Living on the Bleeding Edge In The Financial Industry

Using Clojure, AMQP, Chef, Cucumber and JRuby in the Financial Industry

Philadelphia ETE, April 2010

Algorithmics, Inc.

Risk Management

Collateral Management
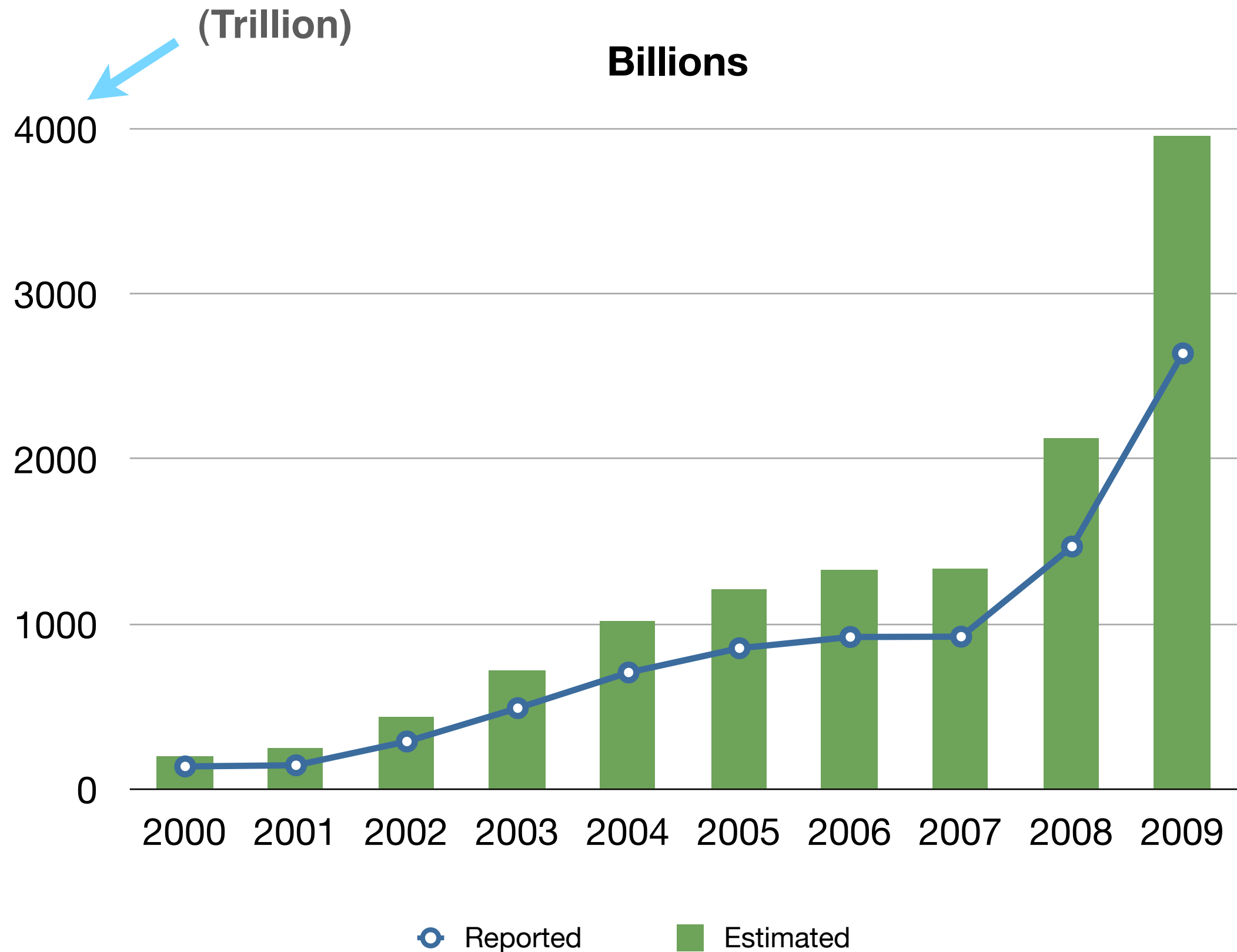
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Ok, WTF is Collateral Management?

Reduces Credit Risks for
Unsecured Financial Transactions

Credit Risk == Debtor Fails to Pay

Unsecured Financial Transactions are
OTC (over the counter)

Billions

(Trillion)

From The 2009 ISDA Margin Survey

Reported   Estimated

Overview

- What do we all want?

  - What Challenges Did we face

- How did we do/get it?

- What did we do?

  - What challenges did we face

- What has it done for us?

What do we Want?

- Best People

- Best Technologies

- To Create: new code, not legacy

- Interesting Problems

- Best Process

Challenges

- Financial Industry: Conservative

- Management at your company: Conservative, Skeptical

- Programmers: Skeptical

- Language Choice (Clojure, Ruby), Lots of Open Source, AMQP

- Where do we go for support?

How did we do it: People

- Product Visionaries Sold Higher Ups on the Idea

- Time To Market Critical

- Aaron Built a Prototype *very* Rapidly

  - Demonstrated Value of Technologies

Project Given Green Light June 2009

How did we do it: People

- Aaron Invested in Philly Lambda
  - Organized, Brought in Speakers
  - Networked with Members
  - Bought Lots of Pizza

First Two Developer Hires July 2009

How did we do it: Support

- LShift: unlike many open source based techs, a company sits behind RabbitMQ

- We knew RabbitMQ was great, it was built on Erlang

- Erlang devs don't grow on trees in Philly

- Contracted with LShift to extend and accelerate product roadmap

What did we do?

- Small Team

- Agile Methodologies

- Pair Programming

- Continuous Improvement

What did we do: Small Team

- Focus on Automation
  - Chef for Provisioning
  - Cucumber for Acceptance Tests
- Lots of Other Small Automations
  - A Mindset, Core Value of Team

What did we do: Small Team

- Pair Programming
  - Skill Transfer Happens Quickly
- Bus Factor == Team Size
- Lost one of our best members in Feb: OM...meh

What did we do?

- Web Portal for the low end of the market

  - Ruby on Rails (JRuby), jQuery, YUI

  - Lots of Plugins, Gems, Libraries

  - Cucumber for automated testing

What did we do?

- Clojure for the 'router' logic
  - Concurrency is fantastically easy
  - JVM: It's the libraries(!)

Challenges

- Acceptance of the stack

- Finding Developers

- Learning These Technologies

- Integration

What has it done for us?

- Automated Testing and why it is win

- Automated Provisioning and why it is win

- Functional Programming and the reduction of errors

- Tiny components and ability to quickly adapt to changes in the product

Conclusion

- We Came

- We Learned

- We Conquered

- We 're hiring