

Cashflow Forecasting: Old Problem – New Solution

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The presentation will begin shortly...

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Webcast Topic

- **Cashflow Forecasting:** The accurate prediction of cash inflows and outflows over a period of time
- **Important due to:**
 - Focus on liquidity and risk management
 - Control requirements of Sarbanes Oxley
- **Solvable using proven Business Intelligence tools**

Today's Presenters

- Experienced collaborators, consultants from established firms
- **Dan Blumen**
 - Partner, Treasury Alliance Group LLC
 - 28 years of experience in global treasury consulting and banking
- **Juan Gorricho**
 - Principal Consultant, DecisionPath Consulting
 - 10 years experience in business strategy consulting and business intelligence design

Outline

- **Cashflow Forecasting**
 - Definition, challenges and opportunities
- **The Business Intelligence (BI) Promise**
 - BI and its uses in the enterprise
- **Treasury Application**
 - Elements of the cashflow forecast and similarity of the problem to traditional BI applications
- **How it Works**
 - Building a BI driven cashflow forecast
- **Summary and Questions**

Definition

What is Cashflow Forecasting?

“The accurate prediction of cash inflows and outflows over a period of time.”

Challenges

- Vast quantities of data from Enterprise A/R and A/P
- Need to position the cash
- Dynamic environment of changing organization and counterparty behavior

A/R and A/P Approach

Payables

Improve Disbursements
Forecasting Through A/P Data

**Minimize
The Gap**

Receivables

Improve Receipts Forecasting
Through A/R Data

Bank Data Approach

CURRENT WEEK

cash:	debt:	investment:	intercompany advances:	intercompany loans:
0	0	0	0	0

FORECAST

	w/c July 26, 2004	w/c August 2, 2004	w/c August 9, 2004	w/c August 16, 2004
third party receipt:	0	0	0	0
intercompany receipt:	0	0	0	0
gross receipt:	0	0	0	0
third party disbursement:	0	0	0	0
intercompany disbursement:	0	0	0	0
gross disbursements:	0	0	0	0
gross cash flow:	0	0	0	0
funding request:	0	0	0	0
funding offer:	0	0	0	0
net cash change:	0	0	0	0

Reset

Save

Opportunity

- Spread: \$20,000 per \$1 million in eliminated offset

Opportunity

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- Transaction: Overdraft fees, wire charges and other transaction costs

Opportunity

- Spread: \$20,000 per \$1 million in eliminated offset
- Transaction: Overdraft fees, wire charges and other transaction costs
- **Staffing: FTE cost of current forecasting process**

Definition

What is Business Intelligence?

“A set of concepts and methodologies to improve decision making in business through the use of facts and fact-based systems.”^{1,2}

1. Howard Dresner, The Gartner Group
2. Business Intelligence is not an oxymoron

Focal Points for BI

- **Advertising** – Plan, manage and evaluate campaigns
- **Resource Planning** – Forecast resource requirements and costs. Evaluate planned performance versus actual performance
- **CRM** – Identify most profitable customers, where they are located and how to reach them.
- **Marketing** – Identify opportunities to cross sell/ up sell based on previous and similar customer behaviors

The BI Promise

Techniques and technologies enable business solutions by:

- Integrating data from multiple sources
 - Marketing Example: Current customer profile, historical purchasing behavior for all customers, current customer's shopping cart
- Capturing sufficient history for trend analysis and forecasting
 - Marketing Example: Customer purchasing history and freely disclosed information help segment the customer. Historical purchases for all customers by segment required to provide optimal up-sell or cross-sell recommendations
- Providing an integrated, consistent and useable view of this information
 - Marketing Example: eCommerce application is integrated with BI technology to identify up-sell/ cross-sell opportunities as the customer adds items to their cart or makes their way to the check-out.

BI Driven Cashflow Forecast

Techniques and technologies enable cashflow forecast solutions by:

- Integrating data from multiple sources
 - Example: A/R, A/P, financial institution, exchange rate, corporate trends, product, promotion and customer behavior
- Capturing sufficient history for trend analysis and forecasting
 - Example: Historical A/R, A/P, financial institution, exchange rate, corporate, product, promotion and customer behavior data forms basis for trend analysis required for forecast
- Providing an integrated, consistent and useable view of this information
 - Example: Reporting/ data visualization technology analyzes past trends, recent sales, open invoices and planned sales activities to present cashflow forecasts in the form of tabular reports, graphs and/ or dashboards.

BI Driven Cashflow Forecast – *Benefits*

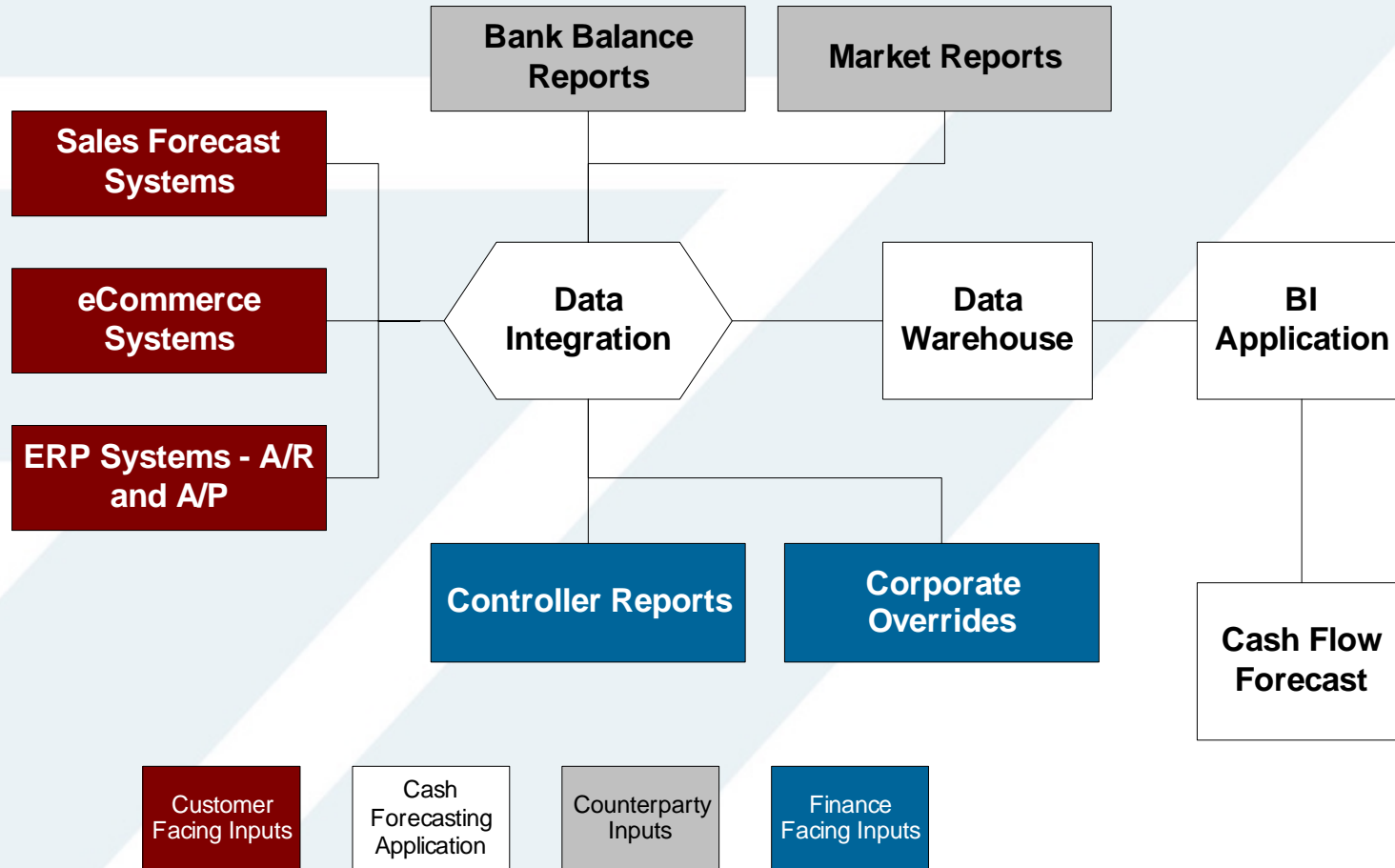
- **Existing solutions**
 - Static inputs to not adapt well to changes in the market, corporate structure or other financial factors
 - Models generally focus either on the A/R and A/P side of the problem or positions with financial institutions

BI Driven Cashflow Forecast – *Benefits*

- **New solution**

- Model continues to capture history, providing more data points for future forecasts
- Data driven model adapts to changes that affect markets, rates, customer or vendor behavior
- Integrates A/R and A/P as well as financial institution views of the corporate cashflow

BI Driven Cashflow Forecast



How It Works

1. Inventory revenue streams, expense streams and data sources
2. Analyze inventory to understand revenue flows and quality of data sources
3. Devise IT architecture to deliver cashflow forecast
4. Devise data gathering and transformation rules
5. Implement BI driven cashflow forecast

How It Works

Inventory Cash Streams & Data Sources

- **Two Parallel and Complementary Activities**
 - Inventory the business-specific revenue and expense streams that drive cash balances
 - Inventory corresponding sources of data for these streams.
- **Goals**
 - Set scope for future analysis activities
 - Align analysis with specific needs of the organization, not a generic cashflow model
- **Examples**
 - Post-sales service revenue: include this flow in the inventory as well as data sources for service contracts.
 - Expenses: include A/P system as a data source. May consider select department level spreadsheets

How It Works

Analyze Inventoried Cash Streams & Data Sources

- **Devise the Cashflow Forecast**
 - Analyze cashflows to determine forecast options
 - Discuss cashflows with key participants to gain insight into issues, quirks, etc.
 - Analyze sources to evaluate quality and determine how well data supports cashflow forecast options
 - Iterative process until we have a satisfactory forecast that works within data and other business process constraints
 - Final design provides answers to key questions
 - How the data will be stored and organized?
 - How the data store will be loaded and maintained?
 - What are the forecast application's capabilities?
 - How the data will be presented?
 - Resulting forecast design drives remaining activities

How It Works

Devise IT Architecture To Deliver Cashflow Forecast

- **Devise and Establish an Infrastructure to Deliver the Forecast**
 - Desired cashflow forecast, source data volumes and historical data volumes are key drivers for infrastructure requirements
 - Infrastructure components can be shared or dedicated resources
 - Possible components include:
 - Database to manage data required for the forecast
 - Custom or packaged extract, transformation and loading (ETL) or data quality software to capture, transform and load source data
 - Custom or packaged reporting, data analysis or data visualization software to present the forecast (may be as simple as MS Excel in many situations)
 - Network servers to host software components
 - Could require incremental expenditures
 - Need to factor some setup, configuration or installation time into schedule

Goal: Leverage the existing infrastructure as much as possible.

How It Works

Devise Data Gathering/ Transformation Rules

- **Data Gathering and Transformation Steps**
 - Dictated by desired cashflow forecast, not simply what is available
 - Design answers detailed questions like
 - How will we get data on a reliable basis from each required data source?
 - What are the rules for transforming source data so it is useful to the forecast application?
 - How do we handle data quality issues?
 - How do we load our data store in a timely and reliable basis

Example Handling

Financial Institution Data

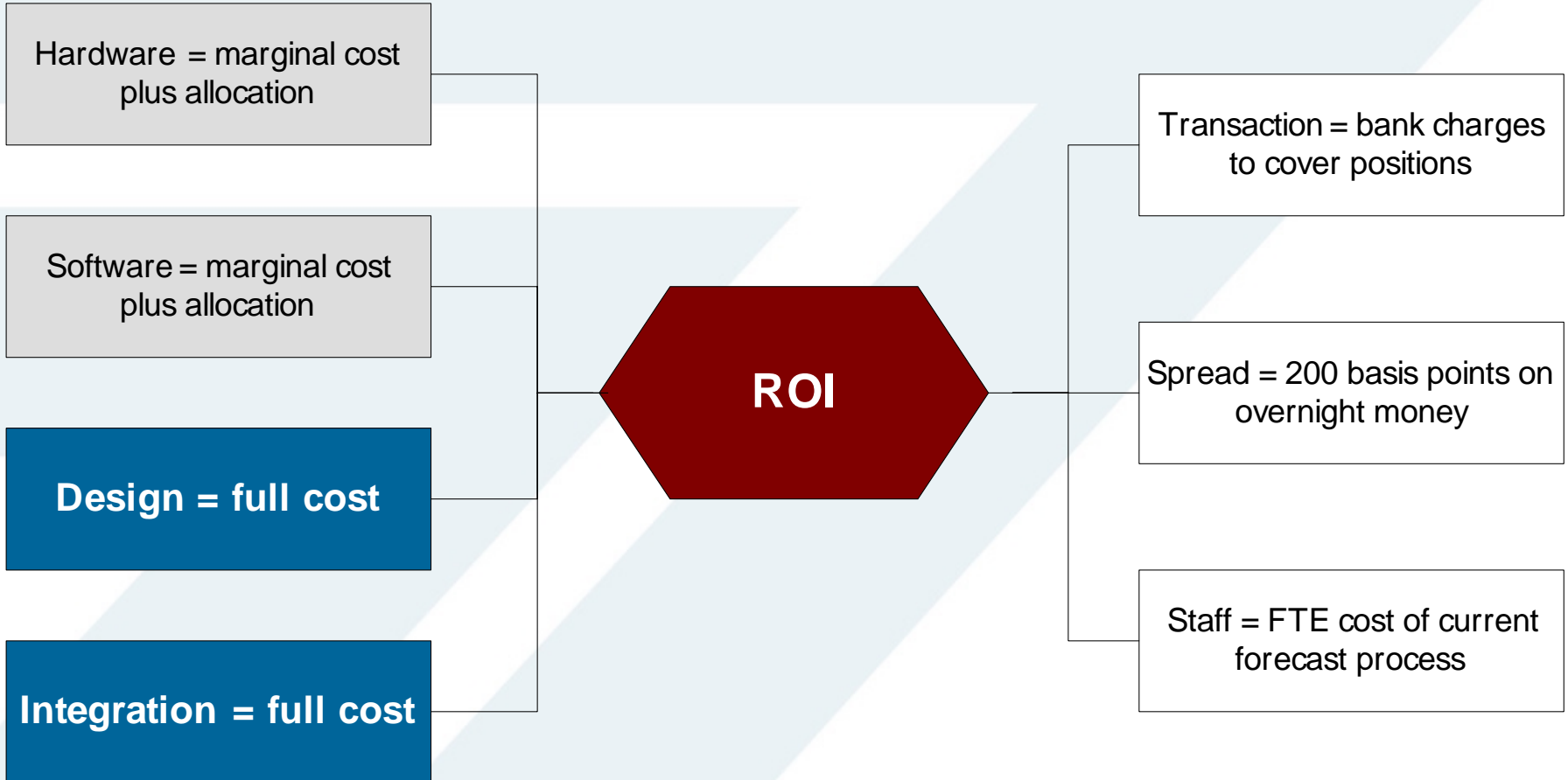
- Poll financial institution system for valid transaction and balance information
- Link transaction information to business events (payment of invoice)
- Perform any necessary calculations or data reformatting (elapsed payment days = date funds are available – date of invoice)
- Update reference data (add new customer)
- Load results into data store used by forecast application.

How It Works

Implement BI Driven Cashflow Forecast

- **Implementation Process Depends on an Available IT Infrastructure**
 - Many projects will choose to prototype the cashflow forecast using source data samples before starting full implementation
 - Implement data stores (as appropriate)
 - Implement data gathering and transformation rules using the selected data integration technology
 - Implement the cashflow forecast using the selected BI technology
 - Test the validity of the resulting cashflow forecast
- **Cashflow Forecast Can Be Iteratively Implemented and Deployed**

ROI Model



Summary

- **Driving factors for this solution**
 - Increasingly critical need for cashflow forecasting accuracy
 - Proven value of BI/DW solutions in the corporate marketplace
- **Why we believe this solution will happen**
 - Demand and subsequent implementation will follow similar path as ERP applications
 - Driven by forward thinking treasurers
 - Mandated by CFOs/ CIOs

Further Information

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Acronyms

- **BI** = business intelligence
- **DW** = data warehouse
- **A/R** = accounts receivable
- **A/P** = accounts payable
- **ROI** = return on investment
- **FTE** = full time equivalent