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WHAT'S YOUR POSITION?

Asset Arena Risk

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1 December 2009

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Objective of Presentation

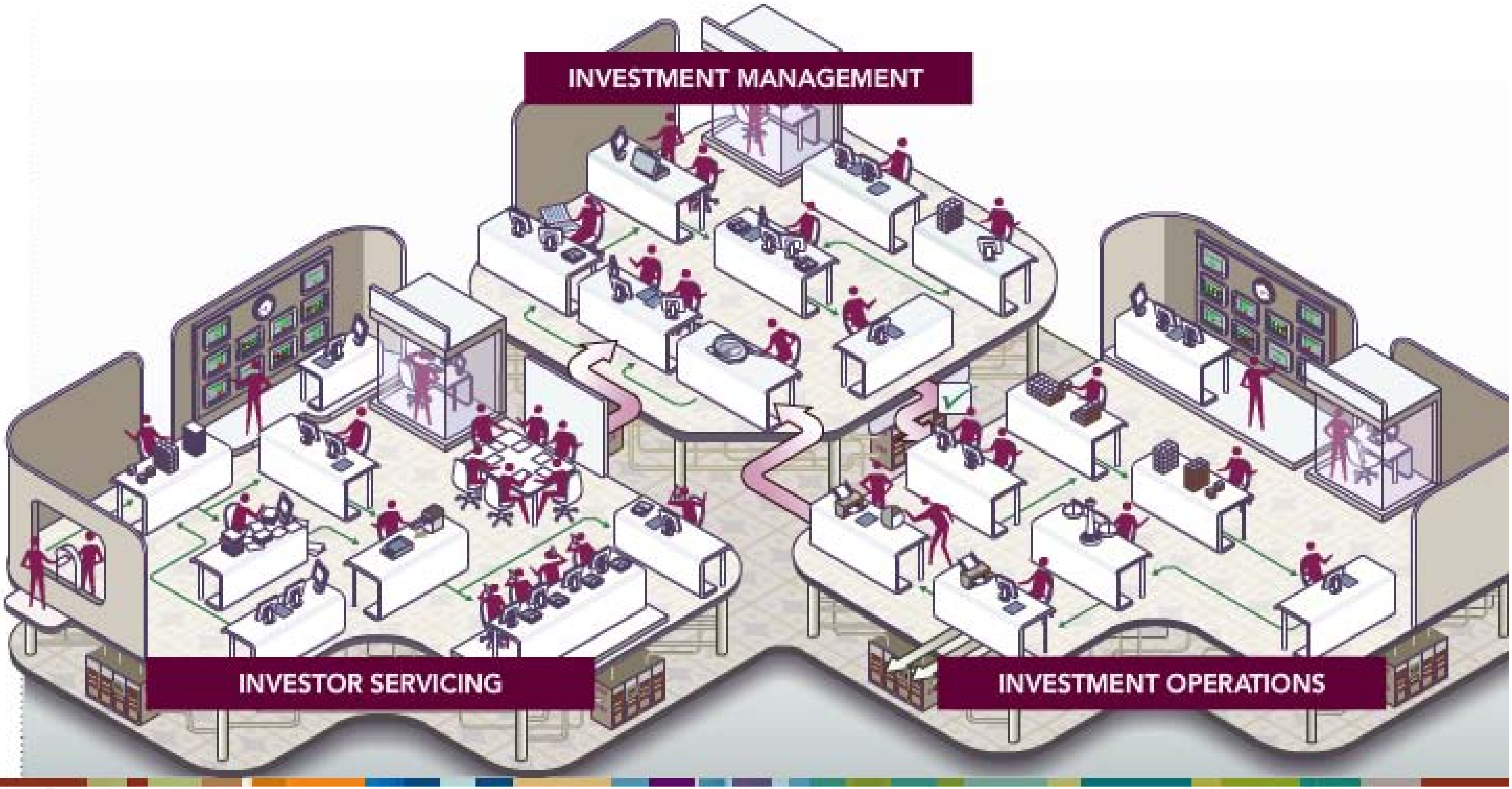
To brief analysts on the market drivers behind the increased emphasis on risk for asset managers, and on SunGard's progress with integrating APT functionality into the Asset Arena suite

- Launch of Asset Arena Risk, based on SunGard APT
- Customer experience
  - Asset Arena Investment Accounting + Risk Reports
  - Asset Arena Manager + Optimization
  - Asset Arena Portfolio Management + Risk Reports
- Asset Arena Risk roadmap

Asset management – mega trends

Investor Servicing	▪ Institutional investors and regulator will push for increased transparency ▪ Major shift in asset accumulation to emerging economies (e.g. China, Brazil, Middle East) ▪ Retirement savings will be managed and packaged differently
Investment Process	▪ Increased focus on risk management ▪ The market segmentation around HF and traditional asset manager is changing ▪ Increased emphasis on market data sourcing / management for alpha discovery
Investment Operations	▪ Greater processing complexity coupled with increased focus on risk management and transparency ▪ Long-term global trend of outsourcing investment operations ▪ Servicers expanding 'outward' to offer middle office services – areas include valuation, reporting, collateral management, risk reporting and compliance

The Asset Management World



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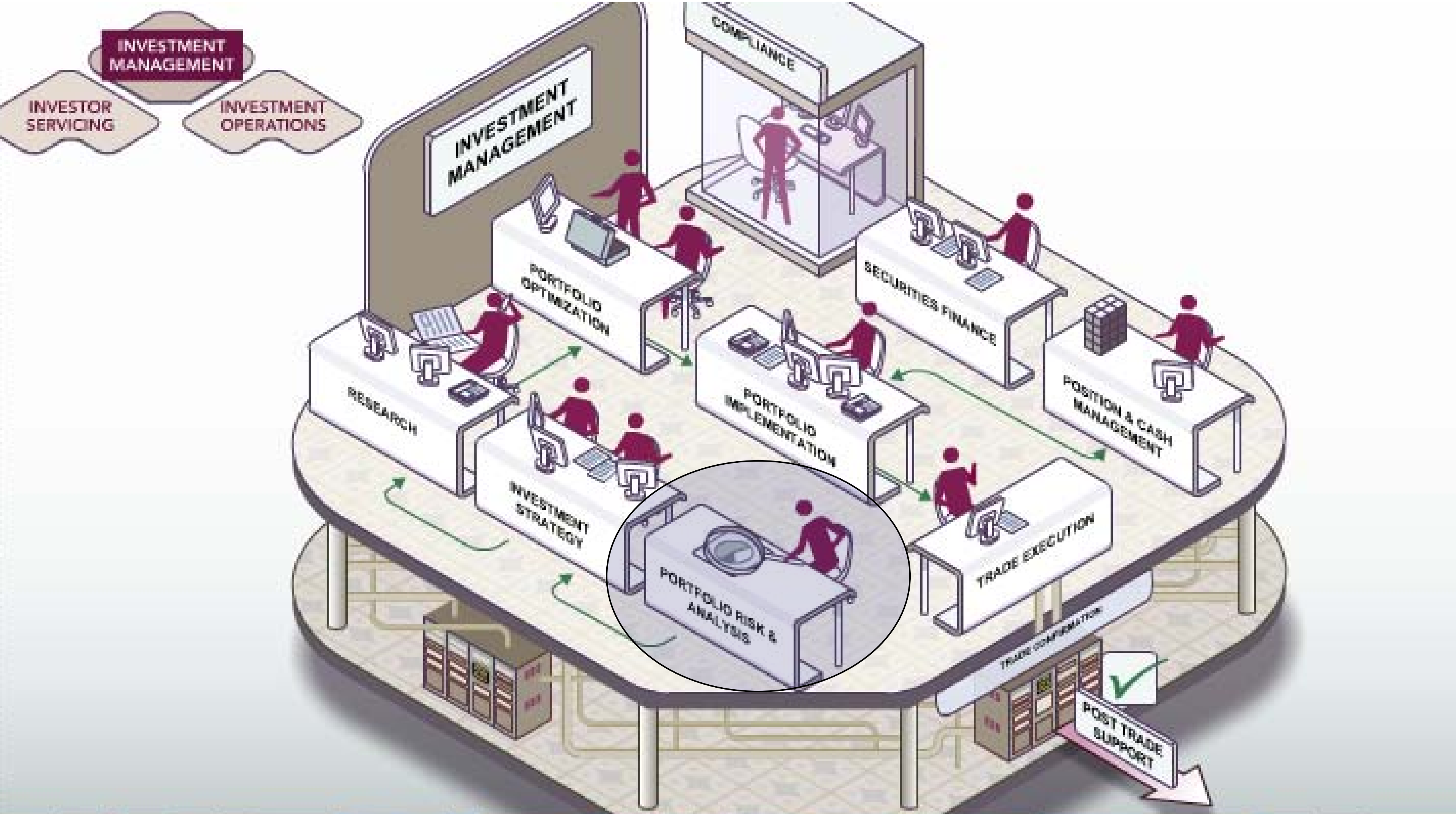
Inside Investment Management



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Launch of Asset Arena Risk

Launch of Asset Arena Risk

Asset Arena is SunGard's global suite of solutions for the asset management industry. Offering a broad range of services traditionally associated with the front, middle and back office, Asset Arena is composed of independent software components organized into familiar business processes.

Asset Arena Risk

- Launched in September 2009
- Based on SunGard APT risk reporting and decision support tools
- Differentiated through its integration with the Asset Arena suite

SunGard APT at a glance

Decision support tools for investment managers

- hosted and deployed portfolio risk reporting
- interactive portfolio construction and optimisation
- data-rich with minimal client data requirements
- global cross-asset-class coverage

Full range of robust and responsive risk measures

- Value at Risk (VaR)
- Tracking Error, Tracking at Risk (TaR™)
- volatility, beta, correlations
- scenario analysis, style analysis, fixed-income (duration, convexity)
- Monte Carlo (VaR, conditional VaR, incremental VaR)

Example Risk Report

SUNGARD Asset Arena Risk

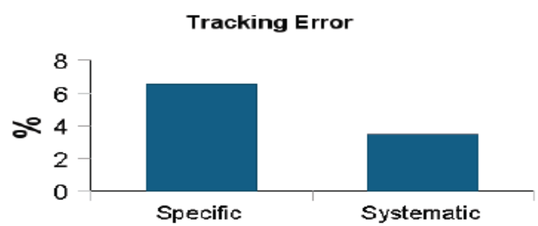
Fund Summary

Portfolio	Equity Portfolio (PF1)	**Benchmark**	Equity Benchmark (BM1)
Number of Securities	27	**Number of Securities**	37
Net Asset Value	3,235,435		

Report Details

Model	WorldBondsLocal(AUD) 2007-12-12	**Evaluation Date**	2008-07-10
Report	demo		

Risk Breakdown



Risk

	Total	Systematic	Specific
Volatility	13.10%	12.18%	4.83%
Tracking Error	7.39%	3.46%	6.53%

Tracking At Risk

Total	8.966%
Systematic	6.140%

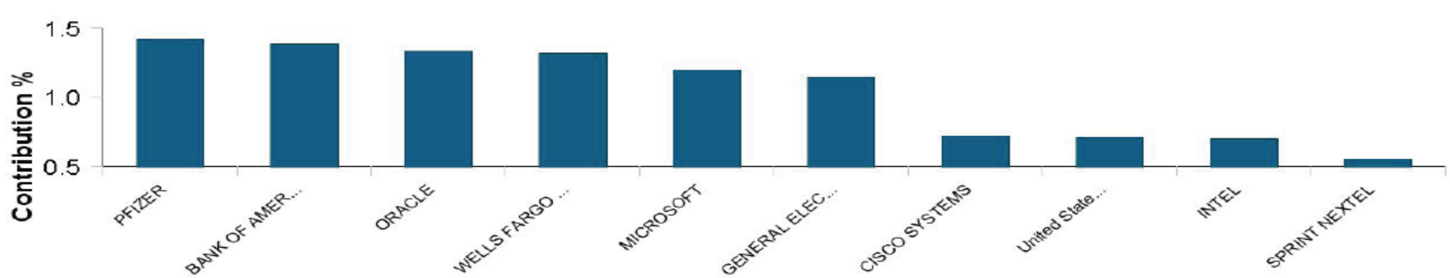
Portfolio to Benchmark

	Beta	Correlation
Total	0.998	0.826
Systematic	1.194	0.972
R Squared		0.682

Value At Risk (Total)

		VaR		CVaR
1 day	95.0%	1.46%	62,000	1.91%
1 day	99.0%	2.18%	87,000	2.68%
2 week	95.0%	4.56%	190,000	5.84%
2 week	99.0%	6.63%	250,000	7.73%

Top 10 Contributors to Risk



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Example Portfolio Construction Analytics

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Workspace Edit View Portfolio Analysis Help

Import... Export... Equity Portfolio Optimize...

Home · Data View · Scenarios · Analysis · Messages

Layouts · Revised Portfolios

. .. . Example Layout - Equity Portfolio (Original Portfolio) vs Equity Benchmark - World Bonds Local (USD)

Top-Level Analysis

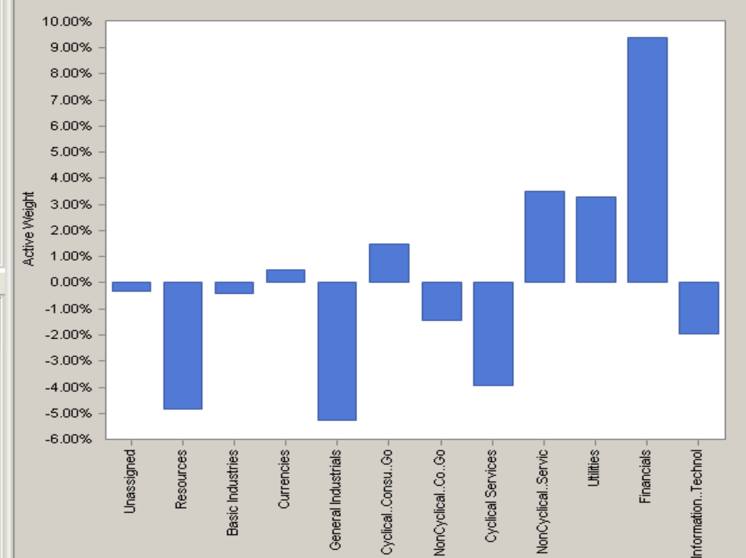
Portfolio	Portfolio	Benchmark	Active Portfolio
Name	Equity Portfolio	Equity Benchmark	
Total Volatility	21.434 %	18.869 %	7.280 %
Systematic Volatility	21.249 %	18.786 %	6.674 %
Specific Volatility	2.812 %	1.769 %	2.909 %
Total TaR (68 %, 1 year)	37.827 %	33.397 %	12.199 %
Systematic TaR (68 %, 1 year)	37.722 %	33.350 %	11.848 %
Specific TaR (68 %, 1 year)	2.812 %	1.769 %	2.909 %
Total VaR (95 %, 2 weeks, Chebyshev)	9,093,650.35	0.16	2,890,871.51
Total Beta to Benchmark	1.071		0.071
Total Correlation to Benchmark	94.26 %		18.34 %

Scenario Analysis

Scenario (World Bonds Local (USD))	Portfolio Total Volatility	Expected Portfolio Value Change	Total Tracking Error	Active Total VaR (95 %, 2 weeks, ...)
No Scenario	21.434 %		7.280 %	2,890,871.51
Tech Bubble 2000	30.686 %	-1,283,475.82	8.786 %	3,574,389.81
Asian Crisis 1997	47.936 %	-820,989.56	9.515 %	3,900,412.60
9/11 2001	48.581 %	-5,235,618.10	10.852 %	4,493,146.64
Russian Default 1998	42.296 %	-3,810,703.90	11.002 %	4,559,460.12
Mortgage Crisis 2007	47.913 %	-2,919,414.12	11.862 %	4,937,666.82
WorldCom 2002	51.788 %	-4,531,848.87	12.039 %	5,015,238.30
Financial Crisis 2008	73.111 %	-19,694,489.65	17.019 %	7,182,730.93

Total Tracking Error

RiskScan · Cont to TE Sector · Style Analysis · Asset Allocation Analysis · USD Key Rate A



New Pages · Field Chooser · Grouping

Top 10 Contributors to Risk

Name	Active Weight	Contribution to Active Total TaR (68 %, 1 year)	Contribution to Active Systematic TaR (68 %, 1 year)	Contribution to Active Specific TaR (68 %, 1 year)	Contribution to Active Total VaR (95 %, 2 weeks, Chebyshev)	Contribution to Active Systematic VaR (95 %, 2 weeks,	Contribution to Active Specific VaR (95 %, 2 weeks, Chebyshev)	Contribution to Active Total VaR (95 %, 2 weeks, Gaussian)	Contribution to Active Systematic VaR (95 %, 2 weeks,	Cont Activ VaR week Gaus
Total (895 securities - Filtered)	0.00 %	12.199 %	11.848 %	2.909 %	2,890,871.51	2,852,545.91	469,169.38	1,174,226.16	1,076,423.32	
VOLKSWAGEN	1.77 %	0.634 %	0.620 %	0.136 %	150,764.02	149,176.30	21,968.92	60,381.62	56,292.47	
BBV.ARGENTARIA	1.46 %	0.479 %	0.488 %	0.022 %	116,502.74	117,494.27	3,488.37	42,037.99	44,337.09	
AXA	1.37 %	0.477 %	0.480 %	0.049 %	115,211.56	115,472.68	7,823.82	43,070.93	43,574.23	
MITSUBISHI UFJ FINL.GP.	1.76 %	0.475 %	0.465 %	0.098 %	113,011.61	111,936.98	15,765.44	45,020.97	42,240.01	
BANCO SANTANDER	1.61 %	0.467 %	0.473 %	0.030 %	113,233.50	113,971.03	4,765.68	41,329.57	43,007.57	
NINTENDO	1.35 %	0.458 %	0.457 %	0.060 %	110,210.81	110,106.94	9,634.45	41,938.24	41,549.44	
SUMITOMO MITSUI FINL.GP.	1.21 %	0.427 %	0.428 %	0.049 %	102,936.58	103,015.99	7,925.90	38,802.64	38,873.63	
ABB 'R'	1.46 %	0.424 %	0.426 %	0.043 %	102,234.65	102,458.22	6,992.06	38,236.57	38,663.15	
UBS 'R'	1.47 %	0.419 %	0.415 %	0.067 %	100,380.49	99,941.63	10,868.20	38,914.75	37,713.50	
EXXON MOBIL	-5.05 %	0.373 %	0.318 %	0.267 %	82,623.94	76,655.25	43,038.99	43,713.46	28,926.27	

Equity Portfolio | World Bonds Local (USD) (18/03/2009) | Equity Benchmark

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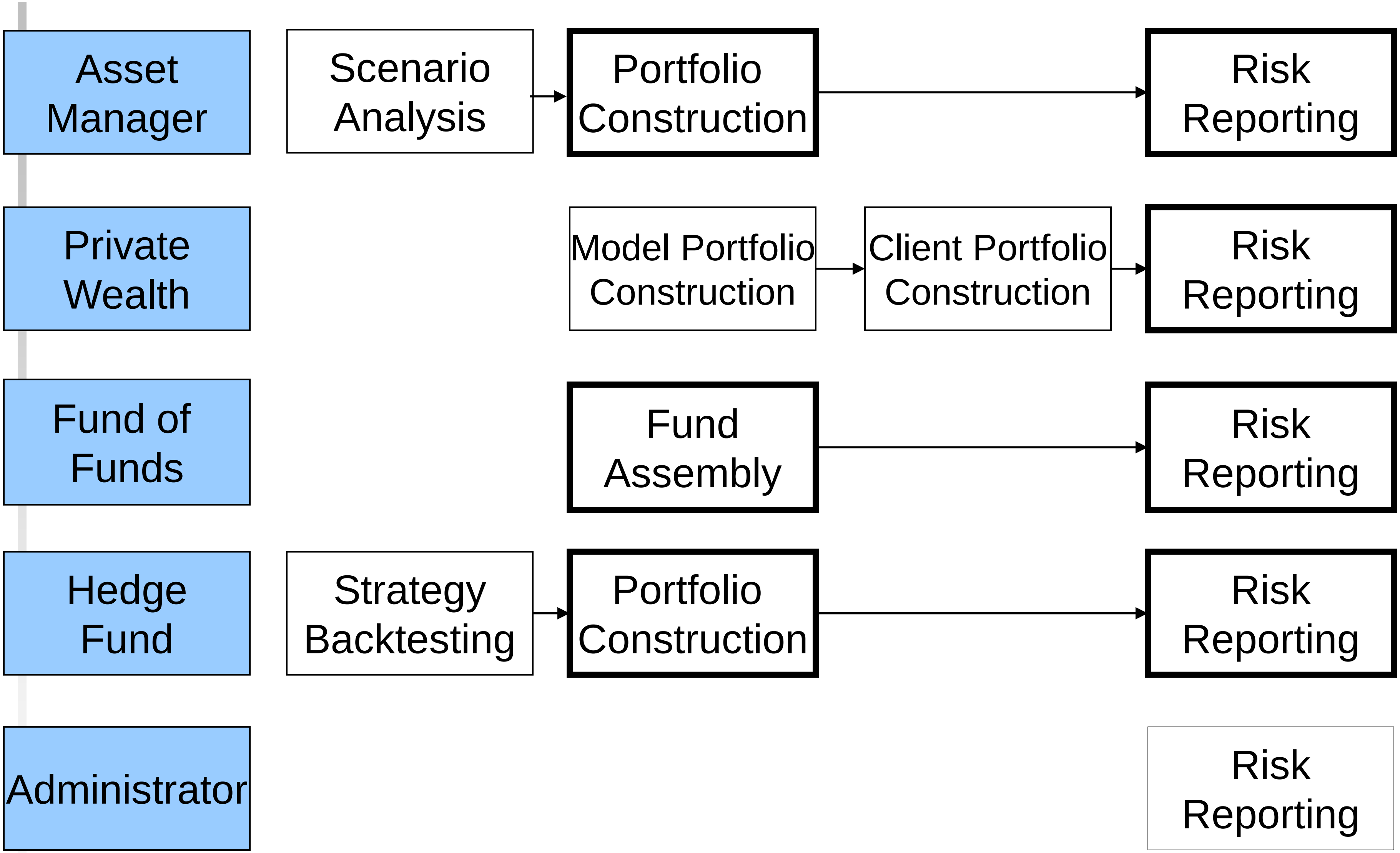
Where SunGard APT Fits into Client Workflows



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Customer Experience

Asset Arena Investment Accounting + Risk Reports

Client requirements

- A portfolio manager looking for an understanding of portfolio risk, including top contributors to Value at Risk or Tracking Error, tail risk, scenarios, stress tests
- An asset manager disseminating risk reports to internally to compliance and management, or externally to investors and regulators
- A pension fund manager reporting to their Trustees on risk
- A Third Party Administrator offering risk reports as an add-on service to their administration clients

The solution

- Clients of can now request risk reports run directly from the post-NAV data held in Asset Arena Investment Accounting
- Project generates an Asset Arena Risk report directly from the post-NAV accounting data held in Asset Arena Investment Accounting
- Reports are batch-scheduled or on-demand from APT's risk reporter

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Asset Arena Manager + Optimization

- Example: portfolio managers at a large EU asset manager
  - Need to understand portfolio risks including exposures to common economic factors, drilling down to find the main sources of risk
  - Risk-based tools for portfolio construction and alpha generation
  - Optimize portfolios by diversifying specific risk, or by hedging systematic risk
  - Scenario analysis
- The solution
  - File extract from Asset Arena Manager in real time including intra-day trades and/or simulated positions
  - This file generates risk reports from Asset Arena Risk Reporter
  - And the file goes to Asset Arena Optimizer, so that portfolio construction and optimization functionality can be used on the up-to-the-minute portfolio
  - Currently covered asset classes include equities and bonds

Asset Arena Manager + Optimization

- Further development of this integration
  - Two-way communication so the portfolio manager can view Asset Arena Risk reports in Asset Arena Manager – in real time and including intra-day trades
  - Direct import of benchmarks from Asset Arena Manager into Asset Arena Risk
  - Optimized portfolio or suggested trades are exported from Asset Arena Risk into Asset Arena Manager, where they can be actioned for rebalancing
  - Asset Arena Manager to store (not just display) optimized portfolios, risk factors, risk measures etc
  - Extend the integration into OTC derivatives (IRS, CDS, FRA and more)

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Asset Arena Portfolio Management + Risk Reports

- Example customer: a Middle East asset manager looking for
  - Front office (portfolio management)
  - Middle office (compliance, performance, risk)
  - Back office (accounting)
- The solution
  - Integrated ASP Portfolio Management solution providing fund accounting and control over risk and performance reporting
  - The whole solution is Software as a Service, on SunGard Infinity, allowing for a fast time to market with a single customer log-in
  - Post-NAV risk report generated automatically from the accounting system, including specialized risk models for the Arabian markets
  - The report shows Value at Risk, Tracking Error, Top 50 contributors to risk and many other metrics
  - The report is emailed automatically to the portfolio manager before the start of every trading day, for pre-trade analysis

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Asset Arena Risk Roadmap

APT Roadmap

- Beyond the further building out of Asset Arena Risk, the roadmap for the underlying APT functionality includes
  - Facility to incorporate qualitative measures (e.g. internal rankings, analyst recommendations) in the portfolio construction and optimization tool
  - Integrated performance and risk reporting for pre-trade analysis and strategy simulation
  - Fixed-income enhancements – bond pricing, data, ABS/MBS
  - Historical scenarios
  - Integration of APT risk functionality with other systems, e.g. SunGard Apsys for private banking and wealth management

Confidentiality Statement

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