

The Three Reasons Investors Want You Off Spreadsheets

Presented by:

Larry Tabb, Founder & CEO, TABB Group

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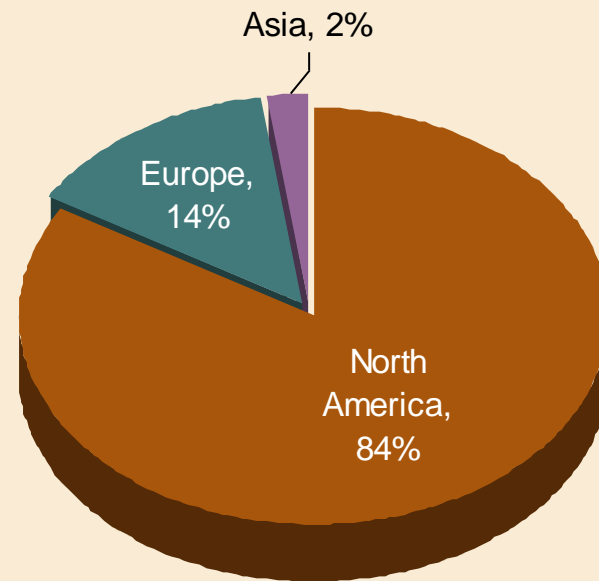
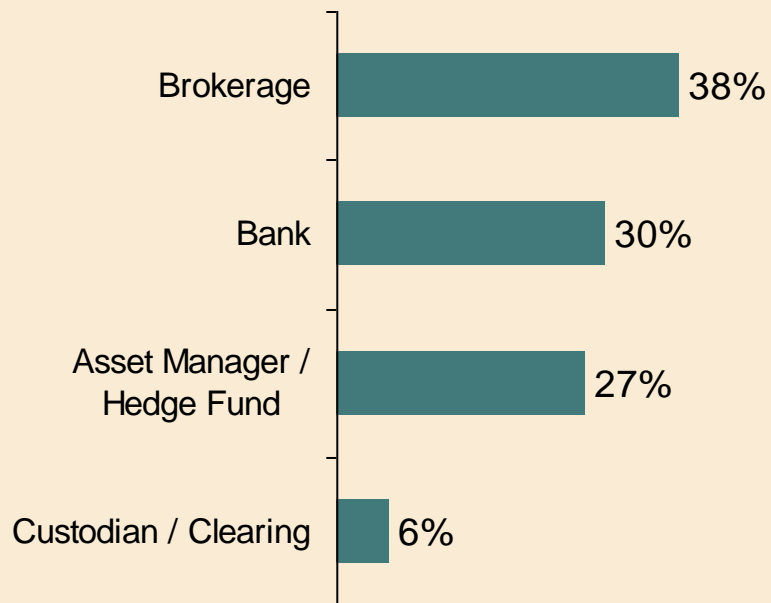
Spreadsheets and Capital Markets:

Creating A More Robust Enterprise

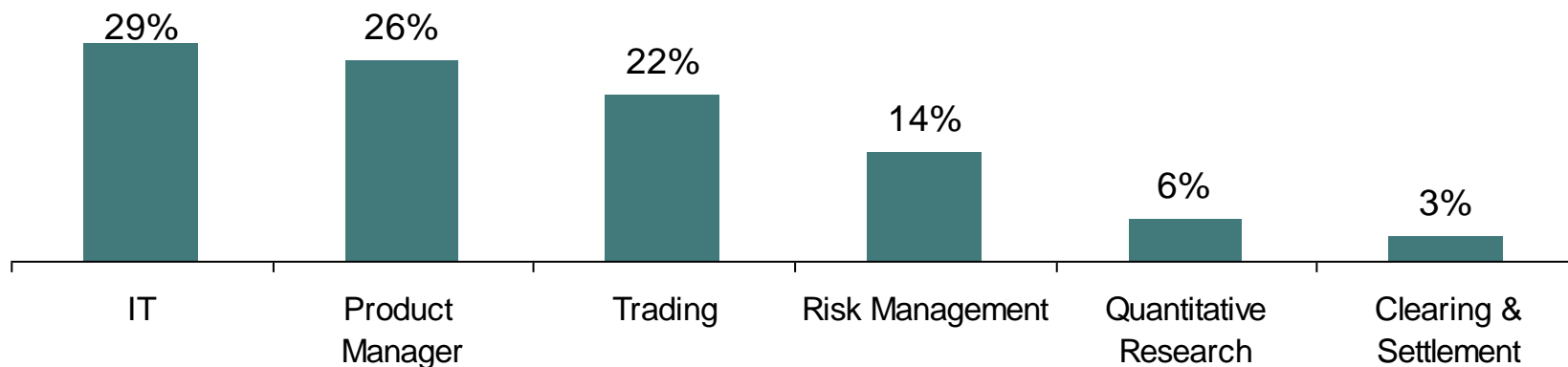
Larry Tabb

65 responses from a broad range of capital markets organizations

Survey Demographics

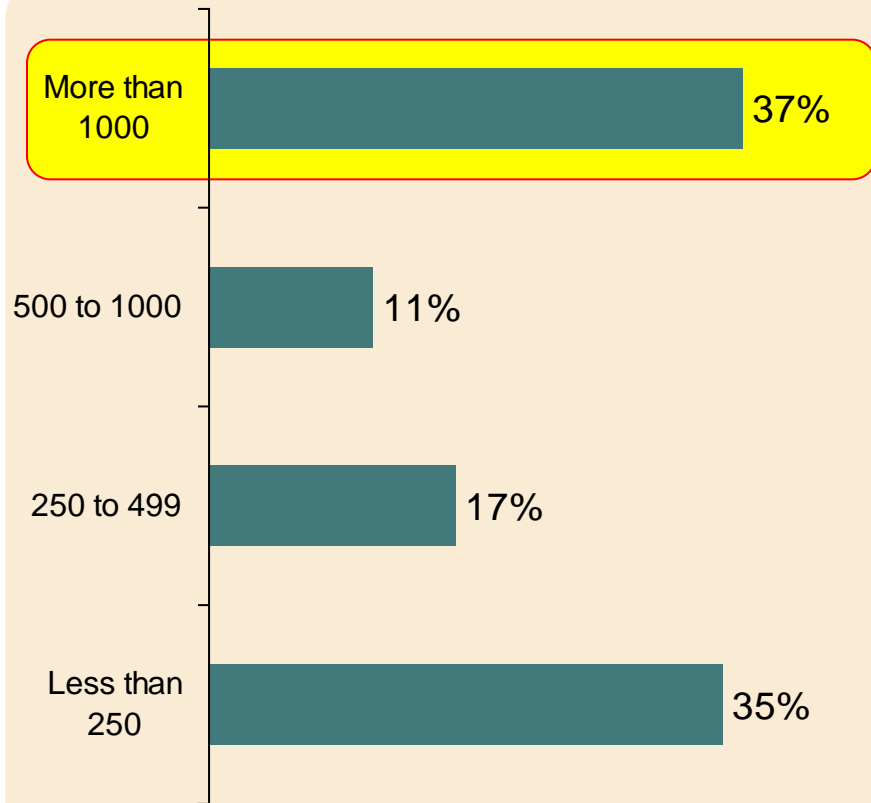


Participants' Roles

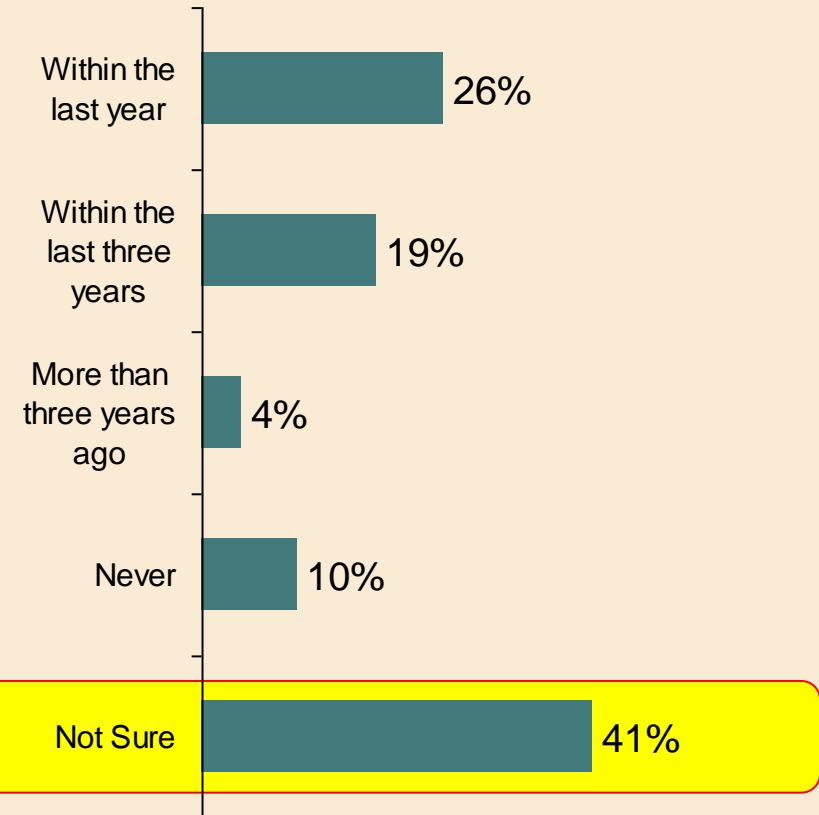


The number of spreadsheets that are essential for day to day operations is often in the thousands

How many business critical spreadsheets exist in your organization?

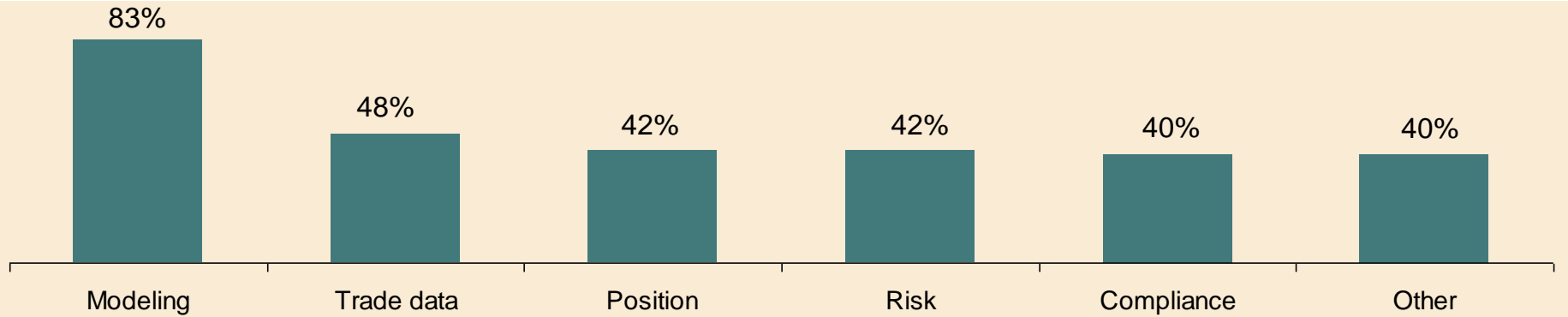


When did you last audit the complexity and potential cost of errors of spreadsheets?

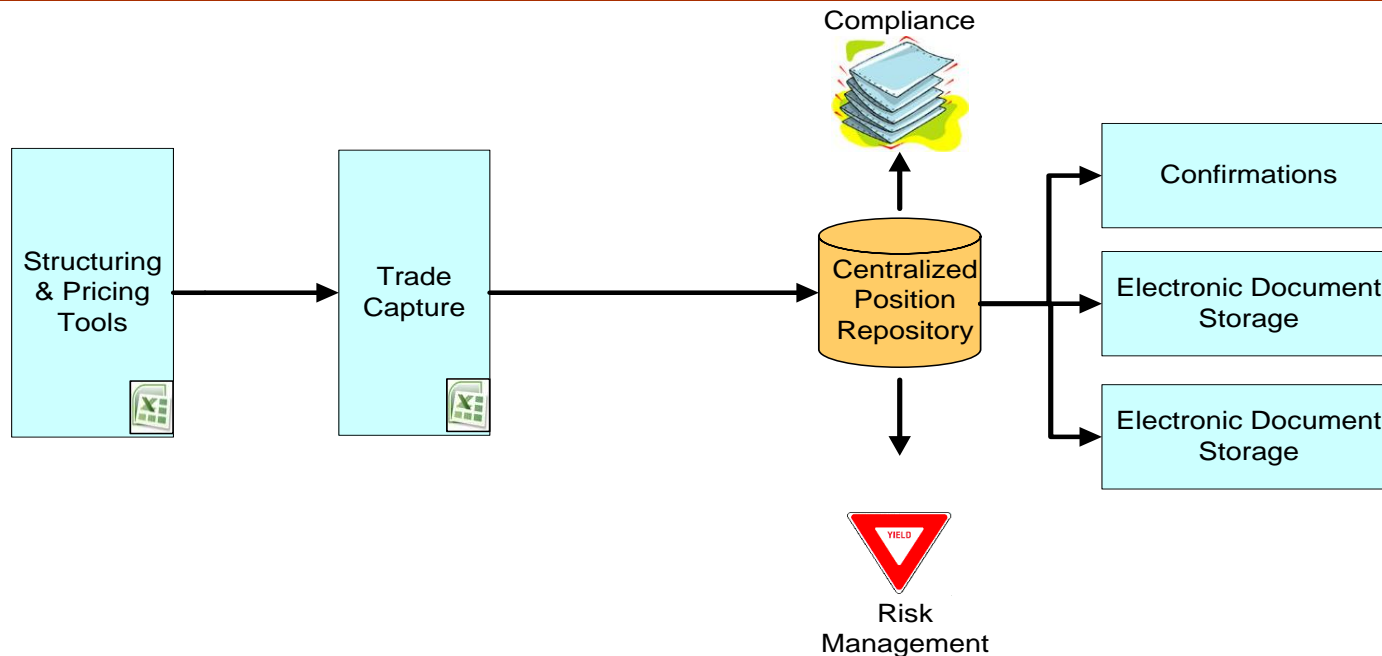


83% of participating organizations use spreadsheets for modeling, analyzing and pricing financial instruments

Where in the trade workflow are spreadsheets used?

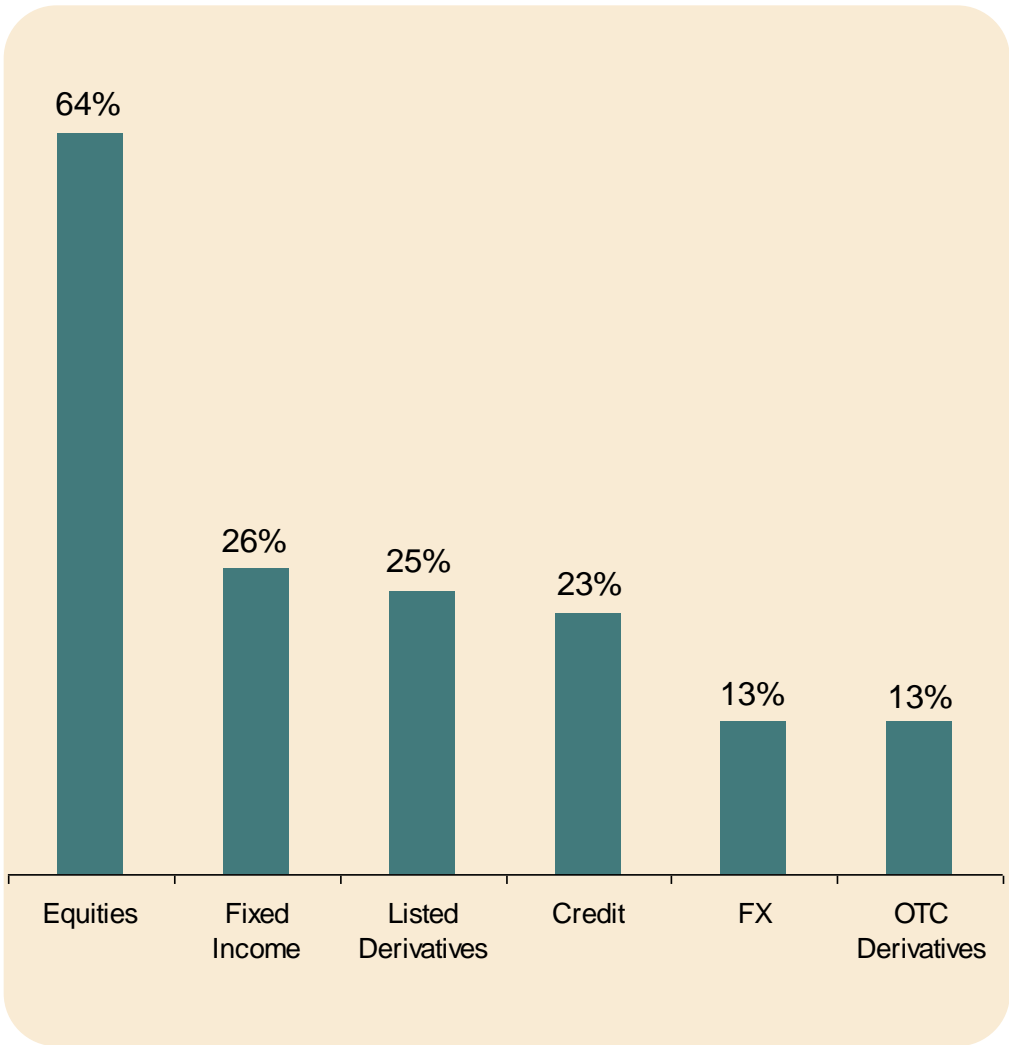


Trade Workflow

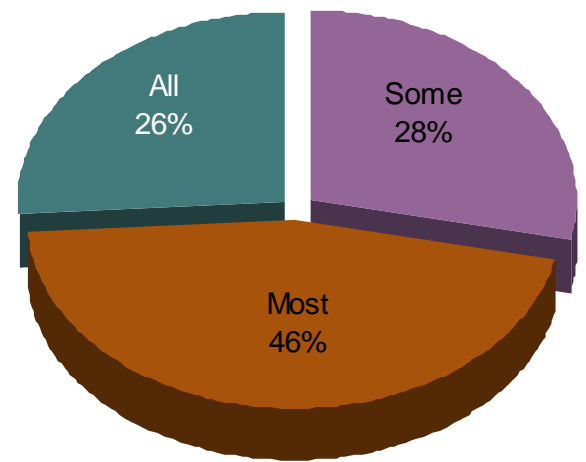


While Equities are a very common asset class, firms are heavily dependent on Excel for modeling

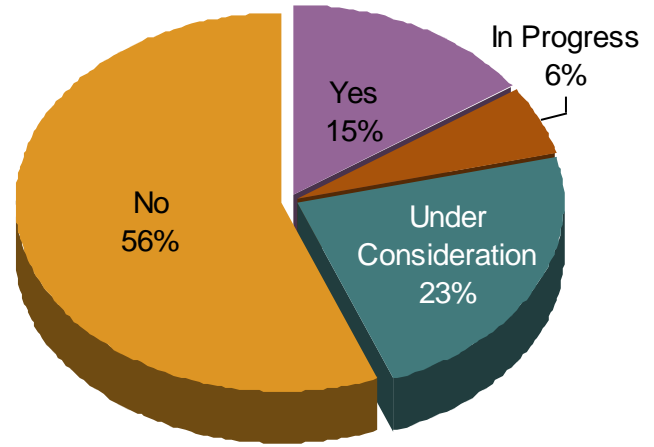
Asset Classes for Which Excel is Used for Modeling



How much is done in Excel?

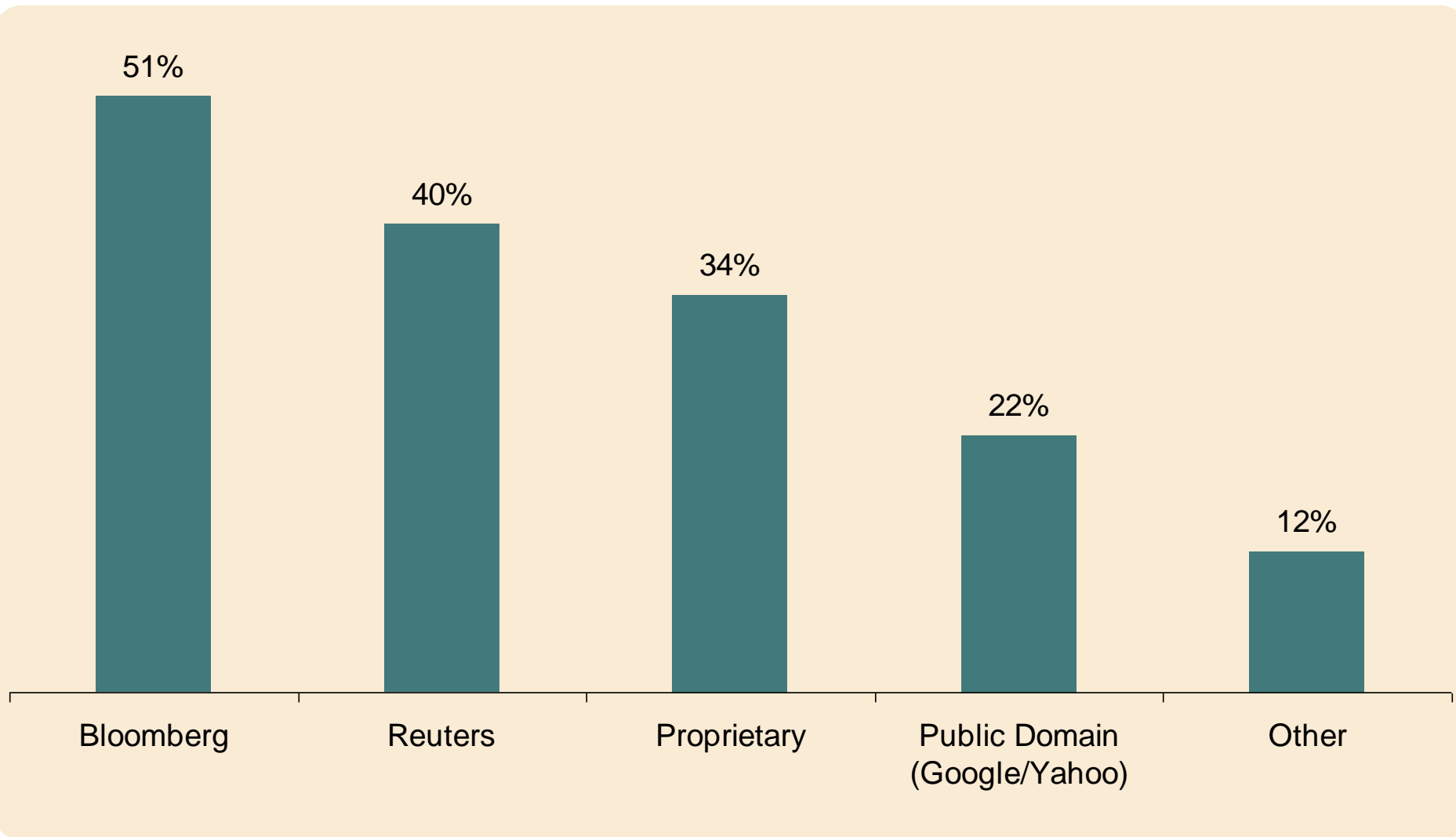


Do you integrate analytics providers?



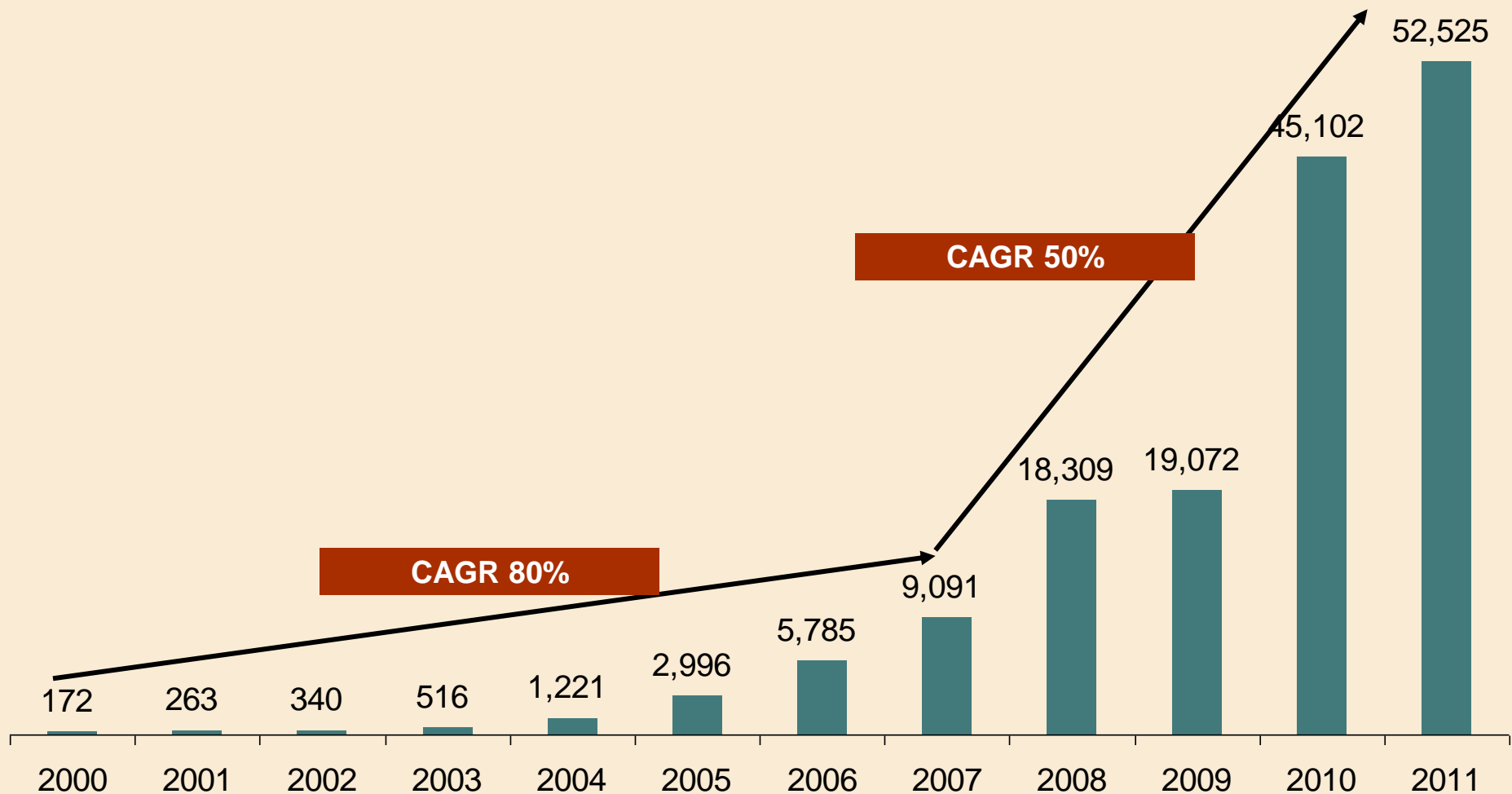
In order to facilitate modeling, over three-quarters of users bring market data into the spreadsheet

When using spreadsheets that pull in real-time market data, what is the source of the data?



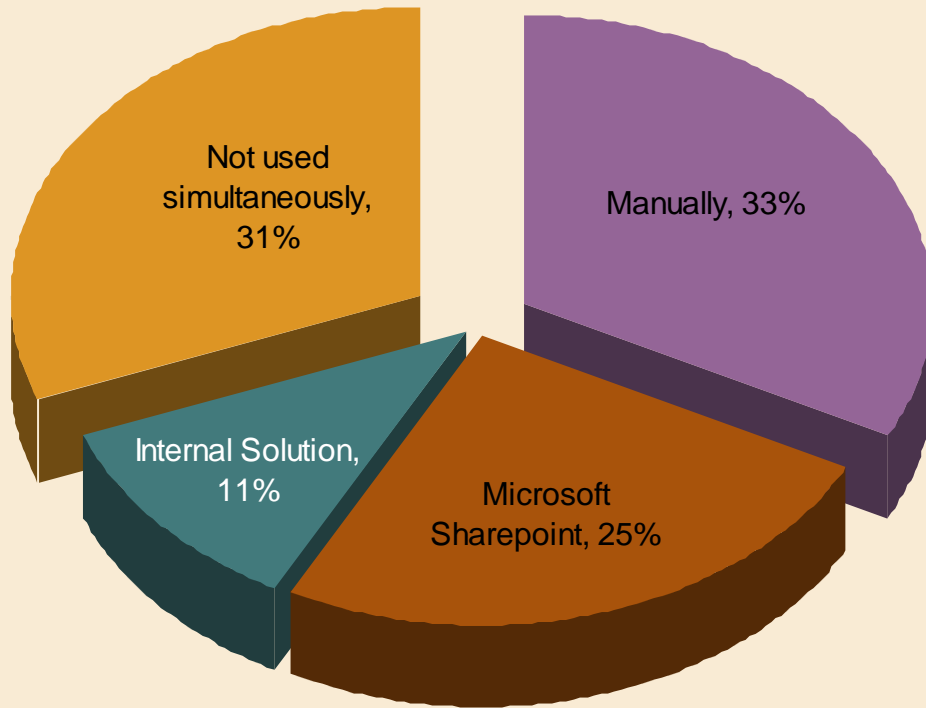
Concurrently, modeling needs to keep up with growing amounts of data

12 Years of US Equity Options Messages = Over 155 Terabytes



Managing shared spreadsheets is often done manually which creates risk of overwriting critical information

How Do You Manage Multiple Users of a Spreadsheet?



Spreadsheet Collaboration

- ▲ Spreadsheets often move from front-office to back-office and from clients to banks
- ▲ Changes should be tracked in an effort to detect erroneous changes or intentional fraudulent updates
- ▲ Manual auditing increases the risk of deleted workbooks and files or changes to data or formulas
- ▲ Increasingly regulators & investors are pushing firms/funds away from spreadsheets to more processing / production platforms

Moving from structuring to processing requires more formal risk & accounting controls which are difficult to deploy with spreadsheets

	Formulas	Computing	Management	Storage	Market Data
Structuring	Excel-based formulas & User Defined Functions	Determined by time constraints and complexity	File-based	File back-up on user request	Manual inputs or user-defined links
Pricing	XLLs, DLLs, & other external code		Cell-based	File-back up on user request	Limited manual inputs; links controlled
Trade Details	NA		Cell-based	Central database	NA
Reporting	XLLs, DLLs, & other external code		File-based	NA	All administered links
Valuation / Settlement	XLLs, DLLs, & other external code		Cell-based	Central database	All administered links

User Flexibility

Enterprise Controls



Dodd-Frank makes operational robustness an increasingly important aspect of financial markets

- Living wills / resolution authority
- Swaps carve out (Lincoln Amendment)
- Volcker Rule
- Central Clearing
- Migration from OTC to Swaps Execution Facility (SEF) Trading
- Enforcement Authority, Insider Trading, Disruptive Practices and Whistleblowers
 - ▲ Whistleblowers are entitled to protection and monetary settlements of between 20 to 30% of enforcement actions of over \$1m
- Basel III will also make capital more expensive requiring greater controls and operational efficiency

Conclusions

- Excel is a critical but worrisome aspect of the business
- While Excel is great for modeling & reporting
 - Enterprise control of Excel is challenging
 - Formulas can get stepped on
 - Spreadsheets lost and corrupted
 - Models can get too complex to be adequately vetted
- As products become more popular, firms need to migrate away from spreadsheets
 - Hard to validate data, models, and reporting
 - Hard to quality control, protect, maintain, and secure
- Migrate to more structured enterprise-class platforms
 - Tie into more formalized risk & processing systems
- The risk of not doing so can be punitive
 - Greater demand for transparency from clients, service providers, and regulators
 - Increasing regulatory audits
 - Lost or corrupted spreadsheets can lead to
 - Fine, censure, lost business, and legal recourse

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Agenda

- Spreadsheets and Capital Markets – Larry Tabb
- Current Challenges – Lance Smith
- Business Case Environments – Gregory Cozza
- Case Example: Prelude Capital – Gary Chang
- The Imagine Solution – Lance Smith
- Q&A – Larry Tabb, Gregory Cozza, Gary Chang, Lance Smith

Current Challenges

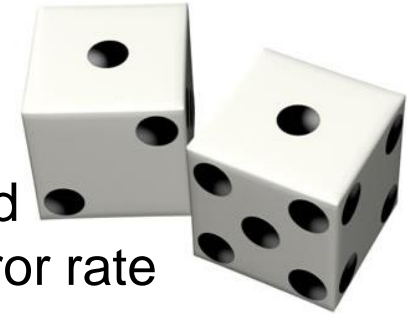
Dr. Lance Smith
CEO, Imagine Software

Building Upon Larry's Presentation of Research...

We at Imagine see the following areas of spreadsheet challenges being encountered by financial professionals time after time:

- Operational Risk Concerns
- Functionality, Performance, and Data Management
- Transparency and Investor Confidence

Operational Risk Concerns



- **Testing and QA** – lack of built-in data validation and QA testing accounts for estimated 1-2% average error rate in spreadsheet cells. (Source: *Errors in Operational Spreadsheets*, Journal of Organizational and End User Computing, July-Sept. 2009)
- **Security** – application-level security generally missing; no role-based permissioning for data/app access or changes
- **“Key Man” Vulnerability and Business Continuity** – the developer of a spreadsheet solution can walk out the front door and literally take a key business process with them
- **Audit and Version Control** – non-existent! Every file opening is an opportunity for unintended, untraceable errors

Functionality, Performance, and Data Management

- **Point Solutions vs. Broad Solutions** – spreadsheets are well-suited for fast, “quick and dirty” solutions, not for complex applications with broad functional scope
- **The Need for Speed** – a major issue for anyone requiring real-time P&L and risk analytics
 - Spreadsheet calculation performance degrades steadily as portfolio positions grow in size and complexity
- **The Achilles’ Heel: Data Management** – sourcing and integrating all necessary market and value-add data so a spreadsheet app can run a continuous business process correctly is very challenging indeed



Transparency and Investor Confidence

- **Investors Don't Trust In-House Spreadsheet Apps** – credibility problem is widespread
- **Open Models Are Key** – sophisticated investors want transparency in valuation and modeling, too
- **More and Better Reporting** – escalating investor demand for more reporting transparency and sophistication in overall risk management technology



Business Case Environments

Gregory Cozza
Business Development
Imagine Software

Case #1: A Premier NY-based Start-up Hedge Fund

- **Description:** A new \$500m AUM global macro startup fund utilizing equity, FI, credit, converts, and FX asset classes
 - Primary business challenges/requirements
 - Fast time-to-market
 - User-customizable functionality
 - Real-time performance
 - Scalable
- **Results:** Imagine satisfied all requirements, enabled on-time Aug. 1 launch, and is main system for 3 risk managers, 8 traders, 4 ops/IT professionals

Case #2: Established Hedge Fund/Fund of Funds

- **Description:** >\$300m AUM global macro – asset classes include equities, FI, credit, commodities, FX, and FoF
 - Primary business challenges/requirements
 - Operational risk
 - Lack of scalability and transparency
- **Results:** Addition of needed risk functionality and successful migration from spreadsheets accomplished; fund was able to triple AUM from \$100m to \$300m
 - **Additional benefit:** Added ten managed accounts

Case #3: Asset Management – Henderson Group plc

- **Description:** Alternatives and Fixed Income teams of \$74B+ AUM asset management firm offering a range of traditional and sophisticated funds using a mix of in-house and third-party tools
- Primary business challenges that triggered the migration from spreadsheets in Fixed Income teams:
 - **Sub-optimal transparency**
 - **Insufficient analytical tools**
 - **Expensive data management**
 - **Increased operational risk**

Asset Management (cont'd) – Henderson Group plc

- **Results:** Imagine deployment solved these outstanding issues. Additional benefits of note include:
 - Easy integration with industry-leading front-end OMS
 - Robust API and Web Services enables Imagine analytics to be automated and used with other systems and groups
 - Industry-validated risk capabilities and user-definable risk calculations now allow real-time analysis / decision support as well as ad-hoc management or investor reporting

Business Case Example – Prelude Capital

Gary Chang
Risk Manager, Prelude Capital

Prelude Capital – with Gary Chang

- **Description:** Capital allocator specializing in emerging portfolio managers with <\$250M AUM. Approx. 25 managers with strategies ranging from L/S equity to event-driven
 - Primary business challenges/drivers with spreadsheet apps:
 - **Fragmented data** – could not aggregate across proprietary PB spreadsheets and tools; needed a consolidated database
 - **Operational issues** – consolidated P&L and other analytics difficult to calculate; needed to be able to compare managers
 - **Speed** – limited to end-of-day snapshots; agile, intra-day analysis capability desired to match rapid market changes
- **Results:** Imagine solution provided integrated risk and DB solution; solved speed and flexibility issues

The Imagine Solution

Dr. Lance Smith
CEO, Imagine Software

Operational Risk Concerns - Solutions



- **Testing and QA** – data validation logic, plus full regression QA back-testing by trained QA professionals. *The more critical the app, the more important these practices are*
- **Security** – rigorous, role-based permissioning applied to all users for app and data access privileges, with a central administrator and appropriate software controls
- **“Key Man” Vulnerability and Business Continuity**
 - Avoid single-point-of-failure scenarios tied to individuals
 - Deploy third-party, fully documented and maintained apps
- **Audit and Version Control** – eliminate problem of control and tracking of changes to financial data with enterprise-grade audit trails and versioning

Functionality, Performance, and Data Management - Solutions

- **Point Solutions vs. Broad Solutions**

- Employ professional, team-oriented programming techniques to tackle expansive functional needs in reasonable timeframes

- Separate data from code to enable maintainable, easily extended and broadly capable apps

- **The Need for Speed** – leverage the power of affordable cloud-based solutions to enable real-time analytics and other compute-intensive processes

- **The Achilles' Heel: Data Management** – engage a data management service that supplies everything needed for your day-to-day operations: real-time market data, global security master, corporate actions processing, curves, vols and correlations



Transparency and Investor Confidence - Solutions

- **Investors Don't Trust In-House Spreadsheet Apps**
 - Utilize established, industry-validated, third-party solutions for exposure and performance numbers
- **Open Models Are Key**
 - No “black box” modeling
 - Employ open, industry-standard, well-documented valuation algorithms
- **More and Better Reporting**
 - Large array of standard reports aimed at investor needs
 - Custom report writer for customized investor output



Imagine's Approach: Software+Data+Services

- Integrated, real-time portfolio and risk management solution
- Highly scalable, high-performance cloud-based solution
- Rapid time-to-market; implemented in weeks
- Comprehensive data management encompassing all market and value-add data (vols and correlations, specialty credit data, etc.)
- Complete outsourcing of maintenance and operations, including security, disaster recovery, and database, plus end-of-day and start-of day processing services
- Significant cost savings vs. traditional enterprise solutions
- Open, extensible, constantly evolving platform
- Worldwide business and technical support



Open Q&A

With Larry Tabb, Gregory Cozza, Gary Chang,
and Dr. Lance Smith

Thank You

For more information on Imagine's integrated portfolio and risk management solutions please contact Imagine Software at:

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Web: www.imaginesoftware.com