

# Driving Management Excellence in Financial Services

*Oracle's Analytic Applications in Financial Services*  
*An Oracle White Paper*  
*January 2009*

**NOTE:**

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

# Driving Management Excellence in Financial Services

## INTRODUCTION

For over fifteen years, Oracle has delivered industry leading analytic solutions to help financial institutions grow profitability and optimize performance. While continuing to deliver solutions to meet customers' needs, we are developing new products and integrations to address the challenges that financial institutions face now and in the years to come.

## INDUSTRY CHALLENGES IN THE SPOTLIGHT

During the past few years, many banks pursued growth above all other objectives. Risk management was ignored in some cases and considered a roadblock to closing business in others. These growth-dominated strategies have proven painfully unsuccessful. Risks that were once viewed as overly pessimistic have proven to be quite plausible.

In a recent survey by Ernst & Young of the world's largest banks, nearly 90% of respondents indicated that managing for liquidity rather than exclusively for earnings or growth was seen as the most crucial takeaway from the current financial crisis.<sup>1</sup>

In most cases, the issue has not been the absence of risk analysis. Ironically, today's crisis is taking place just as Basel II is being implemented around the world. Regulations and history had already ensured the existence and funding of risk management groups in almost all financial services organizations. However, most banks did not factor in the information generated by these groups, either culturally by making risk a top organizational priority, or practically by integrating risk in to everyday business decisions. Risk metrics were not widely incorporated into credit or operational decisions, factored into compensation plans, or in the assessment of financial results.

In an article entitled "Confessions of a Risk Manager," a global risk manager summarized the situation as follows:

*"At the root of it all, however, was—and still is—a deeply ingrained flaw in the decision-making process. In contrast to the law, where two sides make an equal-and-opposite argument that is fairly judged, in banks there is always a bias towards one side of the argument. The*

*"In banks there is always a bias towards one side of the argument. The business line was more focused on getting a transaction approved than on identifying the risks in what it was proposing. The risk thinking therefore leaned towards giving the benefit of the doubt to the risk-takers."*

—Confessions of a Risk Manager,  
The Economist, 07 Aug 2008

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<sup>1</sup> "Navigating the crisis: a survey of the world's largest banks," Ernst & Young, 2008, p.5

*business line was more focused on getting a transaction approved than on identifying the risks in what it was proposing. The risk factors were a small part of the presentation and always “mitigated”. This made it hard to discourage transactions. If a risk manager said no, he was immediately on a collision course with the business line. The risk thinking therefore leaned towards giving the benefit of the doubt to the risk-takers.”<sup>2</sup>*

While none of these problems are new, the financial crisis has put them in the spotlight. More than ever, Oracle hears customers and regulators talking about the need to measure and meet risk-adjusted performance objectives, cultivate a risk management culture through transparency, and lower the costs of compliance and regulation.

Ernst & Young agrees. In the survey cited above, embedding a risk culture was ranked as the second most important imperative after managing liquidity.<sup>3</sup>

While practices such risk-adjusted performance management are well-worn terms, they have not been widely adopted. One reason is undoubtedly the high operational and organizational difficulty of implementing such projects, including siloed infrastructures, disparate systems, and fragmented decision making. Indeed, respondents in the Ernst & Young survey reported that their risk and finance system are not in synch and that there is a need to determine which information should be shared and how.<sup>4</sup> Furthermore, the technology has simply not been easily or cheaply accessible. However, this is rapidly changing as advancements in both hardware and software are making such information cheaper and more quickly available.

**With over 500 Financial Services customers adopting Oracle Analytic Application solutions, our applications are the industry standard for managing performance, understanding customers and mitigating risk.**

## **A CONSIDERABLE HISTORY**

Oracle has a rich history in developing analytic solutions for financial services institutions. Our Oracle Financial Services Applications (OFSA) suite was the first to offer matched maturity funds transfer pricing, balance sheet planning, stochastic rate risk analysis, and customer performance management.

Acquisitions over the past several years have further broadened and deepened Oracle’s footprint in the financial services industry. By combining with market-leading strategic companies, Oracle strengthens its product offerings, accelerates innovation, meets customer demand more rapidly, and expands partner opportunity. In the analytic applications space addressing financial services, Oracle has made acquisitions across four key pillars as shown below, with the intent to present an integrated solution to the marketplace.

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<sup>2</sup> Confessions of a Risk Manager, *The Economist*, 07 August 2008

<sup>3</sup> "Navigating the crisis: a survey of the world's largest banks," Ernst & Young, 2008, p.5

<sup>4</sup> "Navigating the crisis: a survey of the world's largest banks," Ernst & Young, 2008, p.25

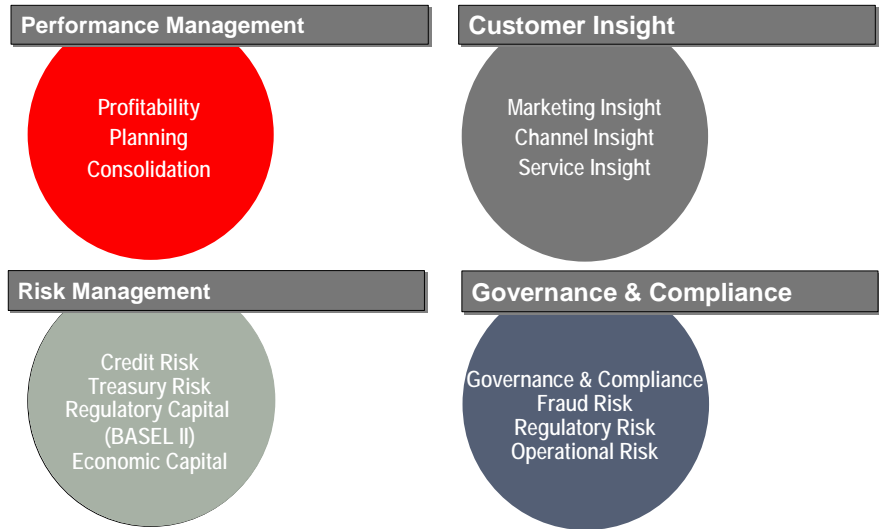


Figure 1. Oracle's Analytic Applications for Financial Services

The following acquisitions have been keystones of these offerings:

PeopleSoft	Activity-Based Management, Funds Transfer Pricing, Financial Services Data Warehouse
Reveleus	Basel II, Economic Capital, Credit Risk, Operational Risk
Siebel	Customer Analytics, Business Intelligence
Mantas	Anti-Money Laundering, Broker/Dealer Compliance, Transactional Analytics
Hyperion	Budgeting & Planning, Financial Consolidation

Analysts rank Oracle's Financial Services Analytic Applications as leaders in their space:

- GRC
- Operational Risk
- Anti-Money Laundering
- Customer Profitability/FTP
- Budgeting and Consolidations
- Customer Analytics

These analytic applications are extremely robust and ranked as leaders in their class.

Over the next year, Oracle plans to merge the best aspects of each of the relevant products into a new Fusion<sup>5</sup> Financial Services Analytic Applications product line, all on a single, integrated platform.

This next generation solution suite will leverage our best-of-breed functional coverage, advanced database technology, and middleware. The suite will enable banks to share information between the functional areas, bringing together risk and performance management to achieve management excellence.

<sup>5</sup> NOTE: Fusion Financial Services product names have not been finalized and are working names

## DRIVING MANAGEMENT EXCELLENCE IN FINANCIAL SERVICES

The ability to assume financial risk to achieve return is the primary function of the financial services business. The linkage between risk and performance management is fundamental and we are designing our solutions to recognize the relationship. In doing so, we are enabling customers to perform new types of analysis and calculations that cut across silos of information. In today's turbulent environment, the need for such a new class of solutions is more critical than ever.

As illustrated below, with this new architecture, our Balance Sheet Planning solution can call the cash flow engine underlying our Asset | Liability Management solution as a service and the capital calculation engine underlying our Basel II and Economic Capital solutions to determine capital charges. As another example, stress testing and the final impact on capital requirements across multiple risk types for ICAAP can all be performed in a single application environment.

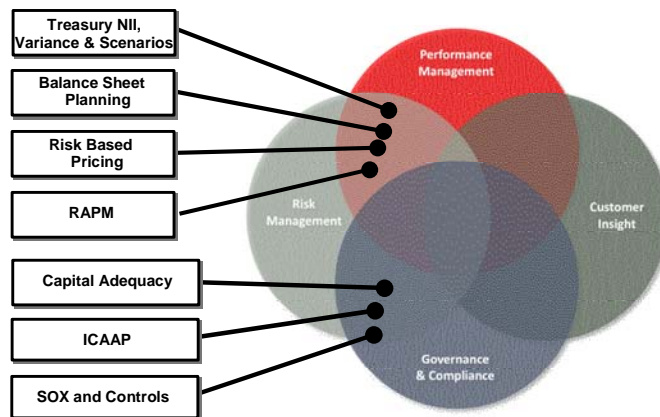


Figure 2. Management Excellence Begins at the Intersection of Functional Silos

## UNIFIED DATA MODEL

Core to our strategy is delivering a suite of performance, profitability and risk applications built on top of a single financial services specific data model. This strategy will bring together content and optimized data structures from our Oracle, PeopleSoft and Reveleus solutions. The applications will source data

directly from this federated Financial Services data warehouse. This warehouse will be integrated with Oracle Hyperion Enterprise Performance Management applications and Oracle Business Intelligence Applications.

This single data model will come loaded with the key facts, metrics, and indicators that a financial services organization requires. In addition to existing coverage in the PeopleSoft, Oracle, and Reveleus models, the new model will include more off-balance sheet products, capital markets products, a deeper customer/counterparty model, collateral, and other credit facilities. Key performance metrics for credit, market and operational risk, as well as those indicators required for SOX, AML, KYC, MFID and Basel II compliance will be included.

The model will be technically architected to serve multiple functional requirements. Reporting and intelligence is delivered through aggregated marts coupled with transaction level detail. Stochastic capabilities and large scale deterministic processing are delivered through denormalized areas optimized for processing. History will be stored in normalized subject areas. Transformations and aggregations between the various areas will be delivered through the platform whereby data movement is minimized and processing/query times are fully optimized. The model is fully process independent and will work in conjunction with third-party analytic applications.

Moreover, the model will be fully physicalized for optimal performance and complete integration with Oracle OLTP applications. It will also be fully extensible.

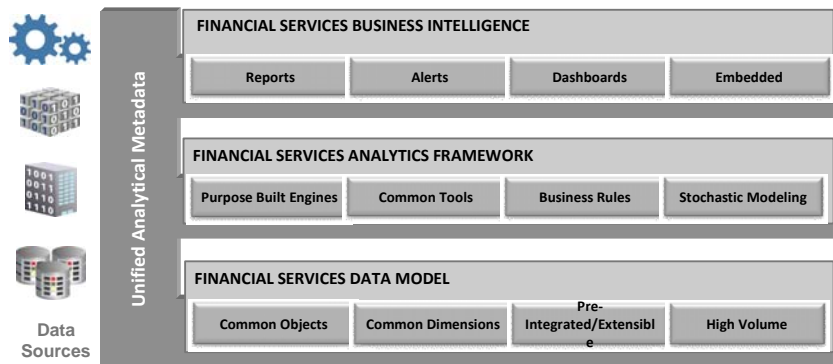


Figure 3. An Integrated Platform is the Key -- Shared Components Across Applications

As illustrated above, Oracle is using a framework-based approach to delivering these solutions. Common reusable objects are being leveraged across the solutions to deliver far more robust solutions to market with greater speed. For example, in forming the creation of retail pools, there is a common retail pooling engine that stratifies instrument groups for use in Basel II, ALM, FTP, and Economic Capital. Similarly, economic scenarios such as prepayment assumptions are defined in a single place and leveraged across the entire solution. An average daily balance used in a Basel II solution will be the same as what is used in a profitability calculation. Wherever possible, business logic is instantiated in a rules interface so that users may modify calculations to fit their businesses.

#### KEY FEATURES

- Best of breed functional enhancements
- Web-based user interface and improved usability
- Integrated Business Intelligence
- Integration of Risk, Customer, Performance Management, and Compliance apps
- Single data model and platform
- Market leading technology
- Significant increase in flexibility of platform and tooling

#### ROADMAP TO MANAGEMENT EXCELLENCE – FUNCTIONAL ENHANCEMENTS

In addition to the rearchitecture, each of the redesigned products will contain significant functional and technical enhancements. Usability will be dramatically enhanced and standardized across the product suite. Applications will incorporate new levels of transparency and auditability, as well as support for new types of financial instruments.

Highlights by specific product area include:

##### Fusion Financial Services Asset | Liability Management<sup>6</sup>

- Business logic improvements that reflect changes in the market place, such as new financial instruments, new types of derivatives
- Taking the best of both OFSA and PeopleSoft EPM with mathematical models for term structures, such as Black Karasinsky, and Cox Ingersoll Ross
- Additional key metrics such as modified duration, convexity
- Improved functionality for Liquidity Management and additional ALM outputs
- Improved ALM Reporting with Oracle Business Intelligence Enterprise Edition (OBIEE)
- Improvements to Term Structure Models / Parameter Estimation

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### **Fusion Financial Services Funds Transfer Pricing**

- Increased ability to create accurate transfer rates for more exotic financial instruments
- Ability to establish a transfer rate proactively -- to lock in an adequate margin -- rather than simply measuring how well you did after the fact
- Transfer Pricing method enhancements
- Transfer Pricing adjustments
- Integration of real-time pricing
- Integration with ALM/BSP FTP for forecast business

### **Fusion Financial Services Profitability Management**

- Greater visualization and built-in auditability regarding the genealogy of the allocations
  - Visual trace of allocation history
  - Allocation interdependency and ability to discriminate debits & credits in results
- Ability to easily discern the complex network of relationships inherent in the allocations
- Allocation Engine Enhancements
  - Table ID enhancements
  - Lookup Table ID enhancements
  - Ability to allocate to node levels
- Filtering Enhancements
  - Attribute filtering
  - Ability to filter on formula expressions for source and drivers

### **Hyperion Profitability and Cost Management**

- Hyperion Profitability and Cost Management (HPCM) covers activity-based costing requirements. HPCM is planned to work with Fusion Financial Services Profitability Management to source activity rates and aggregated costing data.

### **Fusion Financial Services Balance Sheet Planning**

- To include the superset of all balance sheet and net interest margin planning functionality from the existing applications referenced above
- Leverage functionality within Hyperion Planning, including OLAP and user interface

- Full Cash Flow Forecasting with Transfer Pricing
- Integration with Capex and Workflow Planning
- Scalability

#### **Oracle Reveleus ICAAP**

- Provides robust capital planning to ensure that banks possess adequate capital to meet current & future regulatory and economic capital requirements under baseline & stressed scenarios
- Provides optimal capital allocation & Risk Adjusted Performance Measurement across various lines of business and legal entities
- Provides a CFO and CRO an enterprise wide view of risk simultaneously meeting all regulatory Basel II ICAAP requirements

#### **Oracle Reveleus Economic Capital**

- Deploy capital across the enterprise to optimize business results and shareholder value
- Establish risk level to define risk appetite and develop business plans that are closely aligned with corporate strategies
- Improve capital management and strategic planning
- Assess risk-based adequacy of capital as calculated per Basel II and SR 99-18

#### **Oracle Reveleus Market Risk**

- Achieve a clear view of risks and returns using multiple measures such as Value-at-Risk (VaR), Conditional Value-at-Risk (CVaR) and Component VaR -- across a wide range of financial instruments, including elaborate derivatives
- Expanded and extensive modeling capability, including instrument valuation, bootstrapping, parameter calibration, and correlation estimation
- Integrated stress testing capabilities enables institutions to stress test and back test multiple portfolios within a single solution
- New Market Risk Business Intelligence functionality that enables financial institutions to customize reporting to suit user requirements and report across multiple levels of the organization

## Oracle Mantas Financial Crimes Management

- Integrated key dimensions including detection, prevention, investigation and resolution across multiple channels, jurisdictions, lines of business, and customer life-cycle stages
- Pre-configured, industry-recognized library of advanced anti-money laundering scenarios
- Multiple detection methodologies like Link Analysis, Text Mining, Profiling, to analyze behavior patterns and detect anomalies
- Advanced Risk Derivation and Risk Scoring models to identify potential perpetrators across customer life cycle stages

## Integrated Business Intelligence

Fusion Financial Services applications will have corresponding Business Intelligence applications that deliver pre-packaged reporting, dashboarding and analysis capabilities, pre-integrated with the underlying application. These applications provide role-based content across the enterprise at a significantly low cost of ownership. Two of these applications are already released:

- Oracle Financial Services Profitability Analytics
- Oracle Financial Services Asset Liability Management Analytics

These applications leverage Oracle Business Intelligence Enterprise Edition (OBIEE), Oracle's market-leading BI platform. OBIEE provides a common reporting and analysis interface across the entire suite.

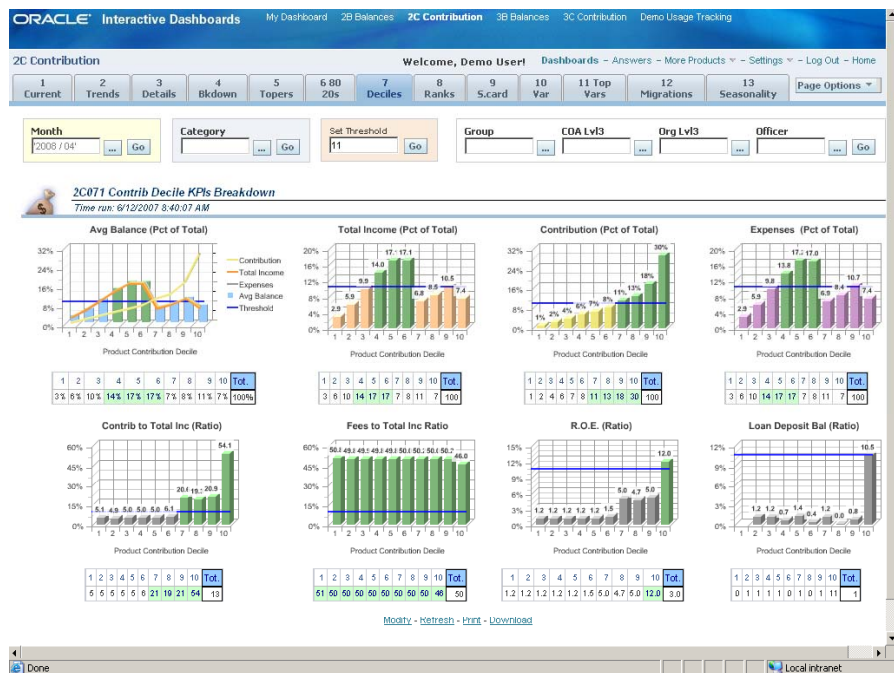


Figure 4. Oracle Financial Services Profitability Analytics

## Robust Technology Underpinnings

To compute the profitability of millions of customer relationships you need the power of relational technology, to get the speed of thought response time and easy manipulation of data you need OLAP and MOLAP technologies, and to facilitate the distribution of information into the right hands you need sophisticated and powerful business intelligence capabilities.

Oracle has a broad and deep arsenal of best of breed technologies that we are integrating to drive the Fusion Financial Services Analytics solutions. We are taking on the task of integrating these disparate technologies so that our customers don't have to. The Fusion Financial Services Analytics platform will combine the following Fusion Middleware components:

CATEGORY	ORACLE TECHNOLOGY
<b>RDBMS</b>	Oracle Database
<b>OLAP</b>	Hyperion Essbase
<b>Business Intelligence</b>	Oracle Business Intelligence Enterprise Edition
<b>Middleware</b>	Oracle WebLogic Application Server
<b>Metadata Management, Infrastructure, Stochastic Framework and Tooling</b>	Oracle Financial Services Analytics Foundation
<b>Financial Services Data Model</b>	PSFT EPM 9 FS Model, Oracle EPF Model, & the Reveleus & Mantas Model
<b>Proprietary FS Engines and Algorithms</b>	FS Applications (OFSA) and Reveleus and Mantas
<b>ETL</b>	Oracle Data Integrator

### KEY BENEFITS

- Actively incorporate risk into decision making
- Promote a transparent risk management culture
- Deliver actionable customer and product profitability insight
- Deliver pervasive intelligence throughout the enterprise
- Dramatically decrease the total cost of ownership

## MIGRATING TO OUR NEXT GENERATION SOLUTIONS

Customers using OFSA 4.5.39 can safely stay with their current implementations. OFSA Budgeting & Planning, Performance Analyzer, Transfer Pricing, and Risk Manager are included in Oracle's Applications Unlimited policy and supported on Premier Support through July 2010 and Extended Support through July 2011. These products will be on Sustaining Support thereafter. In fact a new minor release for these products (version 4.5.4) will be delivered shortly.

Similarly, the PeopleSoft EPM solutions are included in Oracle's Applications Unlimited policy. PeopleSoft EPM 9.0 is supported on Premier Support through August 2011 and Extended Support through August 2014. These

products are on Sustaining Support thereafter. Given this coverage, customers may safely use these products and later migrate to the Fusion Financial Services products when they choose to.

Migration scripts to the Fusion solutions for both rules and data are being developed. Unlike other vendors in this space, we provide a deep bench of industry practitioners and partners that stand ready to assist in the migration process.

### **ORGANIZING AROUND FINANCIAL SERVICES**

Oracle has formed a single division devoted exclusively to Analytic Applications in Financial Services. In June, 2007, Oracle combined all of its Financial Services assets and personnel into a single Global Business Unit. Products from PeopleSoft, Reveleus, OFSA, Siebel and Hyperion were combined with the related subject matter experts. Members of the team include those with years of experience with this suite of products as well as industry practitioners from the likes of Morgan Stanley, Goldman Sachs, Fair Isaac, and Citigroup, to name but a few. The broad diversity of knowledge, coupled with the experience gained through over 500 implementations of these solutions, gives us unparalleled industry knowledge.

As a part of the creation of the Financial Services Global Business Unit (FSGBU), Oracle approved significant new investment into all of these products.

## CONCLUSION

In these uncertain times, the financial services industry will continue to be fiercely competitive, highly regulated, and more scrutinized than ever. Having the proper information available to make the right decisions that align with the business is now more important than ever. The following objectives outline the key business goals enabled by Oracle's new architecture.



Figure 5. Oracle Financial Services Analytics Solution Summary

Oracle has led the marketplace for analytic applications for over fifteen years in financial services, because of its comprehensiveness, scale, technology foundation, and industry insight. We remain committed to developing solutions that take advantage of advances in our technology leadership, and reflect the new challenges our customers face now and in the years to come.

APPENDIX – MIGRATION PATHS

**PFT/FTP Strategy in Financial Services**

Product Category	Product Family	Current Solution	Next Generation
Profitability	Default Product	<ul style="list-style-type: none"> <li>•Profitability Manager Version 4.5</li> <li>•OBI FS Profitability Analytics</li> </ul>	BI: Fusion Financial Services Profitability Analytics
	EBS Customers 11/R12	Profitability Manager 11/R12	Customer + Account Level Profitability: Fusion Financial Services Profitability Management
	PSFT Enterprise EPM Customers	Enterprise ABM	ABC: Hyperion Profitability & Cost Mgmt
	If ABC Required	Hyperion Profitability & Cost Mgmt	
			FTP: Fusion Financial Services Funds Transfer Pricing
FTP	Default FTP	<ul style="list-style-type: none"> <li>•Transfer Pricing Version 4.5</li> <li>•OBI FS Profitability Analytics</li> </ul>	
	EBS Customers 11/R12	Transfer Pricing	
	PSFT Enterprise EPM Customers	Enterprise FTP	

**ALM/Planning Strategy in Financial Services**

Product Category	Product Family	Current Solution	Next Generation
ALM	Default Solution	<ul style="list-style-type: none"> <li>•Risk Manager Version 4.5</li> <li>•OBI ALM Analytics</li> </ul>	BI: Fusion Financial Services ALM Analytics
	PSFT Enterprise EPM Customers	<ul style="list-style-type: none"> <li>•Risk Manager Version 4.5</li> <li>•OBI ALM Analytics</li> </ul>	ALM: Fusion Financial Services Asset   Liability Mgmt
	iFlex/Reveleus	Reveleus ALM	Budgeting: Hyperion Planning
Planning	Default Solution	Hyperion Planning	BSP: Fusion Financial Services Balance Sheet Planning
	Balance Sheet Planning	OFS 4.5 Budgeting & Planning	
	PeopleSoft Enterprise EPM Customers	PeopleSoft Planning & Budgeting	



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