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WHAT'S YOUR POSITION?

The Well Managed Bank

Financial and Risk Efficiency

Nicholas Brewer

1st December 2009

The Market Background

- Banks are re-assessing their business fundamentals:
  - How to maximise long term profitability, taking risk into account
  - What kind of relationship they should have with their customers
  - How to leverage key assets to satisfy profitability and customer service
- This can be restated as the question "How does a bank see itself?"
  - A prudent, well-managed institution looking for long term survival and growth, taking advantage of opportunities as they become apparent
  - A short-term focussed institution looking for rapid expansion and immediate market share grab
- It is our belief that most banks now aim to be a "Well Managed Bank"

The Well Managed Bank

- Banks need to renew their focus on their core assets:
  - Customers
  - Staff
  - Capital

- The goal is to:
  - Maximise efficiency of asset use
  - Increase bank profitability from the assets
  - Decrease financial and operational risk around the assets

- Banks need to:

Have a timely, accurate and relevant view of these assets

Ensure that assets are correctly deployed and resulting financial returns and outcomes are appropriately measured and reported

SunGard's Ambit – what is it?

- SunGard's Ambit is a suite of applications centred around banking
- In 2008, SunGard engaged with some of its banking customers.
  - Banks seek to engage with as few vendors as possible. A very broad solution suite from a single vendor helps them to achieve this.
  - Solution components need to be deployable on a rolling basis, working with existing and 3rd party components already deployed.
- SunGard's Ambit brings together of several applications from SunGard's product portfolio:
  - "Best of breed" systems in a common commercial and technology focus
  - Common product management focus
  - Emerging common architectural approach
  - Leverage key SunGard assets from the Infinity suite
  - Pre-integration guided by commercial interest

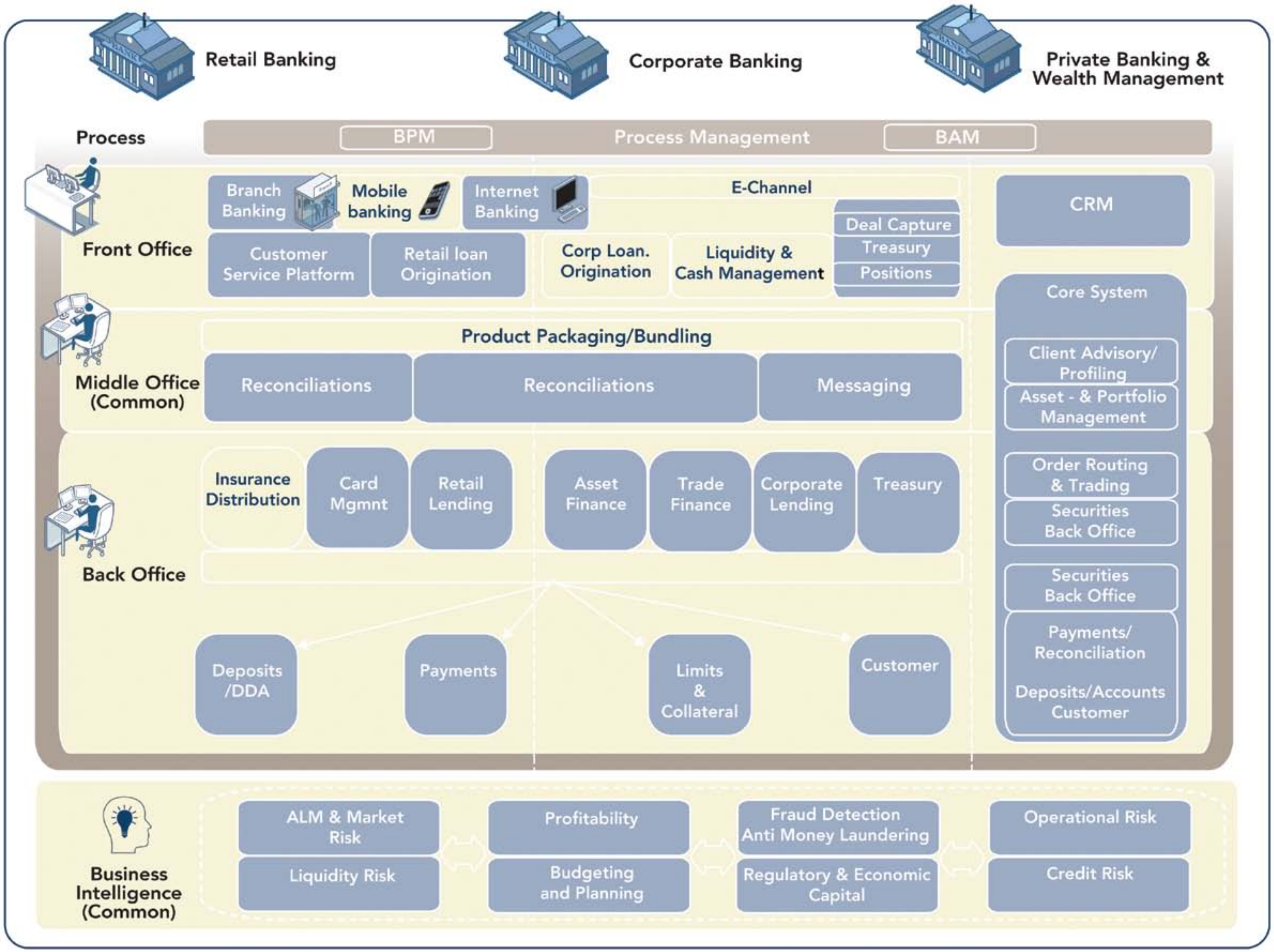
SunGard Ambit - History

- Launched April 2008
  - As a focus for SunGard solutions to the Banking market
  - Driving SOA principles for new and existing solutions
- Delivery plan
  - Team in place September 2008
  - Deliveries driven incrementally according to commercial opportunities
  - Evolution rather than Revolution
  - Leveraging SunGard technology and architectural assets from the Infinity suite

SunGard Ambit – Status Update

- Central Ambit-level organisation in place
- Ambit AML now deliverable with Ambit Core Banking (announced December 2008)
- Ambit EBS launched September 2009
- The Well Managed Bank launched December 2009
  - Next step in combining Ambit components into useful solution packages
  - Accelerated focus on SOA principle roll out
  - Initial packages include
    - Ambit Customer Service Platform and Profitability
    - Ambit Private Banking and Profitability
    - Ambit Treasury an Asset Liability Management
    - Ambit Private Banking and CRM
    - Ambit Credit Risk Management and Risk Consulting

Banking Components



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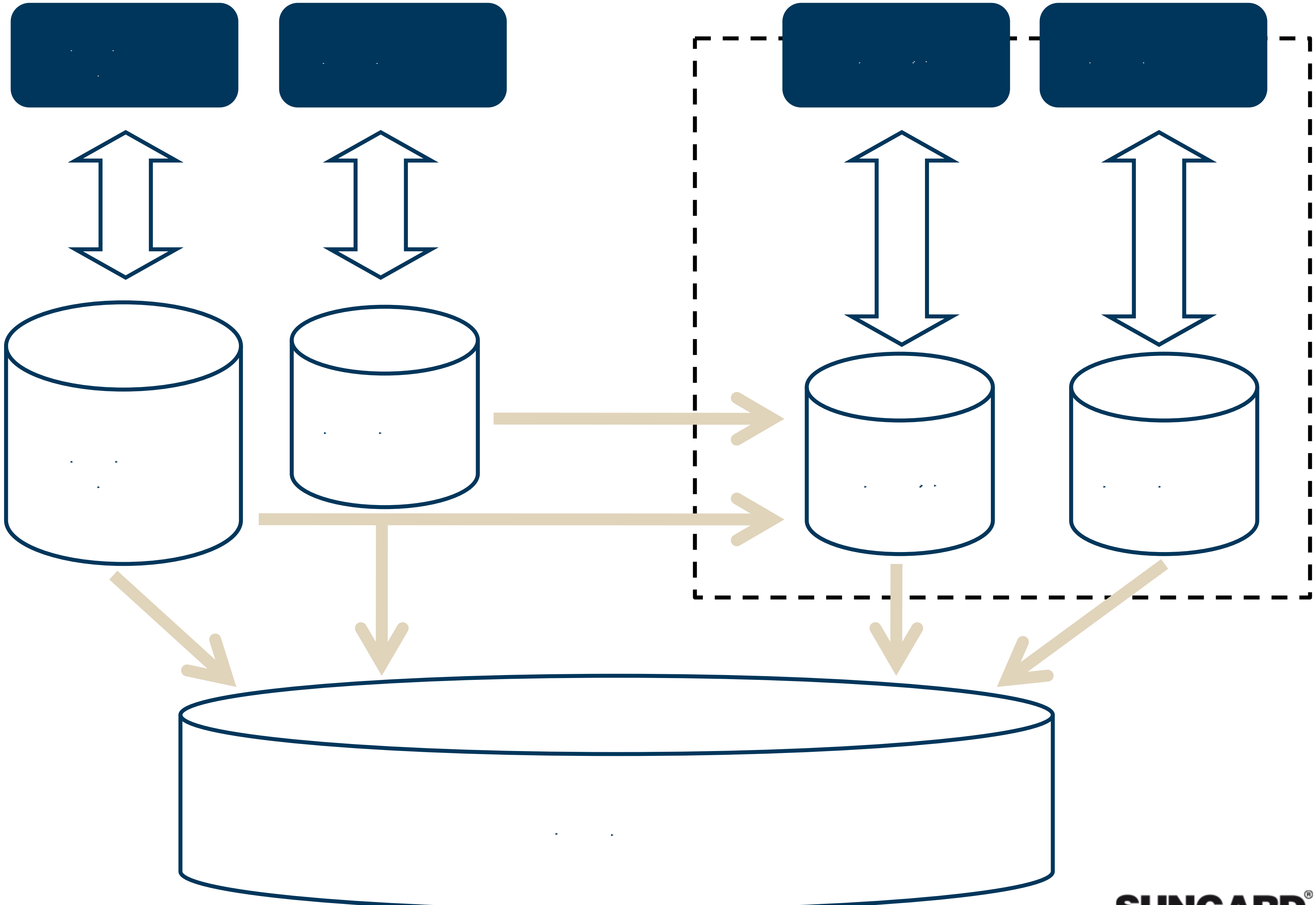
Solution Overview

- Banks need to manage their market exposures.
  - Market exposures arise out of activities in their banking and trading books
  - Some are short term and volatile, others are longer term and more stable
- Banks need to offer their customers a wider range of instruments at consistent service levels
- Transparency
  - Understand short term financial positions in real time
  - Understand periodically how the bank's assets and liabilities are structured
  - Simulate future financial streams (eg income)
- Efficiency
  - Using a wide range of financial instruments increases financial efficiency
  - Enabling STP transaction processing to maximise operational efficiency

Potential Use Case



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Solution Example

Jamal Saleh
Head of Risk Management

Commercial Bank of Dubai

Ambit Treasury

"We now have a very high level of **STP** from the deal all the way through the system."

Ambit ALM

"...we can now create reports that integrate the **right information** from the relevant systems enabling us to see the business like never before."

Integrated Solution

"Ambit helps us pull data from our treasury operations and integrate it into our ALM process, thereby **enhancing our trading and risk operations**".

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Confidentiality Statement

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WHAT'S YOUR POSITION?

The Well Managed Bank

Customer Service Platform & Profitability

Nicholas Brewer

1st December 2009

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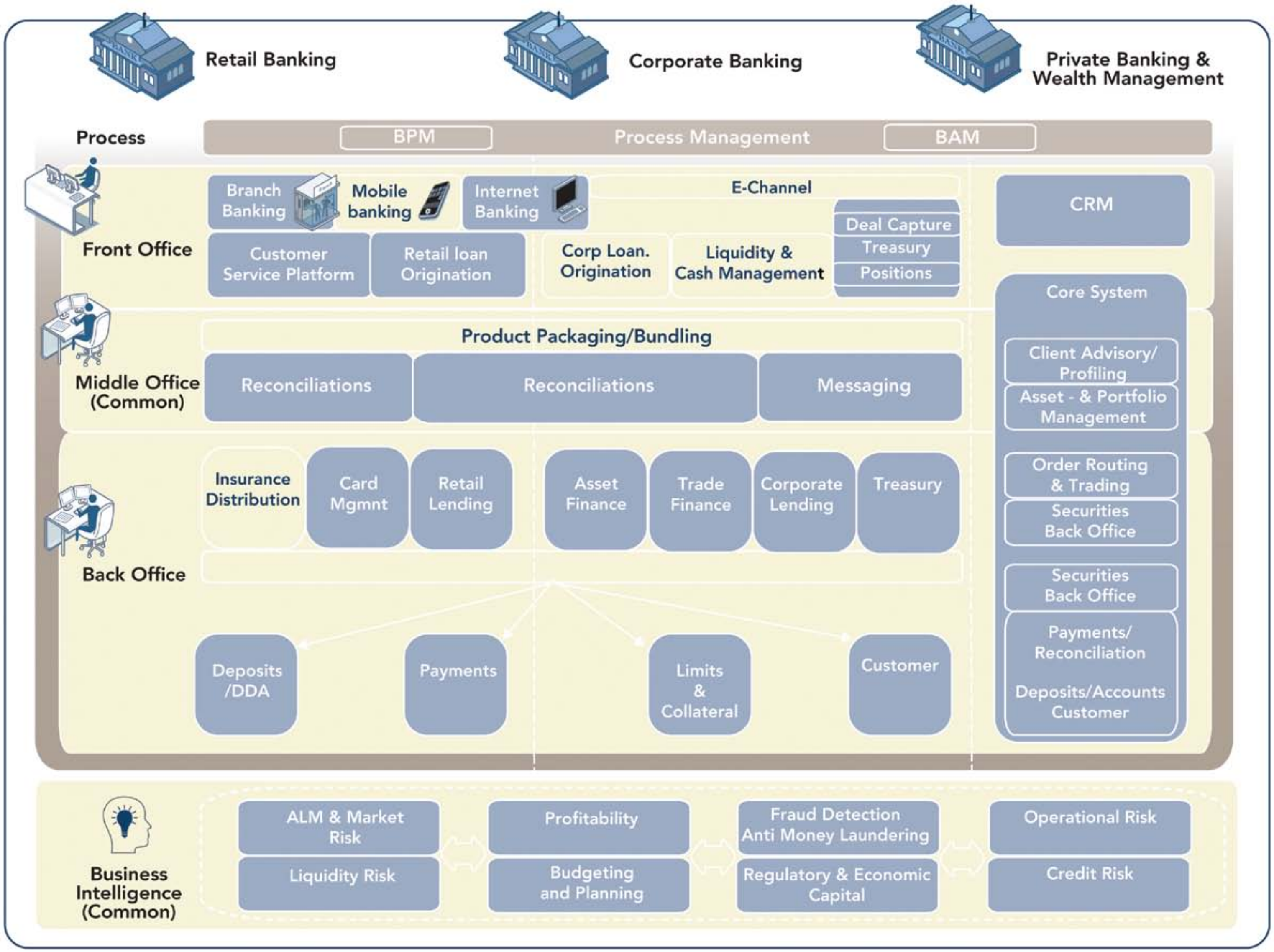

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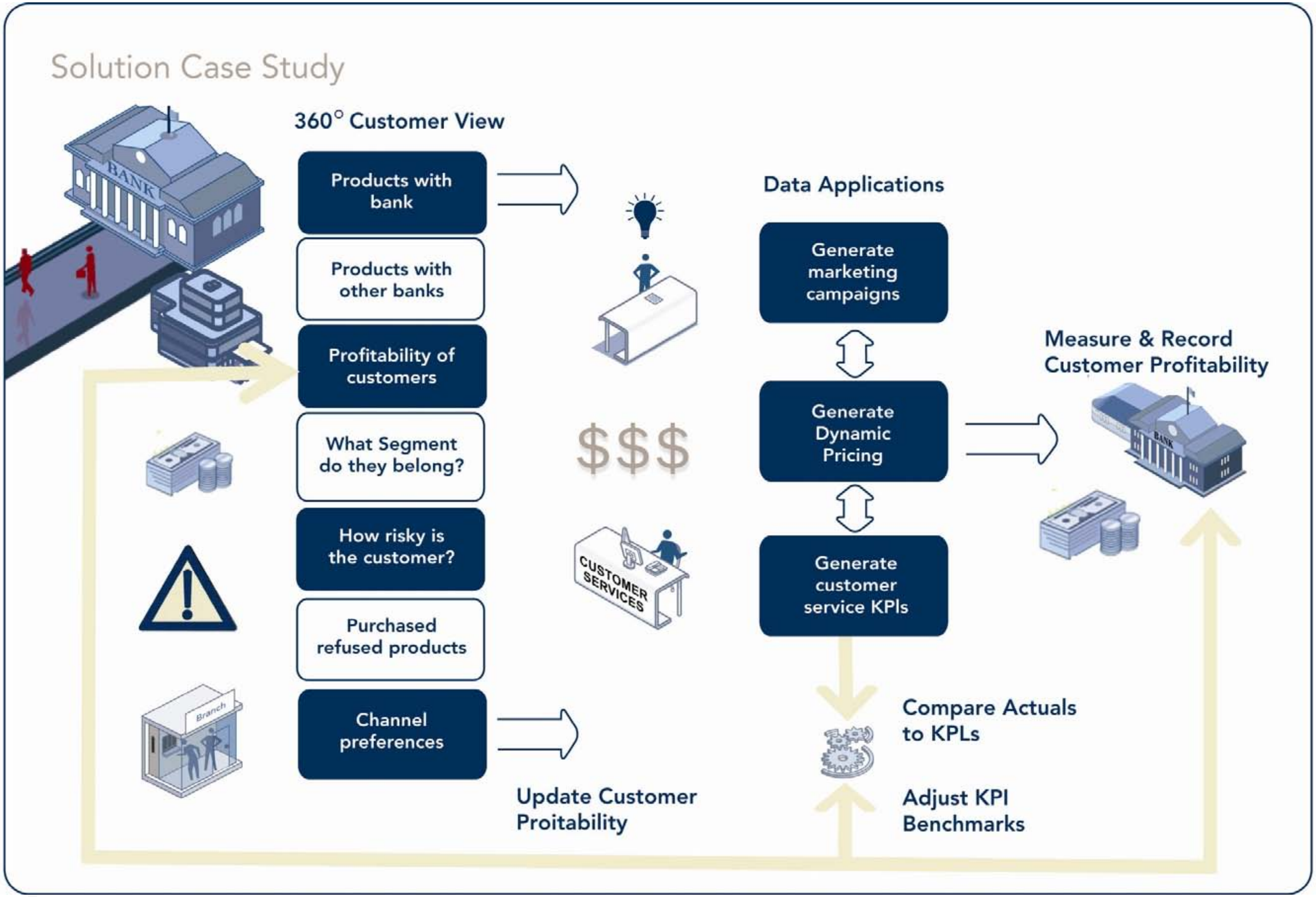
Solution Overview

- Banks focus on their customers
  - To increase customer satisfaction
    - Increase wallet share
    - Decrease attrition
    - Increase informal positive reference
  - Aiming to boost long term profitability
- Banks traditionally measure customer service
  - Average process waiting time
  - Case resolution statistics
  - Campaign success rates
  - &c...
- Banks should focus on
  - Customer Centricity
  - Customer Profitability

Solution Overview

- Transparency
  - Understand customer 360º view
  - Maintain accurate customer segmentation
  - Measure customer profitability
    - Individual
    - Group
    - Segment
- Efficiency
  - STP in front office as well as back office
  - Focused concentration of human interaction around revenue maximising opportunities
  - Efficient case management and issue routing

Solution Case Study



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Solution Example

- UBL
  - Established 1959
  - Focus on Retail Banking – 112 Branches
  - Revenue (2008) USD 364m
- Ambit EBS
  - “The SOA architecture, dynamic workflow and business process management offered by SunGard’s Ambit Enterprise Banking Suite will give us the ability to overhaul our IT infrastructure” – Adnan Masood, Project Director Core Banking
- Focus on the Customer
  - “It will help to improve our productivity, enhance our customer service and increase customer profitability**”** - ibid

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WHAT'S YOUR POSITION?

The Well Managed Bank

Loss Forecasting and Economic Capital

Chris Tobin, Senior Consultant, Ambit Risk and Performance Consulting

Tuesday, December 1st, 2009

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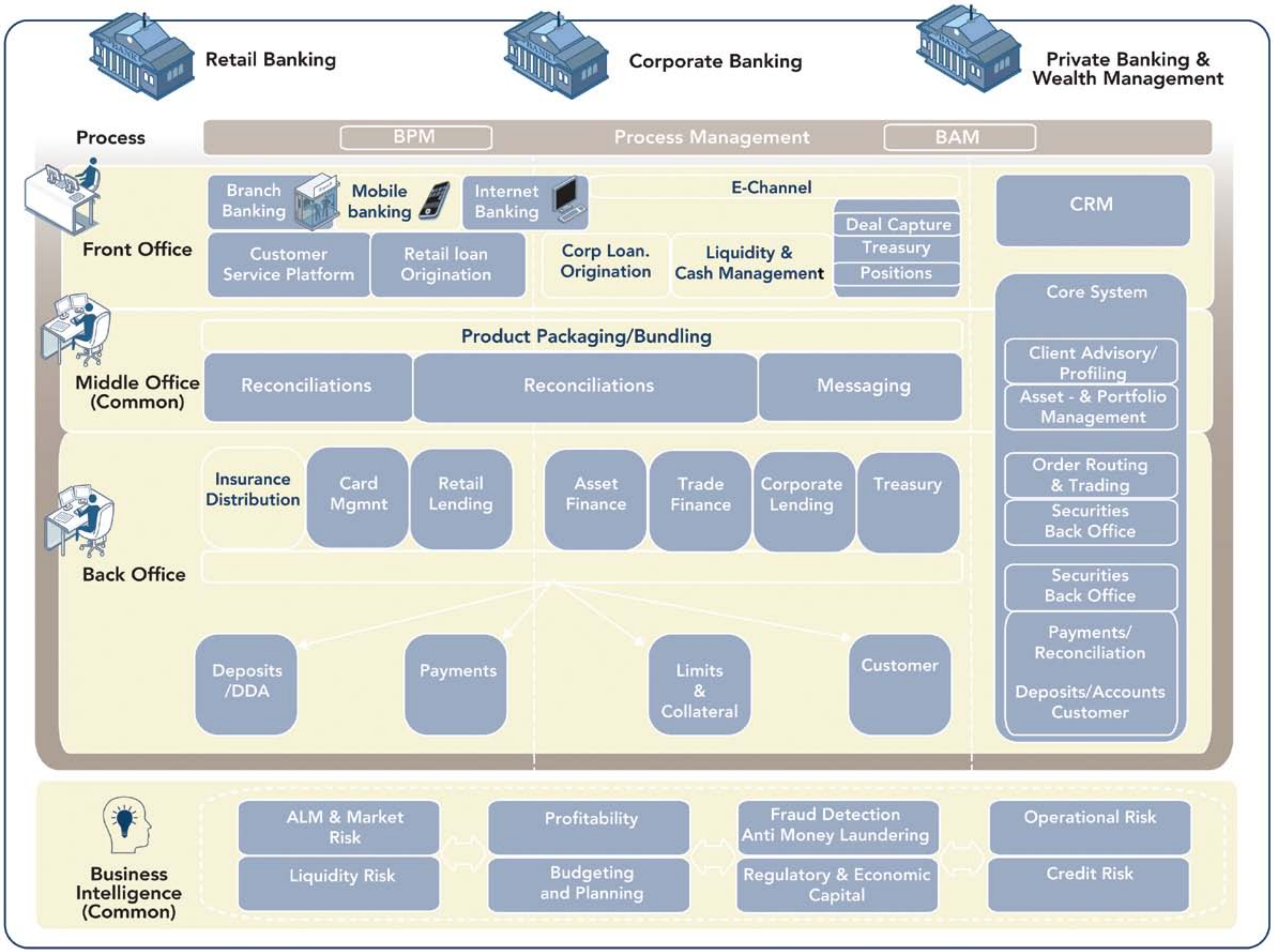

Background

- The financial crisis has resulted in greater focus on a bank’s need for accurate loss forecasts and risk estimates:
  - What is a robust estimate of losses given our business model and the state of the economy?
  - What level of capital is required for the uncertainty around this estimate of loss given our risk exposure and portfolio concentrations?
- Standard practice for obtaining these estimates has proven inadequate in this strained time
  - Judgmental and historic loss ratios have tended to encourage imprecise pro-cyclic loss estimates
  - The simplifying assumptions inherent in regulatory capital rules can at times overlook critical concentrations and risks and at other times overstate the capital requirement
- It is our belief that a well-managed bank is well-served by objective and rigorous loss models that incorporate the specific concentrations and idiosyncrasies of their business as well as the macroeconomic environment

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Impact of EC and Loss Forecasting Models

- **Securing competitive advantage**: against banks that are currently using EC and have entered or are planning to enter current markets. Improving results by driving growth into high performing segments
- **Monitoring and managing risk**: driving a wide range of other processes including ALLL, capital limit setting, concentration management, risk based profitability and pricing, and compensation structures
- **Strengthening regulatory reporting**: proactively adopting the approaches favored by all regulators and, likely, future mandatory requirements
- **Improving management information system**: tracking and storing the data that is used to quantify the bank's current risk position

Credit Risk Overview

Loan Level

Portfolio Level

Spreading

Risk Rating Models
- Borrower Rating
- Collateral Rating
- Segment
  - Retail / SME
  - CRE
  - C&I

Risk Adjusted Pricing
- Margin Analysis
- Cost Allocation
- Cost of Capital
- Loan Pricing

Credit Risk

Operational
- Credit Quality Monitoring and Reporting
- Sector Exposure Analysis (region, industry)
- Limit Report (counterparty / portfolio)
- Risk Adjusted Profitability

Tactical
- Loan Loss Forecasting & Provisioning (expected loss)
- Capital Planning (unexpected loss)
  - Regulatory Capital / Economic Capital
  - Available Capital
- Stress Testing
- Credit Risk Mitigation
  - Limit Setting
  - Risk Transfer

Strategic
- ⇨ Risk Taking Capacity
- ⇨ Risk Appetite

Regulatory Capital
- Credit Risk
  - Standardized
  - IRB
- Credit Risk Mitigation Allocation
- Regulatory Reports

Economic Capital
- Credit Portfolio Modeling
- Risk Aggregation
- Capital Allocation

Credit Risk Parameter Estimation
- Scoring Model
- PD Calibration
- LGD Calibration
- Default Correlation
- PD / LGD Correlation
- LGD Volatility

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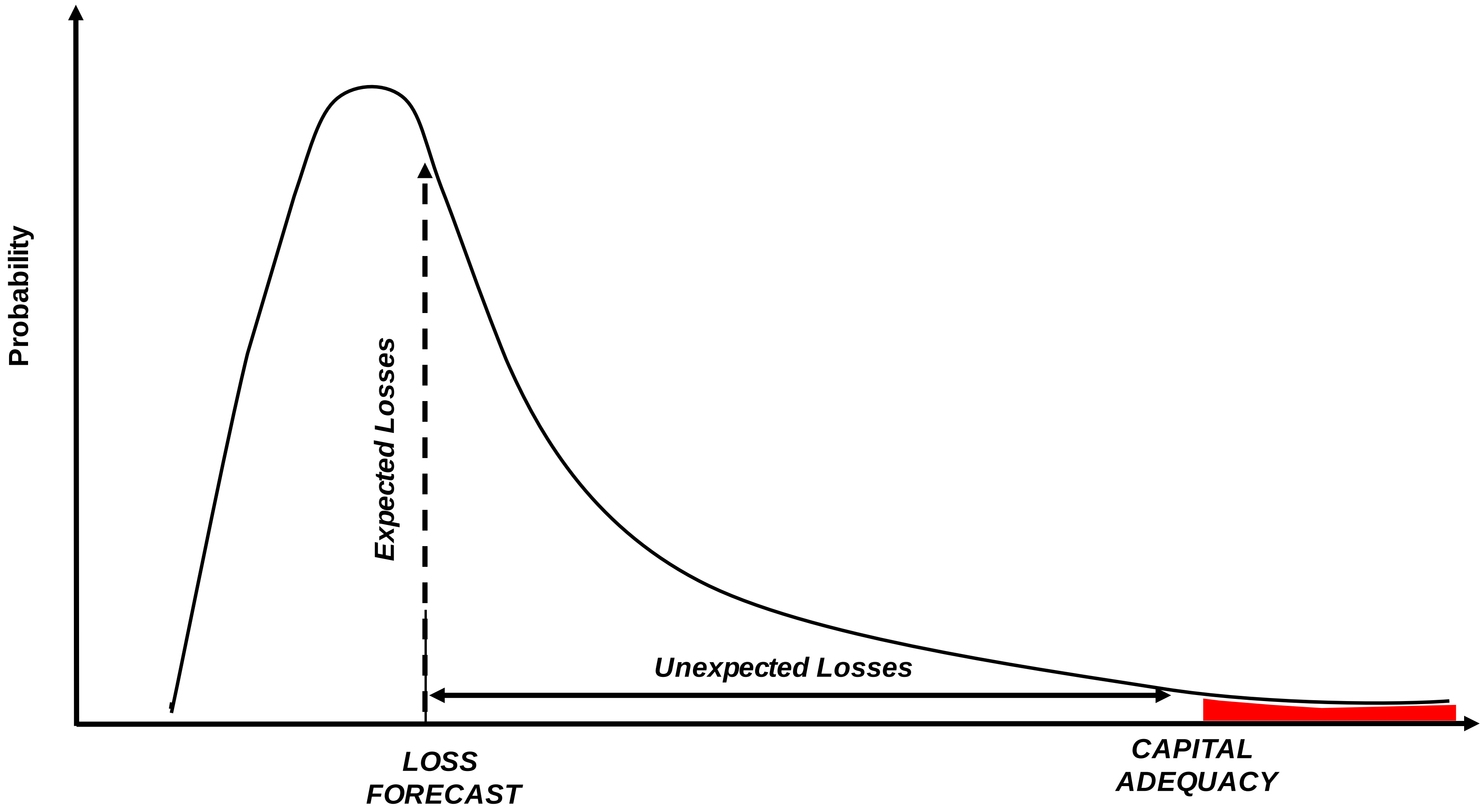
We help banks answer two major questions

- **Loss Forecasting**: Based on my different borrowers' financials and collateral, what can I expect my loan/lease losses to be in the next 12 months?
- **Capital Adequacy**: Based on my risk profile and solvency standard, how much capital do I need to sustain unexpected losses in the next 12 months?

This is graphically illustrated below



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Loss Forecasting

Challenge:

- Banks require forward-looking estimates of how their risk profile is changing as market conditions change and a process to integrate estimates into an ALLL model that will meet regulatory and accounting standards

Solution:

- SunGard creates point-in-time estimates of Exposure at Default, Probability of Default, and Loss Given Default for each of the bank's customers / facilities as they vary with such dynamic factors as unemployment rates, interest rates and housing prices.
- SunGard uses one of two approaches to calculate provisions and reserves: 1) a one-year loss cushion or 2) a multi-year expected loss calculation

Benefit:

- Tools allow a bank to accurately generate loss forecasts and pinpoint sectors of the portfolio that are high risk depending upon current economic conditions
- Enables bank to generate accurate provision and reserves for possible losses

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Best Practice requires clear separation of PD and LGD to arrive at a loss forecast

- **Dual risk rating scales clearly distinguish between the two components of Expected Loss: PD and LGD**
- **Rating combinations can be linked to a master scale of expected loss rates**

Risk Rating	PD	Collateral Rating (LGD)					
		A	B	C	D	E	F
		10%	20%	30%	40%	50%	60%
1	0.26%	3 bps	5 bps	8 bps	10 bps	13 bps	16 bps
2	0.34%	3 bps	7 bps	10 bps	14 bps	17 bps	20 bps
3	0.42%	4 bps	8 bps	13 bps	17 bps	21 bps	25 bps
4	0.53%	5 bps	11 bps	16 bps	21 bps	27 bps	32 bps
5	0.57%	6 bps	11 bps	17 bps	23 bps	29 bps	34 bps
6	0.66%	7 bps	13 bps	20 bps	26 bps	33 bps	40 bps
7	0.74%	7 bps	15 bps	22 bps	30 bps	37 bps	44 bps

Loss forecasting model

CRE Risk Rating Model

Clear Data | RUN

General Information

Loan Type	CRE
Participation / Bank holds less than 100% of Total Project Debt	Yes

PROJECT SPECIFIC PARAMETERS

Amount of Interest Bearing Project Debt	100,000	
Amount of Total Debt Senior to Bank	50,000	
Amount of Debt Pari Passu to Bank (Including Bank's loan)	50,000	
Property Value	120,000	
Property Type	Industrial	
Original Loan Term (Months)	60	
Remaining Loan Term (Months)	12	
Fixed/Floating	Fixed	
Current Index Rate & Index	3.00%	Libor
Weighted Spread for Total Project Debt	3.00%	

PROPERTY PARAMETERS

Line Utilization	100%		
Occupancy Rate	80%		
% Renewing During The Year	85%		
Property Size (Total SF or UNIT)	700		
Rental Rate Per SF or UNIT (Year)	$ 50		
Other Income Depending on Occupancy Rate (Per SF or UNIT)	$ 5		
Other Income Not Depending on Occupancy Rate (Year)($)	$ 1,000		
Management Fee: % of Revenue or Fixed Amount?	% of revenue	Fixed amount $	
		% of revenue	**3.00%**
Total Expense (Fixed and Variable) Including Capex Excludes Management Fee	$20,000		
Variable Expense % to Total Expense	10%		

Current Revenue	31,800
Expenses	20,954
Total Debt Payment	6,000
Income - Expense	10,846
Income - Expense - Total Debt Payment	4,846

MACRO-ECONOMIC PARAMETERS

Current Year NCO%	0.44%
Previous Year NCO%	0.17%
Annual % Change in Unemployment Rate	29.75%
National Capitalization Rate	6.53%

Avg. Predicted NCO%	2.15%
Cycle-Avg 1987-2006	0.89%

Debt Service Coverage	**1.81**
Loan to Value (%)	**83.33%**

PD Base Grade

	Cycle-Neutral	Cycle-Adjusted
Internal Risk Rating	**6**	**8**
PD	**0.97%**	**2.34%**
Public Rating	**BB**	**BB-**

LGD Base Grade

Facility Rating	**7**
LGD	**36.87%**

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Benefits to our approach

- **Comprehensive**: Includes forecasts for retail, C&I, CRE and Construction
- **Accurate**: Uses our benchmark data with bank's internal data
- **User Buy-in**: Includes feedback from loan officers / underwriters
- **Transparent**: Provides transparency of formulas - no "black boxes"
- **Other Features**:
  - Quantitative and Qualitative variables
  - Though the Cycle vs. Point in Time
  - Validated and calibrated to individual bank's experience
  - Maps to public debt ratings
  - We include a stress testing model

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Case Study 1:
Improving the Provisioning Process

- **Objective**: The client was under pressure from its regulator to increase its provisions for credit losses every quarter because other banks were doing so. The bank's defense that its provisions were sufficient were weakened by its use of outdated benchmark data and subjective rather than quantitative considerations. SunGard was asked to perform the analysis that would assess the provisioning requirement in a more defensible way.
- **Return on Investment**: Relative to a prior analysis, $5 Million less in provisions was made and accepted.
- **Client**: Middle-sized US Bank, ~ $20 Billion in assets

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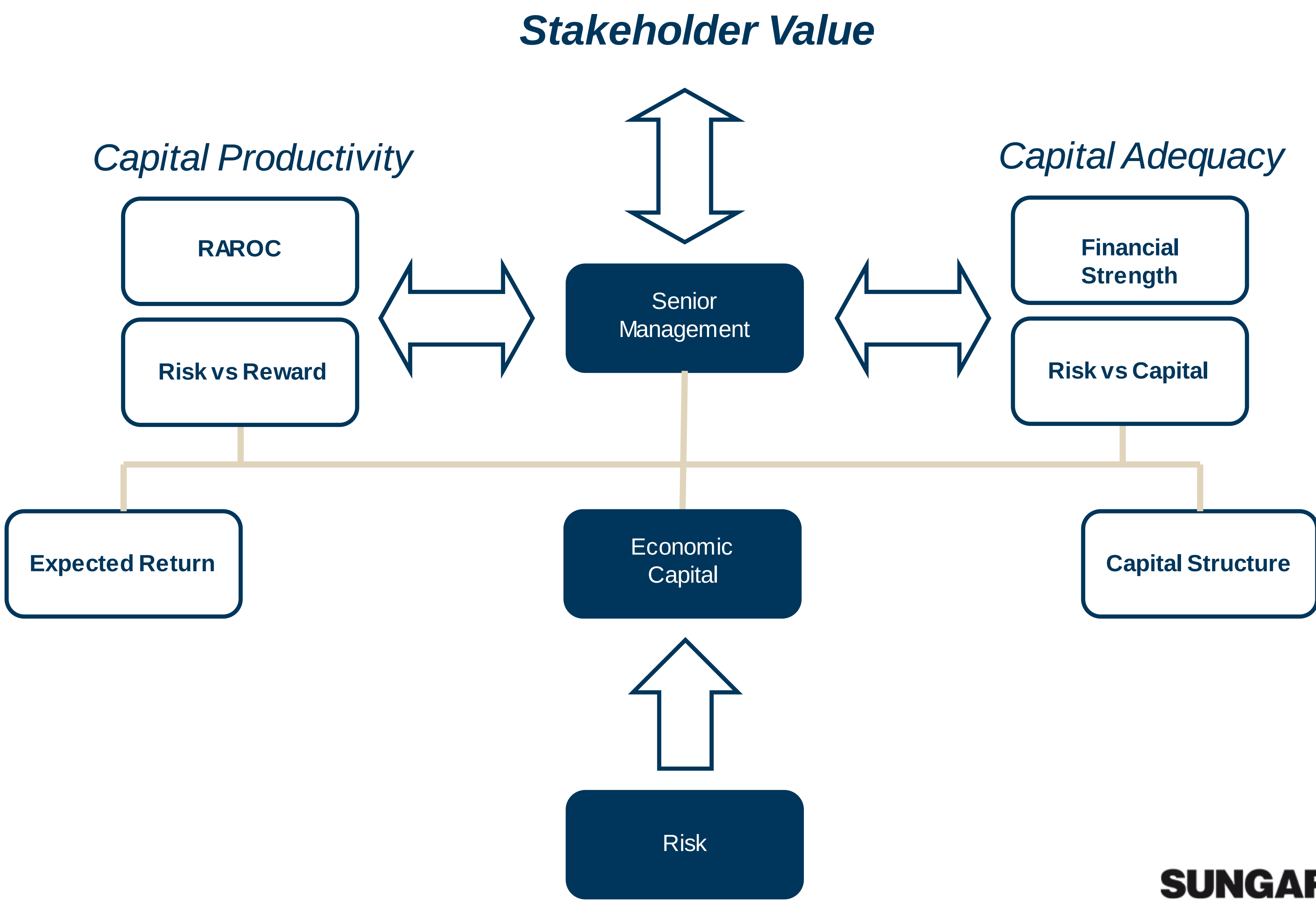
EC helps firm manage link between earnings, risk, and shareholder value



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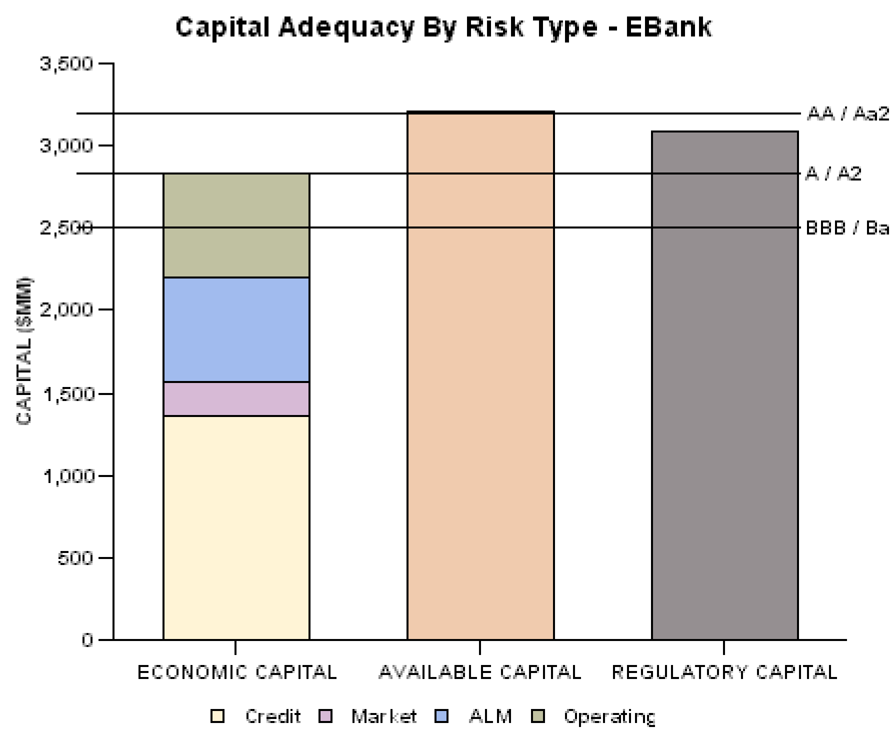
Capital adequacy model

Credit Capital Inputs

1. Loss forecast
2. Concentrations/Correlation
3. Effective Maturity

Interest Rate Risk

1. MVE & Gap Report
2. Volatilities/Correlations
3. Duration



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Benefits to our approach

- **Enterprise Wide**: Includes credit, market and operational risk
- **State of the Art Analytics**: Includes risk diversification benefits, concentrations and correlations
- **Customized**: Assumptions and inputs are tailored for each client
- **Not a Simulation**: Results are generated within 30-60 minutes
- **Other Features**:
  - PD-LGD correlation
  - Non default risk
  - Name and portfolio concentrations
  - Loan Level allocation
  - Comprehensive reporting
  - ASP hosted solution

Case Study 2:
Minimization of Capital under ICAAP

- **Objective**: For a bank using the Standardized Approach and having relatively little data, to accurately assess, within a very short timeframe (< 1 month), the strength of a bank's argument to its regulator that minimal additional capital under Pillar 2 was required, and perform analytics to strengthen the arguments in the existing report where necessary
- **Return on Investment**: Relative to a prior assessment, $20 Mn of credit risk Capital, $10 Mn in market risk capital was reduced in the final report.
- **Client**: Middle-sized European Bank, ~ $50 Billion in loans

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Ambit Risk and Performance Solution Overview

Risk Adjusted Performance Management

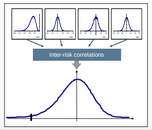
Profitability Analysis
RAROC

- Margin Analysis
- Cost Allocation
- Cost of Capital
- Loan Pricing

Risk Mitigation

Capital Management
Regulatory & Economic Capital

- Capital Adequacy
- Risk Aggregation
- Stress Testing

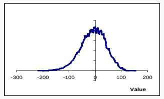


stand-by liquidity buffer

Management and Quantification of Risk

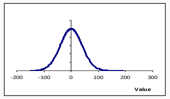
ALM

- Earnings Simulation
- Maturity Mismatch Risk
- Hedge Management
- Funding Optimization



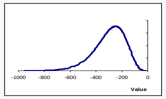
Market Risk

- VaR
- Stress Testing
- Backtesting



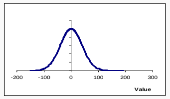
Credit Risk

- Counterparty Exposure Management
- Credit Portfolio Modelling (CVaR)



Op Risk

- Risk Assessment
- Loss DB
- Mitigations / Controls



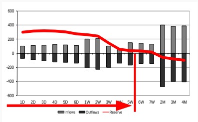
AML

- KYC & CDD
- Transaction Monitoring
- Case Management
- Regulatory Reporting

Liquidity Risk

- Cashflow Projection
- Stress Scenarios
- Funding Diversification
- Contingency Funding Plan

⇨Survival Horizon



Data Validation Consolidation

Data Management
Validation – Consolidation – Enrichment – Transformation

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