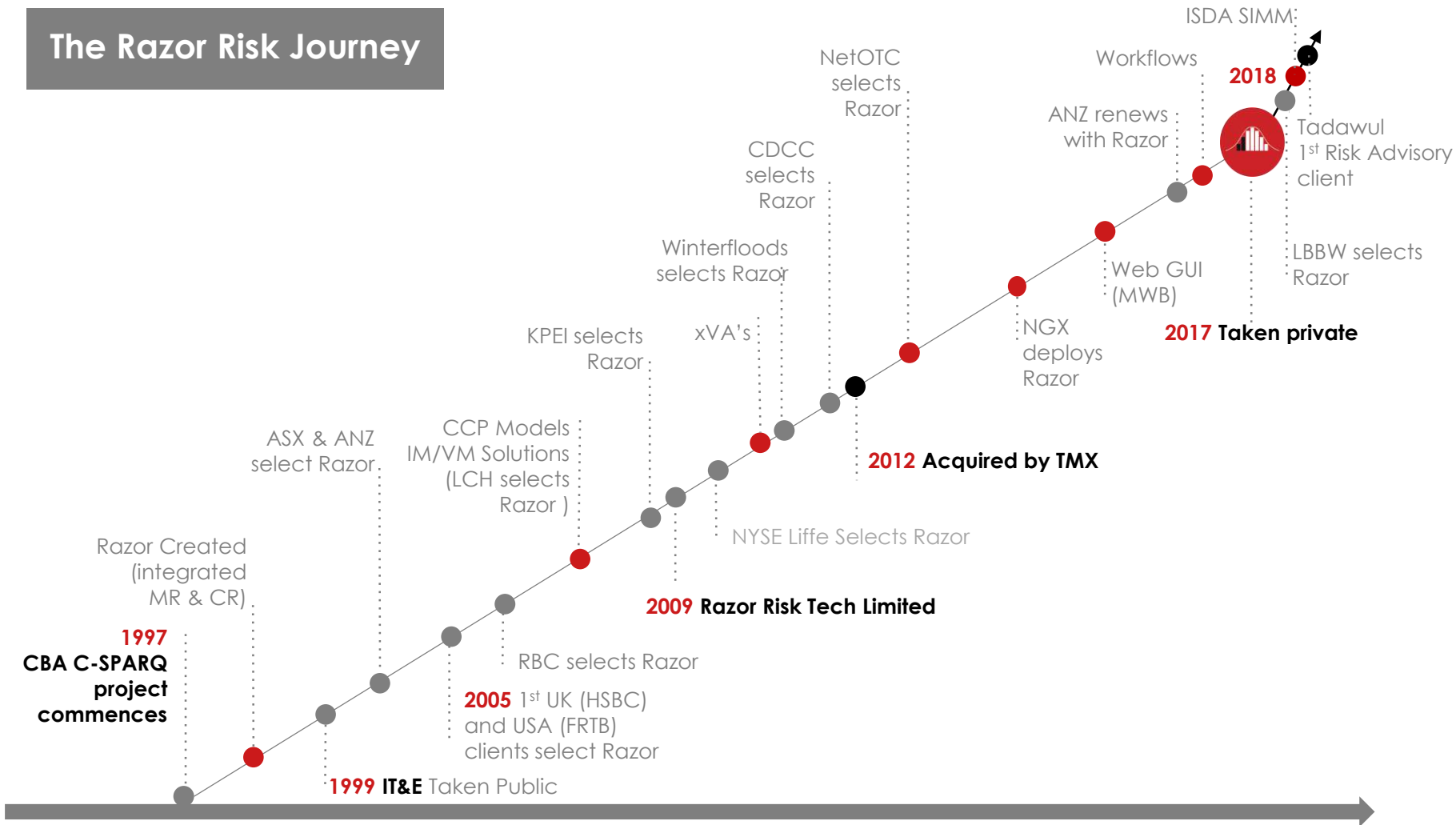
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20 years of experience



The Razor Risk Journey



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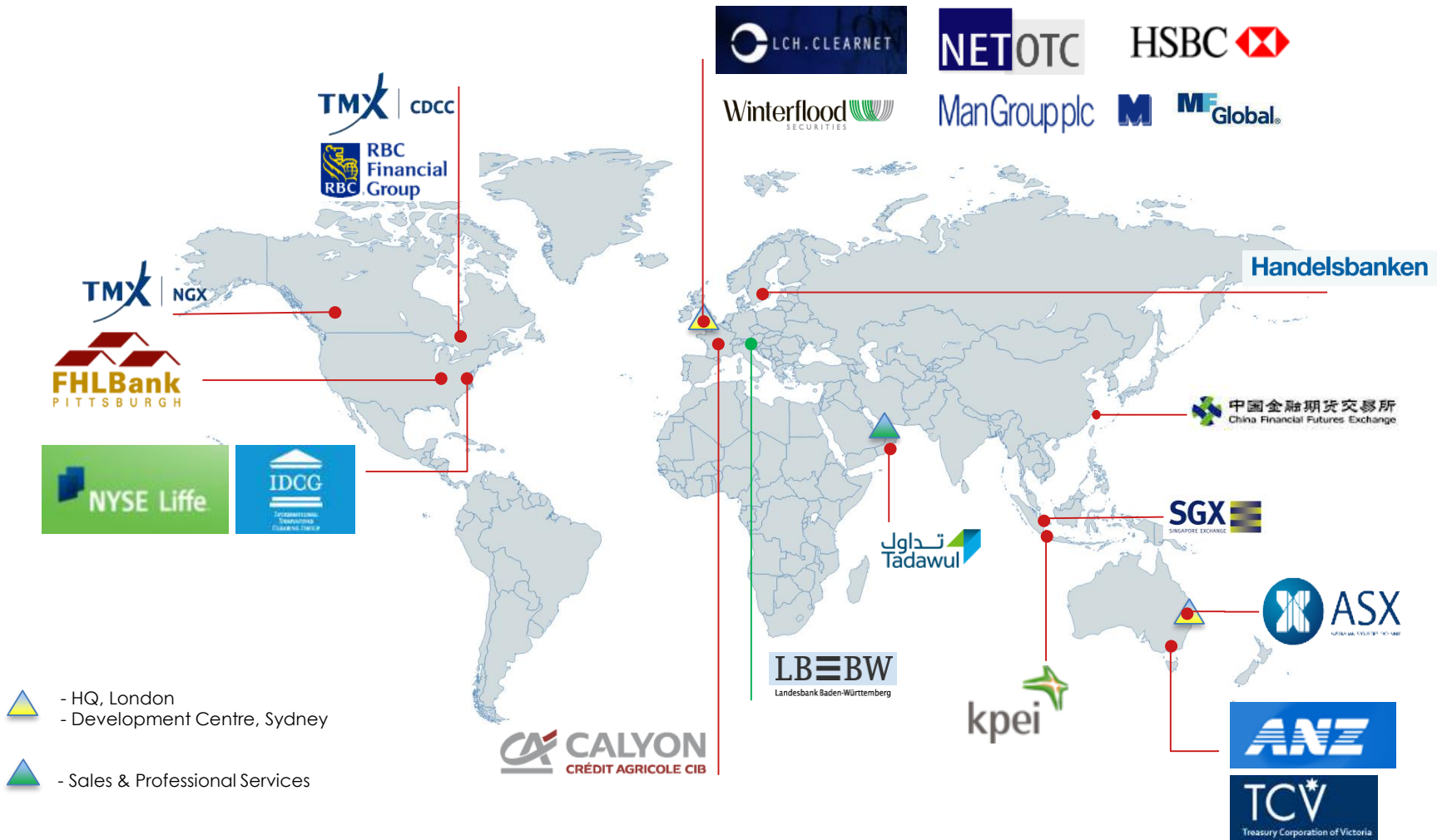
Razor Case Studies



- **Counterparty Credit Exposure Management:**
Global (73 countries), always on (24x7), 3,000 end users on-line,
60+ upstream/downstream systems connected
Real Time Alerts and Exception Management
- **Trading Risk Monitoring:**
Market Risk VaR and “Greeks” with position monitoring and reporting
- **Integrated Market Risk and Credit Risk (Global Trading Book):**
Internal Models adopted into Razor, self-maintained, always on (24x7), huge trade volumes
and positions managed in tight time-frames for real-time updates
Limits and real-time alerting
- **Limits Management across Trading/Banking books for Counterparty Credit:**
6 locations globally, centralised monitoring and control, integrated workflows, WEB GUIs
being rolled out, real-time monitoring and alerting for all breaches, always on (24x7)
- **CCP risk monitoring:**
 - i. Cash Markets, full Initial and Maintenance margining, regulated environment
(PFMI/IOSCO compliant)
 - ii. ETD Markets, integrated with external SPAN engines, high performing regulated
environment
 - iii. Default Fund Stress Testing and member maintenance

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Razor Clients



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Vision and Focus



- **Razor Risk Technologies Limited**

is a leading provider of risk management technology and consulting solutions to financial institutions worldwide.

- **We focus on**

providing fast, powerful and flexible solutions to current and future risk and capital management problems posed by the ever changing economic and financial world as well as the increasing demands placed on Financial Services Institutions by Governments and Regulators.

- **Razor**

is the risk framework we continue to develop and enhance and is the “cornerstone” of our go forward proposition

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Introduction to Razor

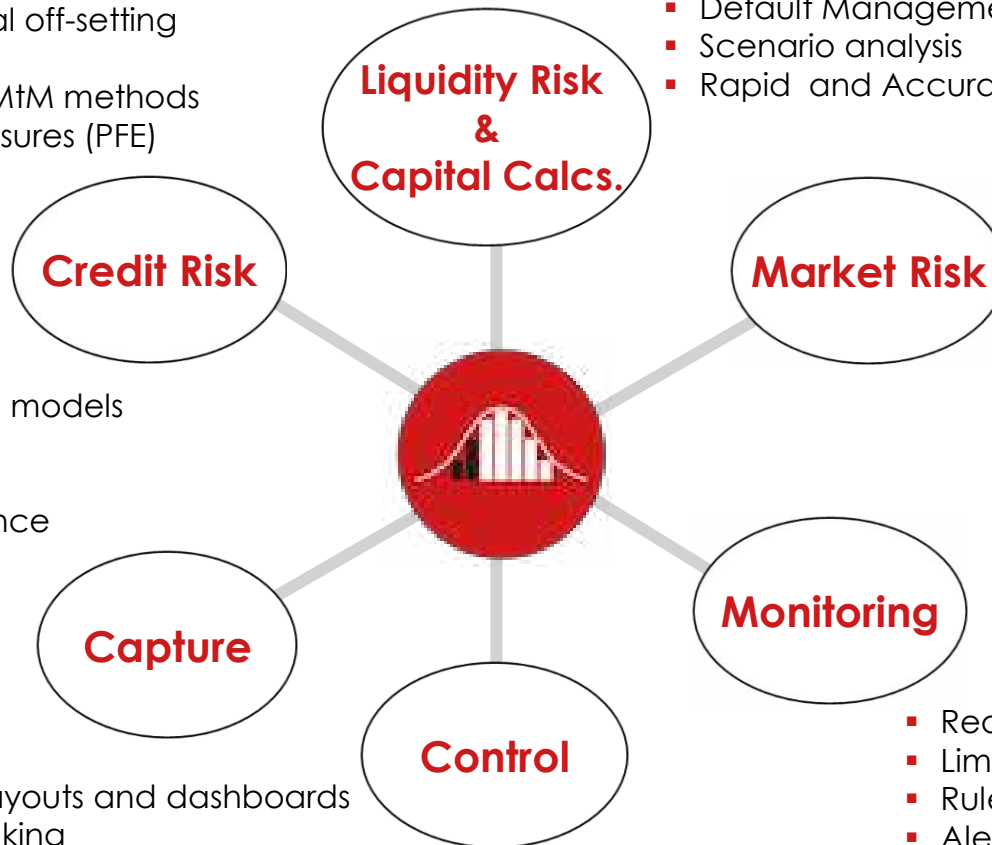
- Integrated Risk Framework
- Modular – “fit for your purpose”
- Topographical view
- Solution overview

Razor: Integrated Risk Management



- Portfolio and Hierarchy exposures
- Trade and position level drill downs
- Margin and Collateral pricing
- Netting & Collateral off-setting
- What-if Analysis
- Monte Carlo and MtM methods
- Counterparty Exposures (PFE)

- 24x7x365 risk monitoring
- Trading Risk, Greeks
- FRTB SA-SBA, IMA (PnL Attribn, Stress/Back Tests)
- Default Management
- Scenario analysis
- Rapid and Accurate reporting



- Cross Asset classes
- Internal and external models
- Portfolio Effects
- Correlation Effects
- Regulatory Compliance

- Stress Testing
- Scenario Analytics
- Sensitivity Analysis
- IM & VM,
- SIMM
- HS VaR, MC VaR
- SPAN + other arrays
- Intra-day Market data updates

- GUI, tailored layouts and dashboards
- Pre-Deal Checking
- Full trade level drill – down
- Aggregation to (any) required levels
- Real-time and time series reporting

- Real Time
- Limits & Excess Management
- Rules Driven
- Alerting
- Workflows
- Back testing
- Reporting

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Razor Modules - Overview

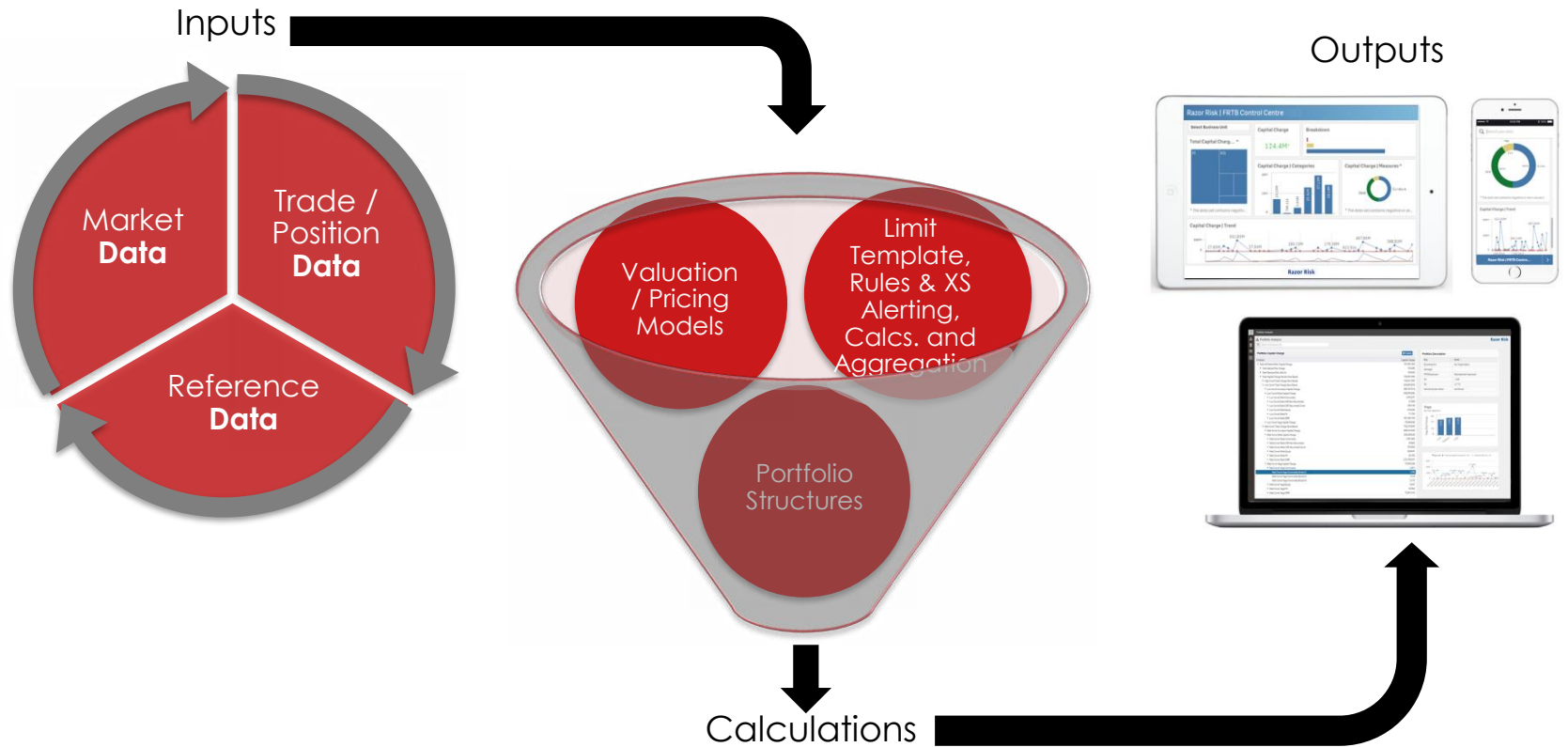


Key Attributes

- **Fully Integrated**, all risk from one 'code-base', unique proposition to enable modular roll-out to full enterprise capabilities
- **Highly flexible** solution, designed to be a framework in which internal models, processes, structures and rules can be accommodated alongside proven, robust Razor components
- **Configurable** to fully meet internal and regulatory risk management requirements
- **Full drill-down** to the Transaction or Scenario detail to analyse all risk results
- Incremental processing of any amendments for **real-time** analysis
- **No limit** to defining aggregation dimensions, incorporating Internal, Customer, Product or User-defined hierarchies
- **Exceptional flexibility** in defining aggregation rules that allow portfolios to feed into other portfolios based on rules specific to the business requirement
- Allows **full transparency** of all items included in the system for ease of audit, governance, reporting and compliance
- An **open API**, use of well-known standards e.g. FpML, XML, TC/IP
- Functional components **sit inside existing IT infrastructures** connecting to many/various upstream and downstream solutions
- WEB Services and open APIs **streamlines data** between source/target systems
- Managed and maintained by the client, **supported by a 24x7 Razor support team**

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Razor: “Fit for your purpose” deployment Razor Risk



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Razor Demonstration

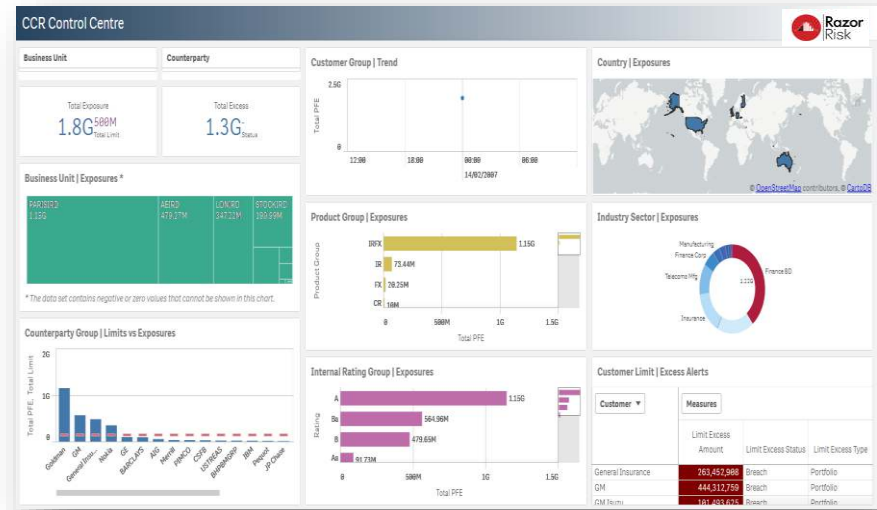
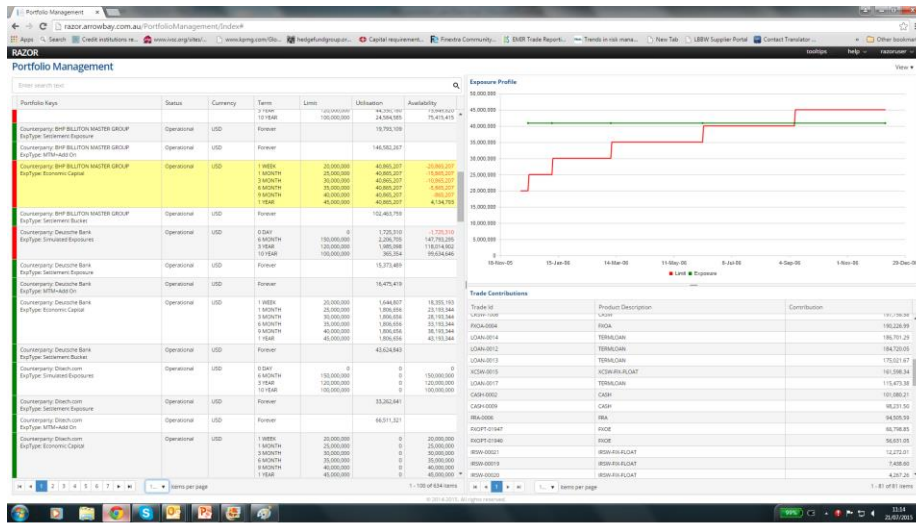


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Q & A



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