TREASURY RESOURCES
@ PhoenixHecht.com

This presentation was originally given by:

Bruce Harris
Enron Credit

At the 2001 Windy City Summit

For questions about this material contact Bruce at:

bruce.harris@enron.com

Market-Based Credit Risk Management

Bruce Harris
Enron Credit
www.enroncredit.com

Growing Challenges to Credit Risk Management

- **Global commoditization of products and services**
- **Exponential growth of online commerce**
  - Increasing speed of business transactions
  - Influx of new counterparties
- **Contracts vs. capital**
- **Energy companies in particular are exposed to volatile energy prices and margining lags**
- **Need more sensitive, market-driven credit information**

Key Presentation Messages

- **Measurement - Risk of extending credit must be accompanied by appropriate return**

- **Monitoring - Credit exposures can be tracked in real-time**

- **Management - Credit exposures can be quickly hedged and, where appropriate, diversified**

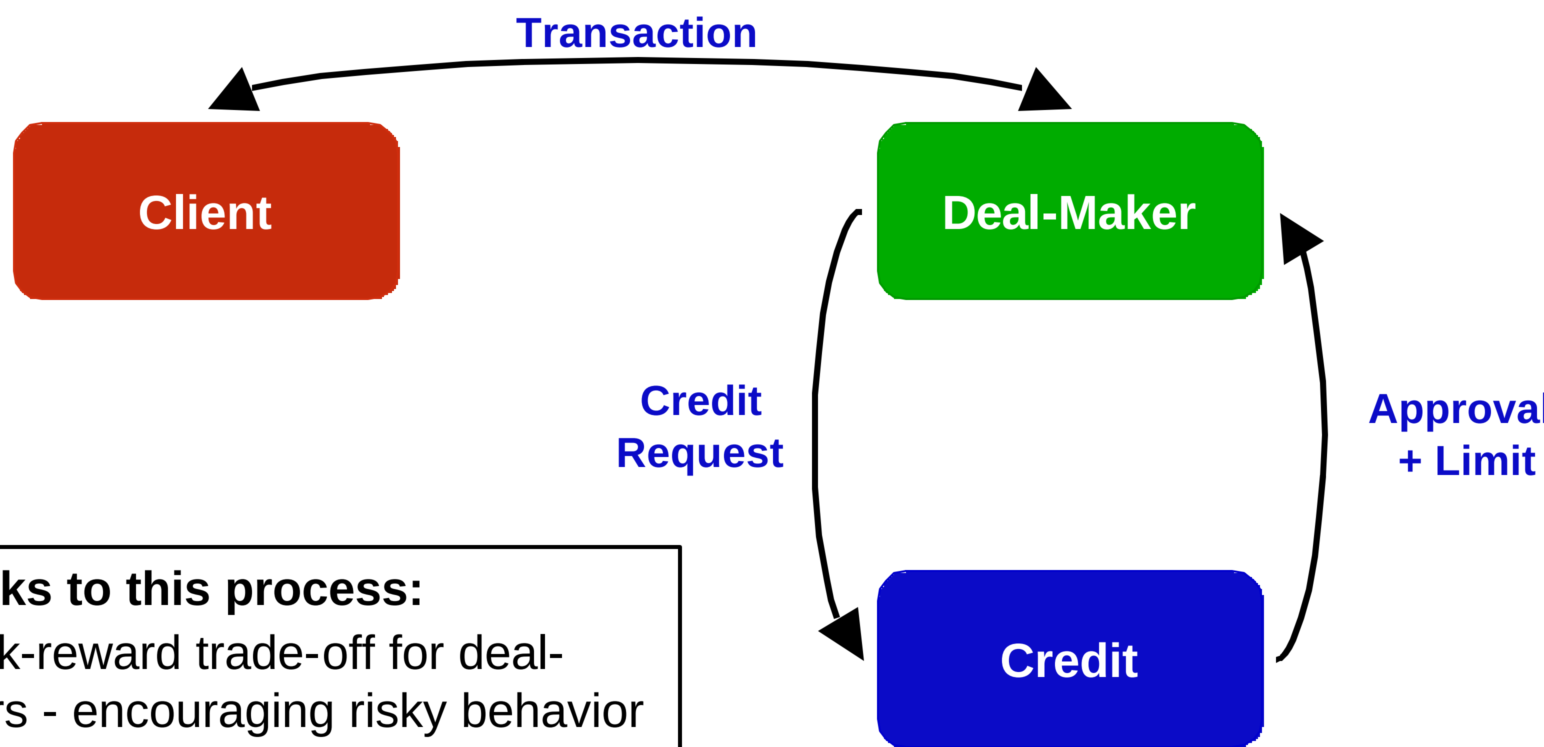
A New Process for Credit Risk Portfolio Management

The cost of credit is determined by the market in real-time.

Measure the risk/reward profile of extending credit

Traditional Credit Risk Management Process

Binary Credit Decisions

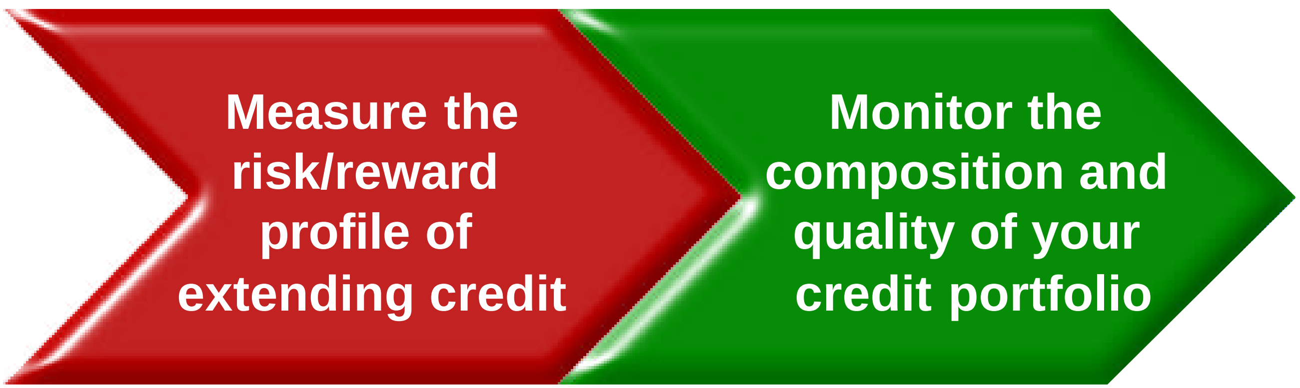


Drawbacks to this process:

- No risk-reward trade-off for deal-makers - encouraging risky behavior
- Concentration risk is ignored
- Credit risk is often not transferred - we wear the risk of our industry

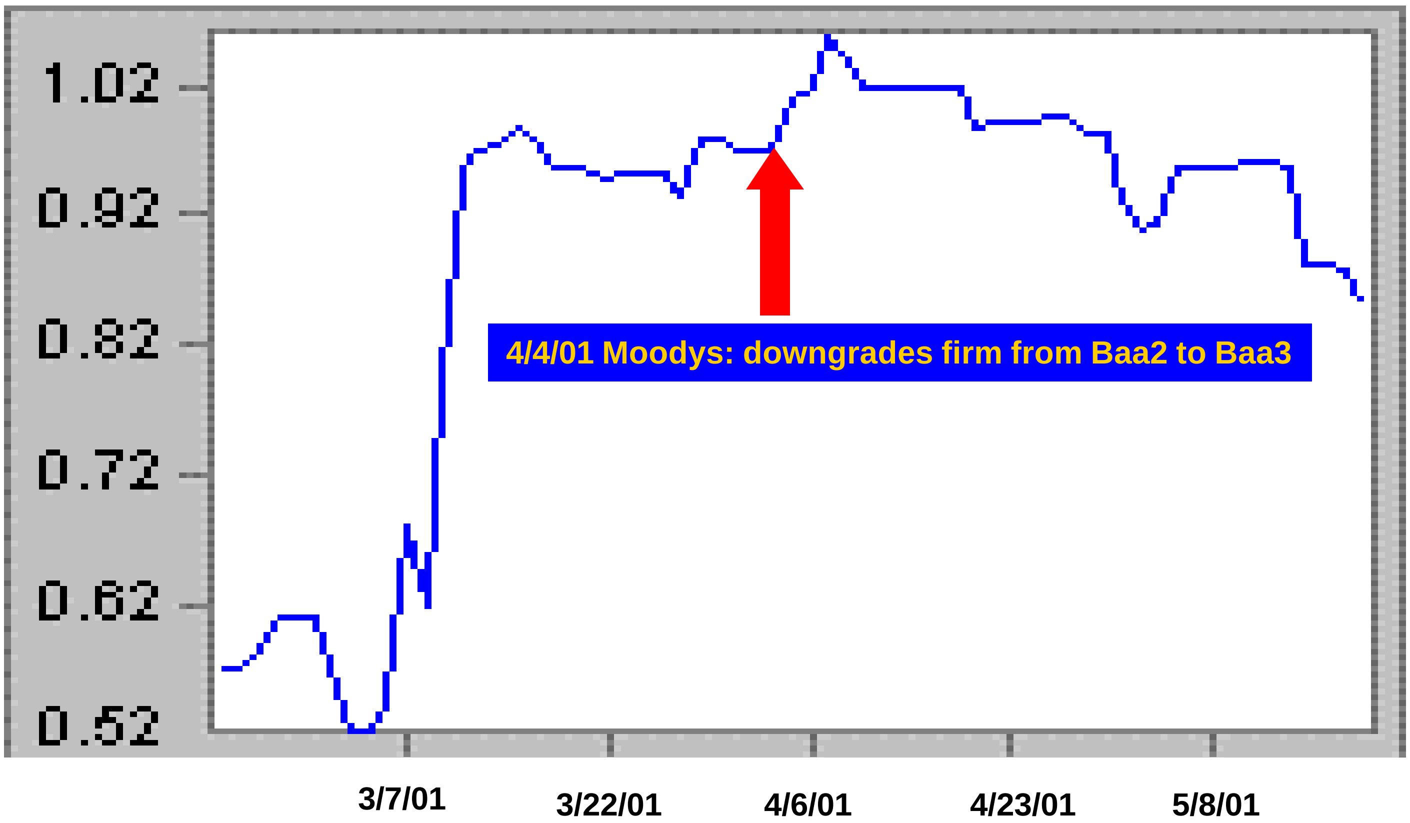
A New Process for Credit Risk Portfolio Management

The cost of credit is determined by the market in real-time.



Credit Spreads Can Be Predictive of Downgrades

A Fortune 500 industrial company



S&P has not taken any action on rating downgrades since 1999

Third-Party Monitoring Tools

- **Enron Credit**
- **Rating agencies**
- **Other third party modeling providers**
  - Equity volatility models
  - Private firm models

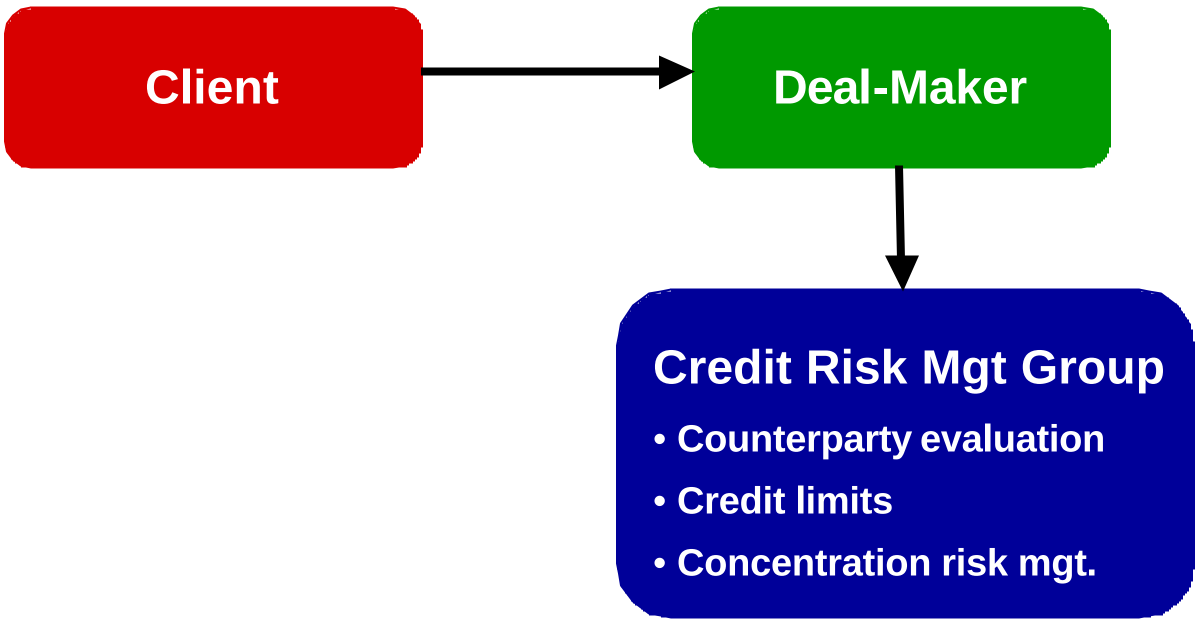
A New Process for Credit Risk Portfolio Management

The cost of credit is determined by the market in real-time.

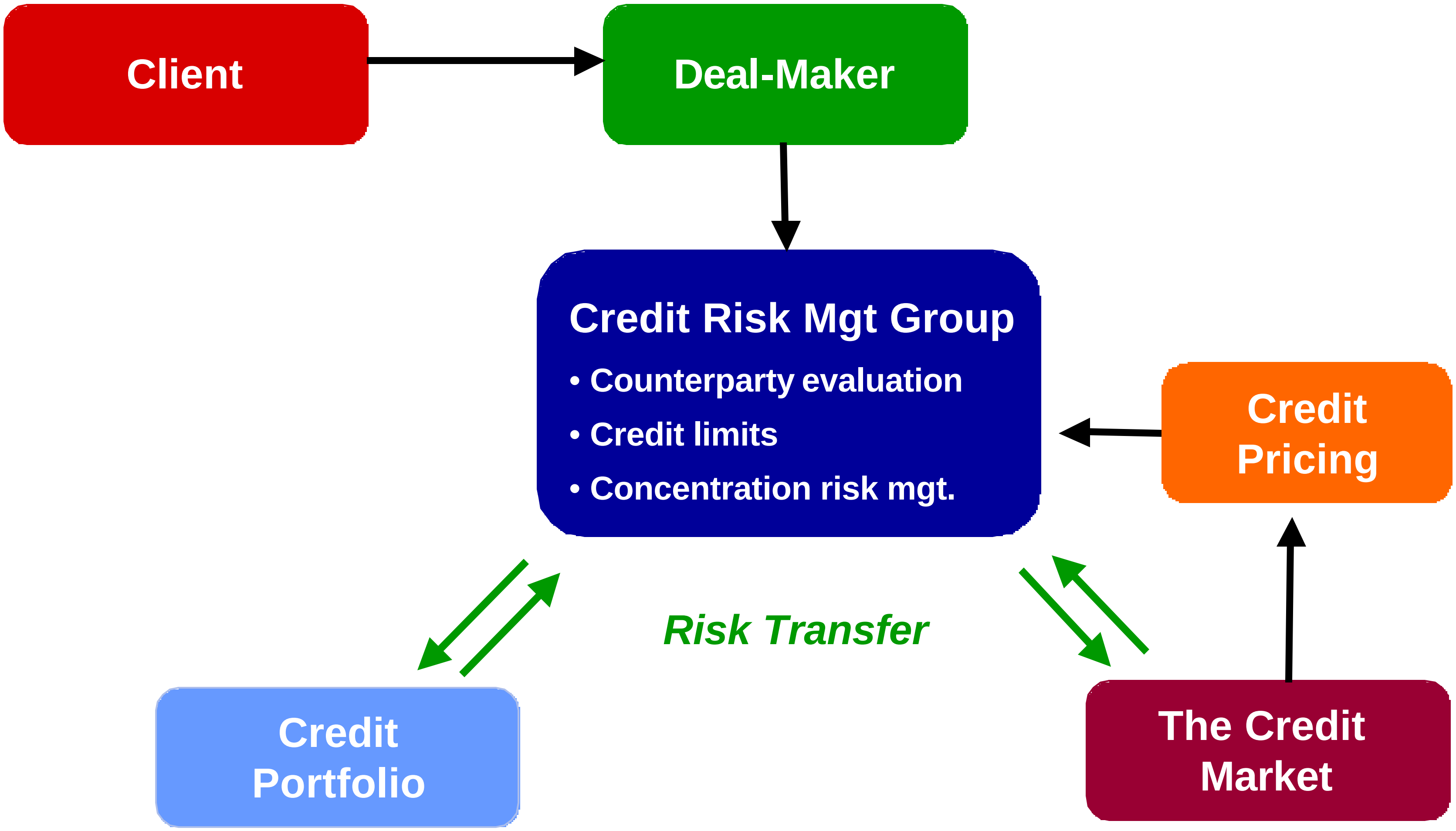
Measure the risk/reward profile of extending credit → Monitor the composition and quality of your credit portfolio → Manage and diversify your credit exposures

Companies who effectively manage credit risk will have a competitive advantage

Implementing the New Credit Risk Management Process

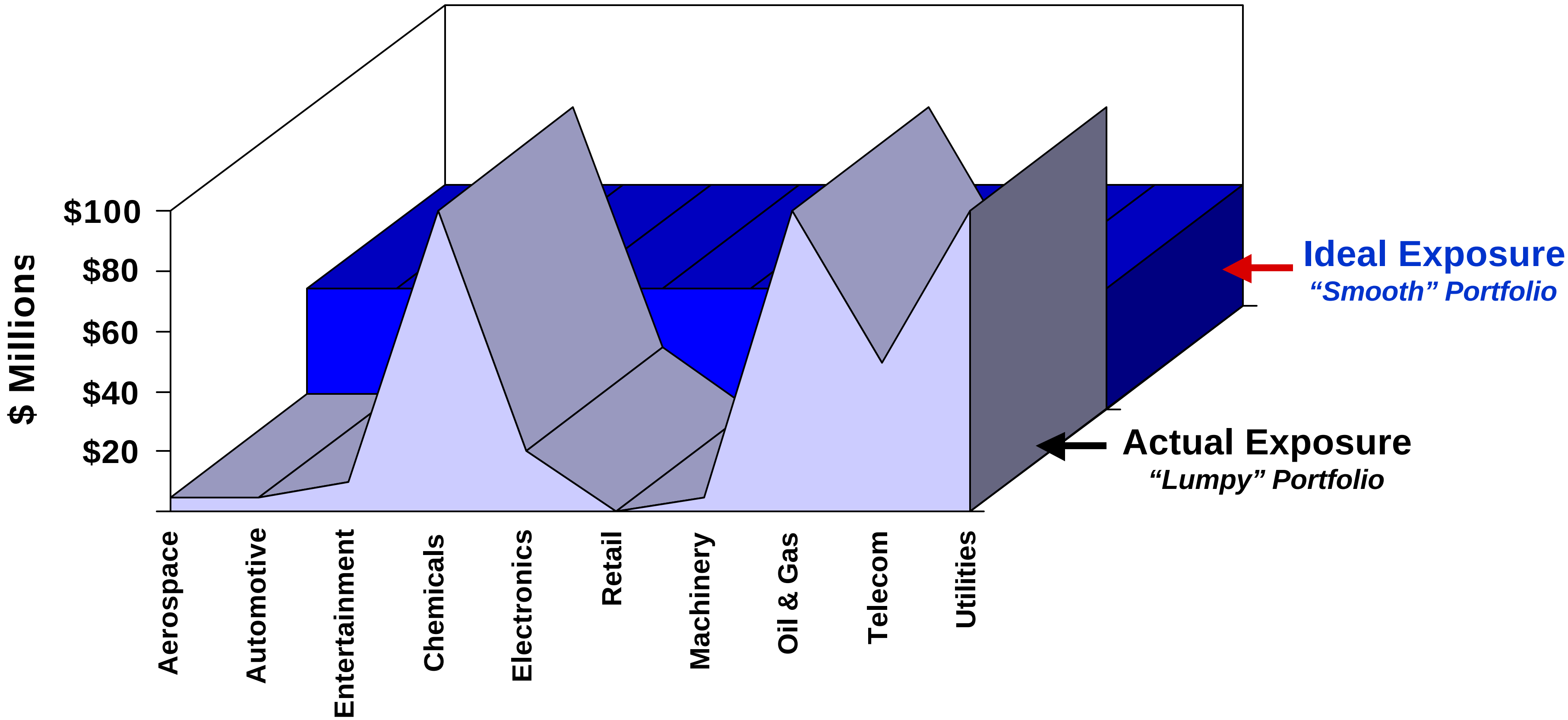


Implementing the New Credit Risk Management Process



Risk Can Be Diversified Through Active Portfolio Management

- **Many companies have concentrated exposures**
- **By actively managing their credit portfolios, firms can spread credit risk across many industries and benefit from diversification**



Third-Party Risk Management Tools

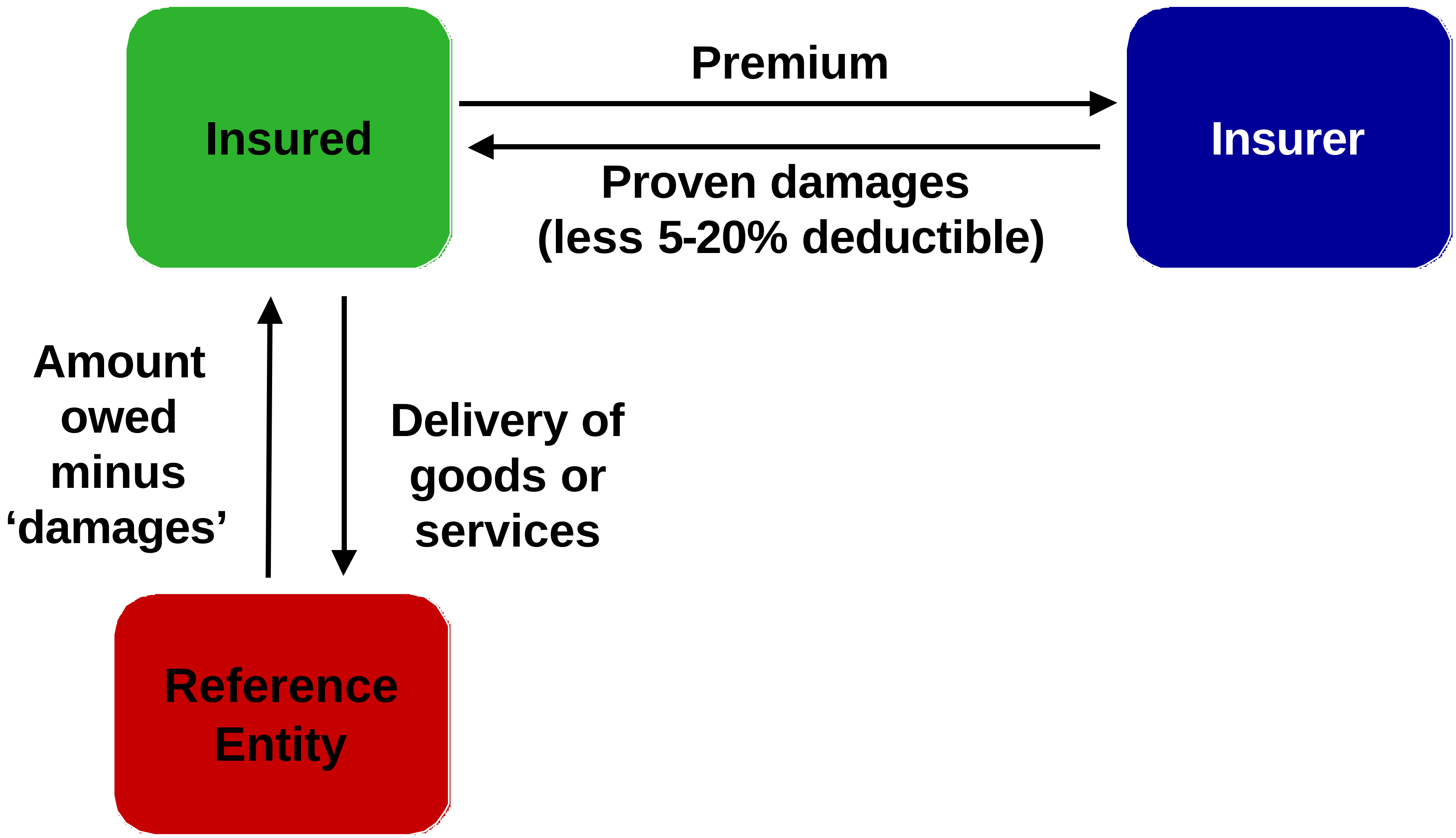
- Credit Insurance
- Credit Default Swaps
- Digital Bankruptcy Swaps

Credit Insurance

- Available from insurance companies & financial underwriters
- Covers non-payment risk due to bankruptcy or political events
- May be cancelled due to changes in financial position, usually with a 30 day notice period

Credit Insurance Structure

Example



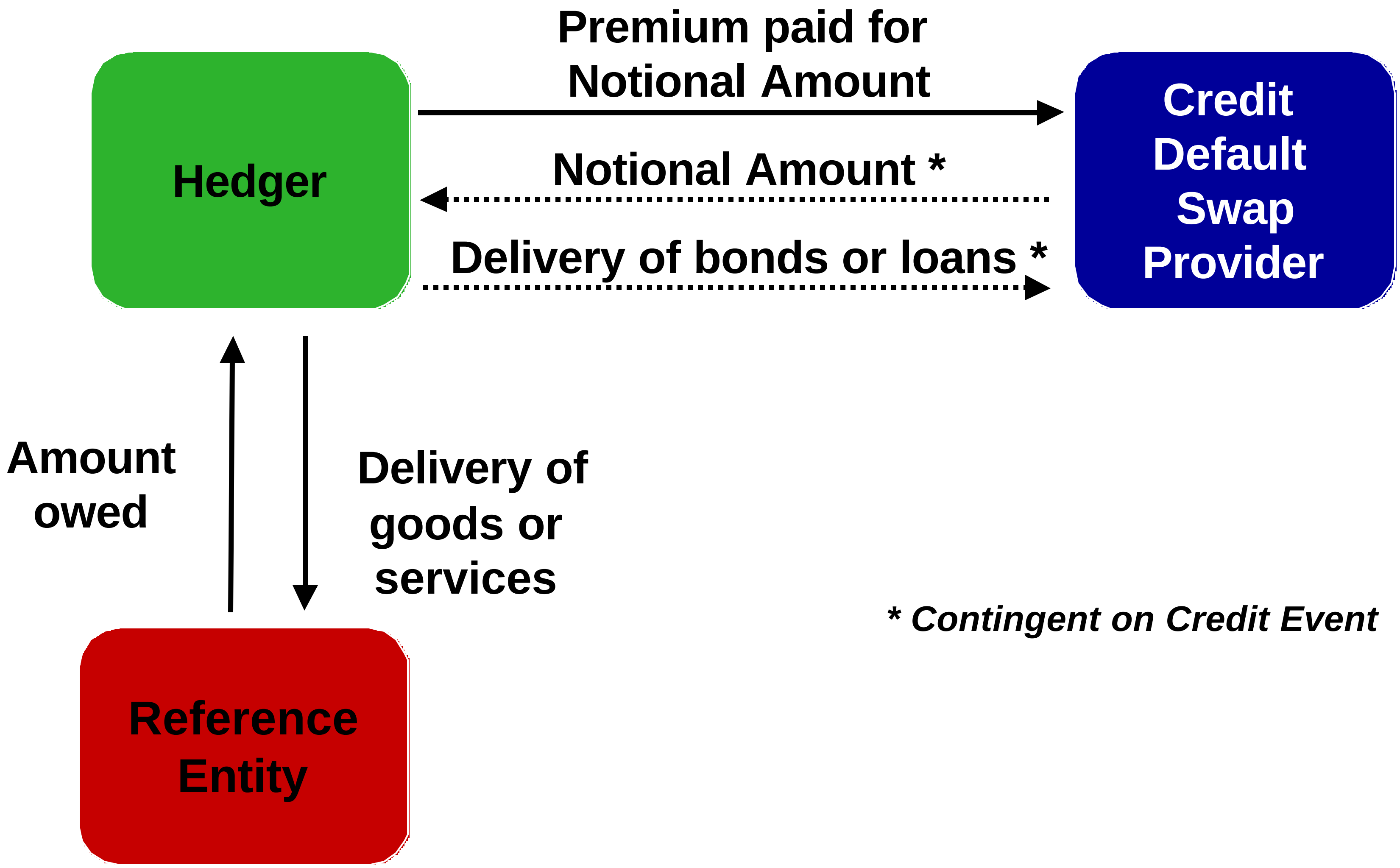
Credit Default Swaps

- **Most commonly traded credit derivative**
- **Use standard master agreements developed by International Swaps and Derivatives Association (ISDA)**
- **Designed to hedge non-payment risk in financial obligations (bonds, loans, other debt) and mirrors default language in lending covenants**
  - Bankruptcy
  - Failure to Pay
  - Obligation Acceleration
  - Restructuring
  - Repudiation/ Moratorium

Technical Defaults

Credit Default Swap Structure

Example



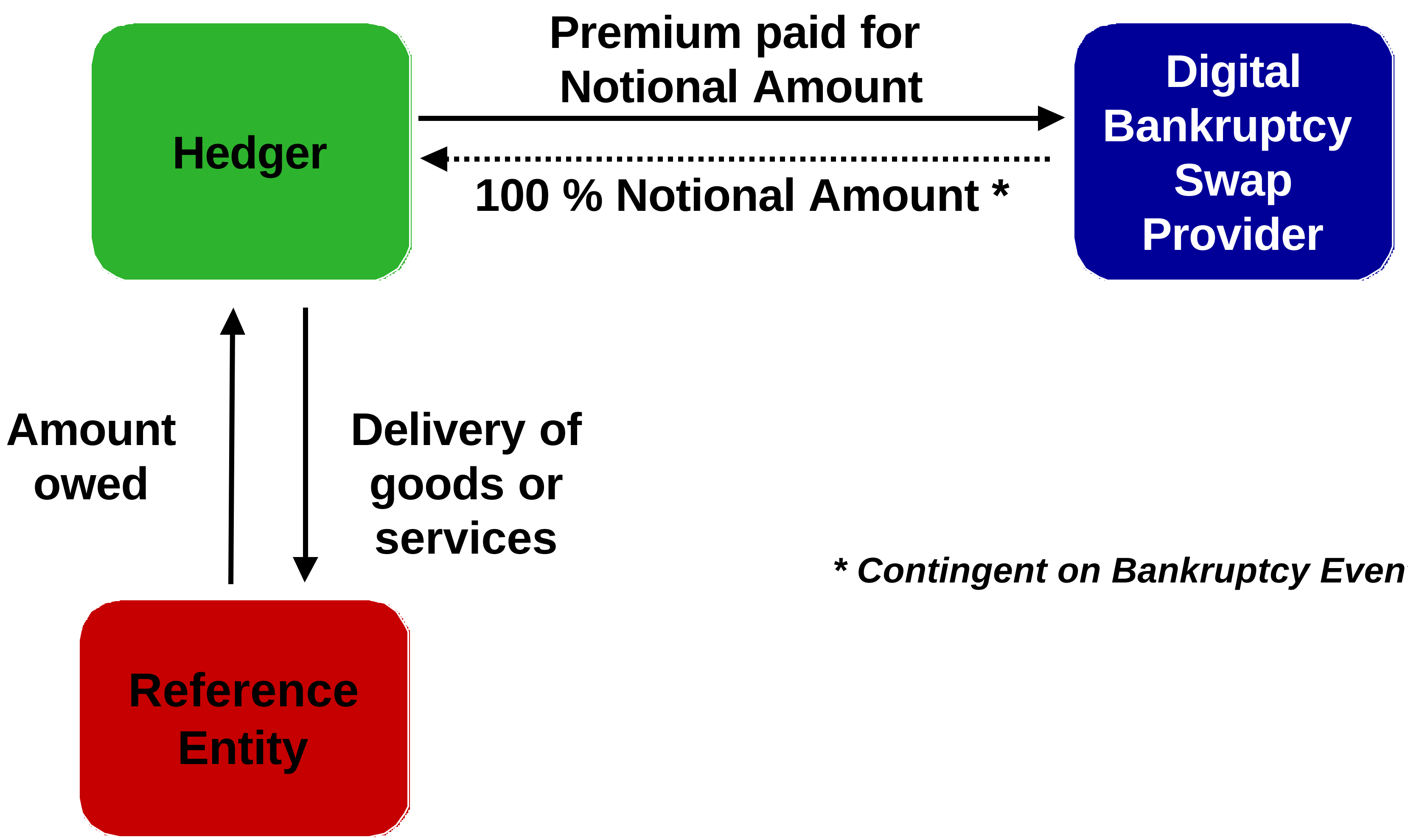
** Contingent on Credit Event*

Digital Bankruptcy Swaps

- **Alternative to credit default swaps, designed for corporate use**
- **Bankruptcy is the sole trigger**
- **Designed to provide a liquid product with which a firm can hedge its counterparty credit risk such as:**
  - trade receivables
  - supplier financing
  - strategic/business disruption risk

Digital Bankruptcy Swap Structure

Example



** Contingent on Bankruptcy Event*

Credit Protection Grid

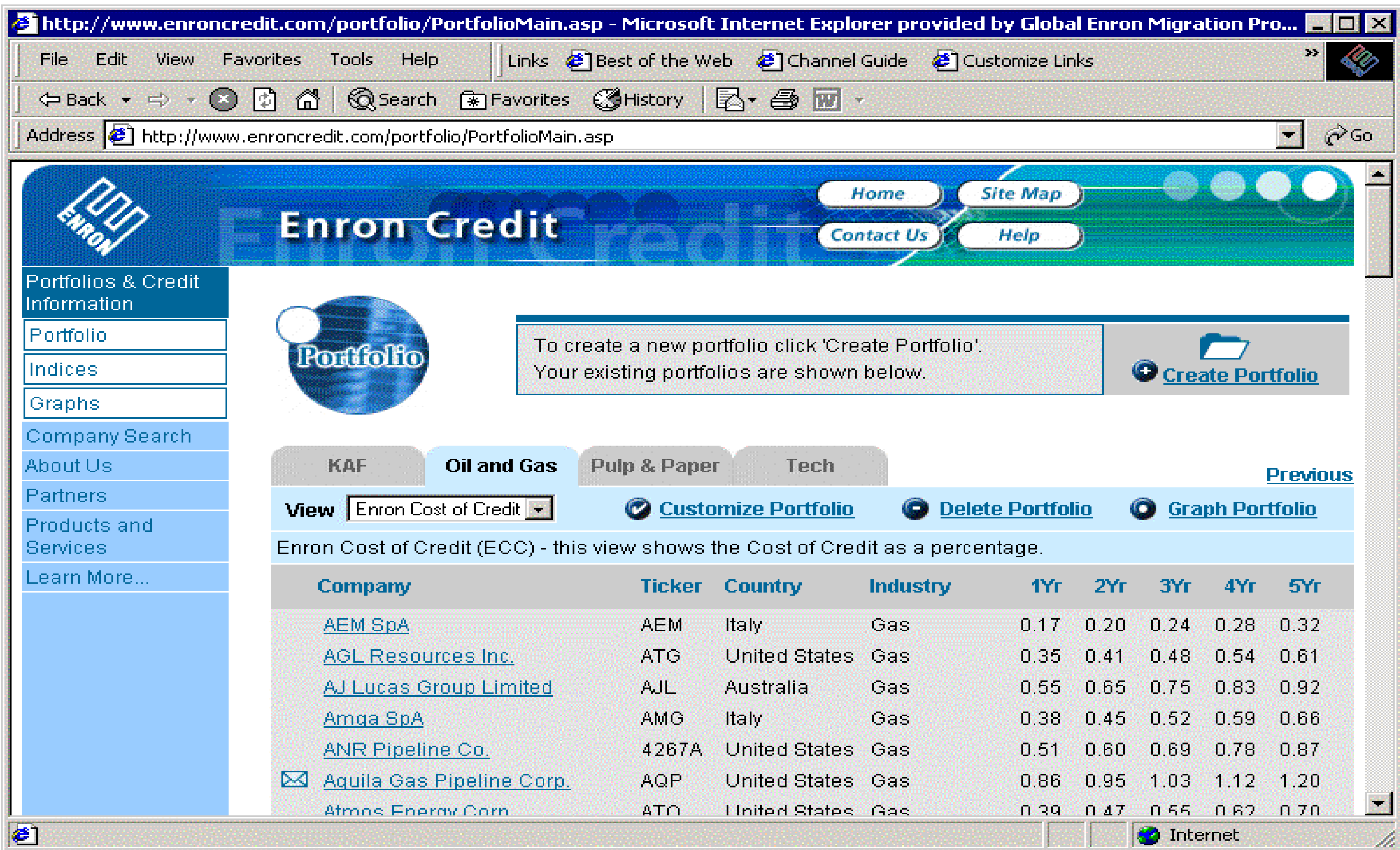
	Digital Bankruptcy Swap	Letter of Credit	Credit Insurance	Credit Default Swaps
Suitability	General Corporate	Export/import	General corporate	Financial Institution
Clarity of Credit event	Definite	High	Moderate	High
Size of payout	Full principal	Full Principal	Estimated Loss	Variable
Time to payout	5 days	5-30 days	2-6 months	3 days-2 months
Pricing transparency	High	Low	Low	Moderate
Ease of execution	Standardized/online	Days	Months	Standardized
Business restrictions	None	Variable	Moderate	None
Flexibility	High	Low	Low	High
Liquidity	High	Low	None	Moderate
Confidentiality	High	High	Moderate	High

Benefits of a Market-based Approach

- **Maintain customer concentration without credit concentration**
- **Prevent unexpected losses through vigilant review of counterparties**
- **Objective pricing of risk/reward parameters**
- **Lower internal reserve requirements**
- **Efficient risk transfer**
  - Faster transaction speed
  - Flexibility

www.enroncredit.com

www.enroncredit.com provides credit information on more than 10,000 companies



Enron Credit

www.enroncredit.com

Credit-desk@enron.com

Houston 713-853-5077 or 888-337-9876
London 011-44-207-783-5151

Bruce Harris
Houston
713-853-0950
bruce.harris@enron.com