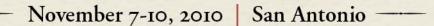
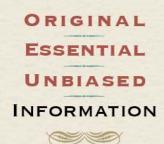
AFP® Association for Financial Professionals® Annual Conference





Top Down, Bottom Up Risk Best Practices to Elevate Your Treasury Team

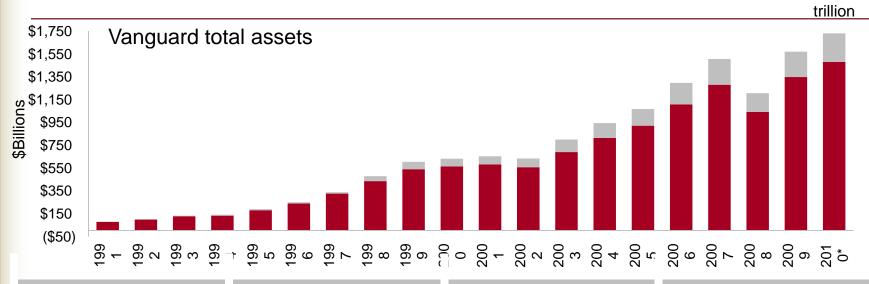
Robert Freiling Fund Financial Services, Fund Treasury Sr. Manager Vanguard

Agenda

- Vanguard at a glance
- Fund Financial Services (FFS) Fund Treasury
- FFS Fund Treasury risk and control program
 - Top down, bottom up approach
 - Risk model
 - Six sigma and risk/control integration
- Leadership growth and development
- Crew engagement
- Risk and control program performance results



Vanguard at a glance



Vanguard profile

- No outside owners: we serve only client interests
- An enduring commitment to lowering costs because low costs often provide a distinct advantage for investors
- 35 years of investment

Market leadership

Other

- Nearly \$1.5 trillion in assets under management (U.S.based mutual funds)
- Broad lineup of 164 mutual funds, ETFs, and other products

Investment management

- Active equity: leading institutional subadvisors
- Index equity: internal management provides state-of-the-art execution
- Fixed income: offering deep expertise and risk management

Depth of experience

 More than 12,000 crew based in Pennsylvania, Arizona and North Carolina

\$1.73

- Growing international operations including:
 - Asia, Australia, Canada
 - Continental Europe
 - Mexico, South America
 - United Kingdom

AFP[®] Annual Conference

U.S.-based mutual funds



Fund Treasury purpose and control objectives

Fund Treasury

- Capture payment inputs
- Process/report payment instructions
- Calculate investable cash

- Project cash investment
- Capture and report intraday trade activity
- Reconciliation activities

Mission Statement

To provide accurate and compliant Treasury services for the Vanguard mutual funds incorporating Vanguard Unmatchable Excellence, risk and control effectiveness and a goal of developing best in industry Treasury professionals

Best

Place to

Invest

Best

Place to

Work

Our values/culture, how we pursue our purpose

Discipline, Long-term Planning

Crew Growth, Empowerment VUE, Risk Control Culture Technology for Effectiveness

Client Relationships



Fund Treasury risk management timeline

Risk Awareness &

Assessments

- · Risk leads
- Treasury leadership
 - Entire teams

Risk & Control Governance

- Treasury leadership
- Internal risk champion
 - Risk leads and crew

2007 2008 2009 2010

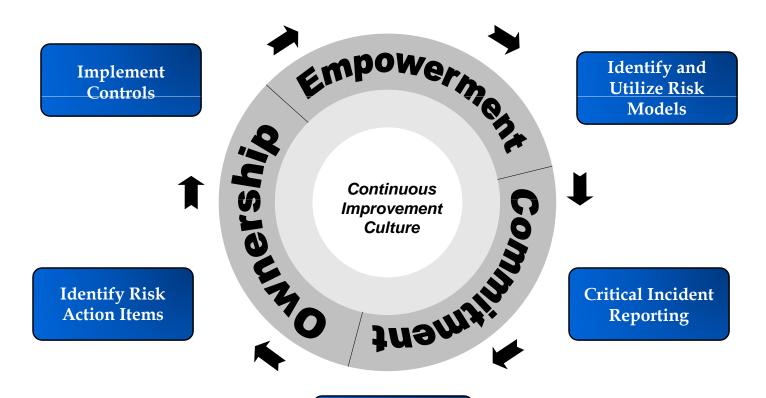
Control Manifests, 100+ control activities

- Risk leads
- Treasury leadership
 - Team SMEs



Fund Treasury Enterprise Risk and Control COSO-like framework

Document Control Manifest



Risk Committee Meetings



Top Down, Bottom Up Approach!



Treasury Leaders

Goal: <u>Lead</u> Treasury's risk/control efforts to mitigate the possibility that a risk occurrence will impact the achievement of Treasury's mission and core business objectives

Driven by: Treasury Management Team

How: Governance, risk models, incident tracking, leverage Control Manifests, Risk/Control driven planning and technology projects

Treasury Crew

Goal: Engage in team's process risk related activities to achieve team business objectives

Driven by: Treasury Crew of all Levels

Outputs: Process Improvement Ideas (PIPs), daily involvement in improvement efforts, logging risk incidents, partnership with leaders



Fund Treasury Six Sigma and risk integration

Six Sigma

Risk/Control

Data driven management Histori

Historical looking analysis

Key metric dashboards

Key risk models

Process Improvement

Ambassadors

Pipeline (PIPs)

Risk governance meetings

Metrics meetings

Measurement and monitoring of key risks

Process mapping

Risk assessments

Metrics placemats

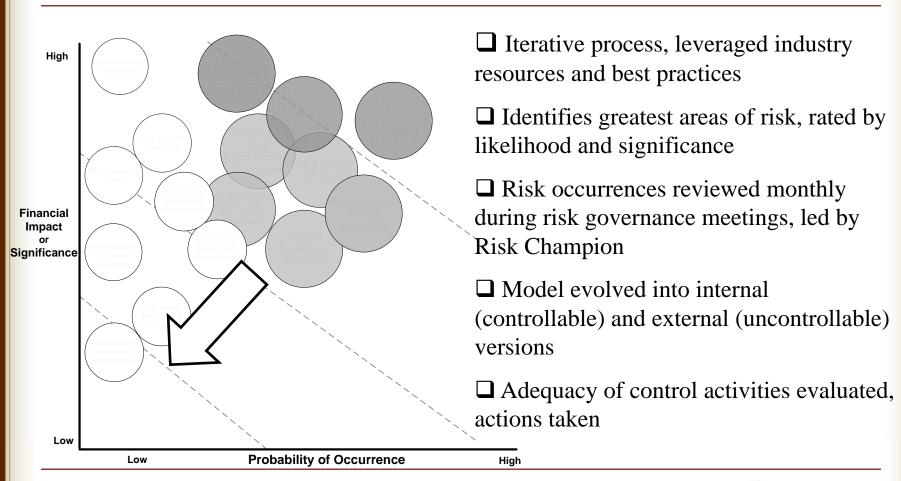
Crew process improvement sessions

Risk/Control placemats

Fund
Treasury
Unmatchable
Excellence



Fund Treasury risk models







Fund Treasury leadership growth and development

- Evolved from Risk Awareness to:
 - assessments and hands-on application of tools
 - risk models
 - control activity adequacy measurements
 - risk/controls drives business planning strategy decision making!
- Full accountability and ownership of control activities
- Leadership lens
 - Endogenous inward looking at what we control
 - Exogenous outward, we don't control
 - Preparedness, readiness, react, communicate



Endogenous (inward) vs. Exogenous (outward) Leadership takeaways

15% Internal, controllable

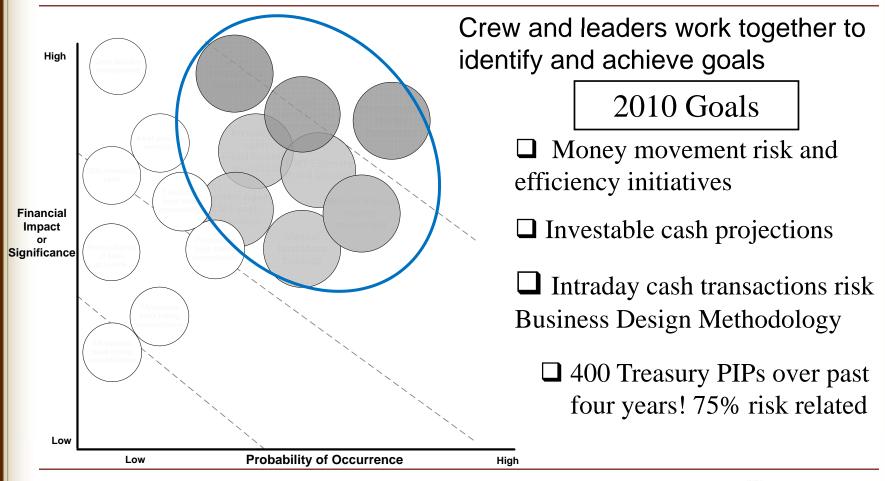
85% External, uncontrollable

Uncontrollable events are more common:

- React effectively
- Understand downstream impacts
- Build communication plans
- Establish end-to-end process relationships
- ☐ Enhance contingency plans
- Crew engaged via table top sessions
- □ Prepare for black swans catastrophic-like risk events



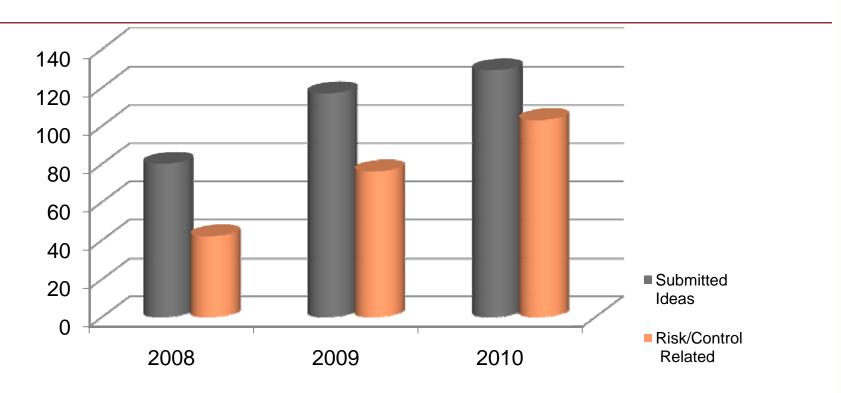
Fund Treasury annual improvement goals Leaders/crew focus on greatest risks for improvement







Fund Treasury crew engagement Increasing risk improvement ideas

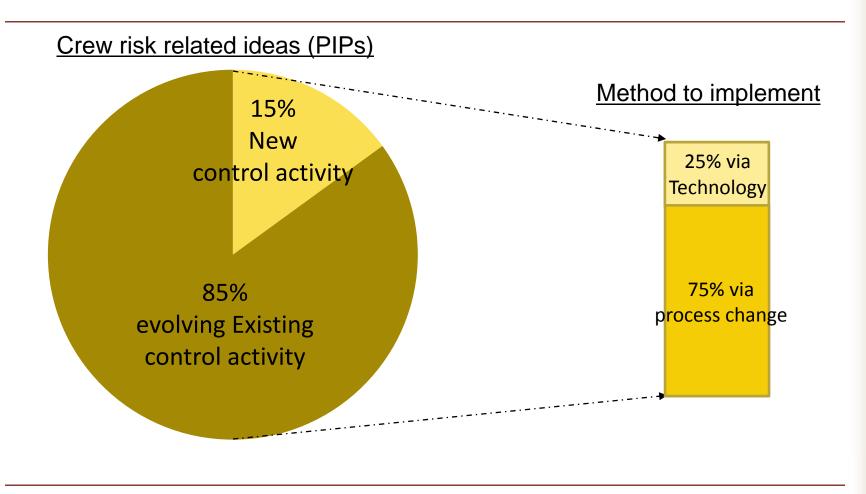


"The PIP program provides an avenue where I can increase efficiency and reduce risk resulting in better service for our clients." Treasury crew member

"The PIP process has truly empowered the crew. They take pride in improving their team processes and continually challenge each other to come up with unique solutions to VUE or Risk concerns." **Treasury manager**



Fund Treasury risk management Crew engagement – idea types





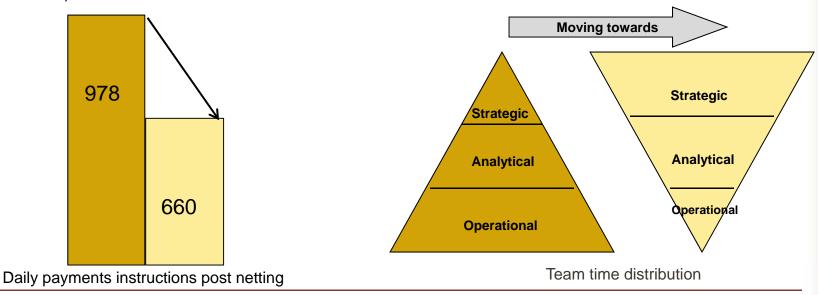
Fund Treasury business plan Risk as a key component





Fund Treasury results Money Movement/Payments

- Moved to SWIFT platform in 2007 for all TA/custody payments
 - Risk assessment was a key driver for SWIFT automation
- 97.8% STP with 2.6 million instructions annually
- 5+ improvement/risk related ideas per crew, annually
- Improved sigma from 5.56 to 5.78
- 2010 netting payment project elevated in October 2010 mitigated large wire risk, built efficiencies and reduced overall wire costs





Fund Treasury results Cash Management

- 175 process improvement ideas submitted by crew members
- Risk assessments primary driver to modernize three core cash systems
- Measureable improvements for cash and billing processes
- Consecutive year winner for Corporate Six sigma initiative of the year
 - Both projects were Risk/Control efforts
- Risk based business design methodology rolled out, efforts aligned for 2011

