

## Lesson 47: Financial Data Vendors

### Module 4: Traditional Digital Finance

Digital Finance Course

2025

- Understand financial data vendor landscape and business models
- Analyze Bloomberg Terminal, LSEG (Refinitiv), and FactSet platforms
- Examine market data types: real-time, historical, reference, alternative
- Evaluate data licensing models and exchange fees
- Assess alternative data sources and emerging providers

## Market Size and Growth:

- Global financial data market: **\$35B+** annual revenue (2024)
- Growth rate: 5-7% CAGR
- Drivers: Regulatory reporting, algorithmic trading, alternative data
- Consolidation trend (Refinitiv-LSEG, IHS Markit-S&P)

## Top Vendors by Revenue (2024):

- 1 **Bloomberg LP:** **\$12B+** (\$24-27k/terminal/year)
- 2 **LSEG (Refinitiv):** **\$7B+** (acquired by LSEG 2021 for **\$27B**)
- 3 **S&P Global (incl. IHS Markit):** **\$4B+** (merged 2022)
- 4 **FactSet:** **\$2B+**
- 5 **Moody's Analytics:** **\$1.5B+**
- 6 **Morningstar:** **\$1.5B+**

## Data Categories:

### 1. Market Data:

- Real-time prices (equities, bonds, derivatives, FX, commodities)
- Historical time series
- Order book depth (Level 2, Level 3)
- Indices and benchmarks

### 2. Reference Data:

- Security master (ISINs, CUSIPs, identifiers)
- Corporate actions (dividends, splits, mergers)
- Company fundamentals (financials, ratios)
- Legal entity data (LEI, org structure)

### 3. Analytics and Research:

- Analyst estimates and forecasts
- Credit ratings and models
- Risk analytics (VaR, stress tests)
- News and sentiment

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Quality data is the foundation for effective machine learning models.

## Terminal-Based Model (Bloomberg):

- **Pricing:** \$24-27k per terminal per year
- **Users:** 350,000+ terminals globally (2024)
- **Revenue:** \$12B+ annually (95%+ from terminals)
- **Value Prop:** Integrated platform (data + analytics + communication)
- **Lock-In:** Workflow integration, chat network

## Enterprise Data Licensing (Refinitiv, FactSet):

- **Pricing:** Per-user or enterprise-wide licenses
- **Customization:** APIs, feeds, data integration
- **Flexibility:** Choose specific datasets
- **Cost:** \$10-50k+ per user depending on entitlements

## Exchange Data Licensing:

- **Direct from Exchanges:** NYSE, Nasdaq, CME, Eurex
- **Professional vs Non-Professional:** Different fee tiers
- **Display vs Non-Display:** Machine-only usage often higher fees
- **Redistribution:** Additional fees for reselling data

## Alternative Data (Emerging):

- **Pricing:** Subscription (monthly/annual) or per-use
- **Range:** \$10k-500k+ annually depending on dataset
- **Examples:** Satellite imagery, credit card data, web scraping
- **Providers:** Specialty vendors (not traditional giants)

*Typical hedge fund data spending: \$1-5M/year; large investment bank: \$50-100M+/year*

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Key concepts from this slide inform practical applications in finance.

# Bloomberg Terminal: Core Features

## Market Data and Analytics:

- **Real-Time Pricing:** 35M+ securities across all asset classes
- **Charts:** Advanced technical analysis, custom indicators
- **News:** Bloomberg News + 1000+ third-party sources
- **Economic Data:** Global macro indicators, central bank calendars
- **Derivatives Pricing:** DLIB library, implied vol surfaces

## Equity Functions:

- **DES:** Security description and fundamentals
- **FA:** Financial analysis (income statement, balance sheet)
- **COMP:** Comparables and peer analysis
- **EQS:** Equity screening
- **GP:** Price charting
- **HDS:** Historical data download

## Fixed Income and Rates:

- **YAS:** Yield and spread analysis
- **WCDS:** Credit default swap pricing
- **IRSB:** Interest rate swap builder
- **FIHC:** Corporate bond screening
- **SWPM:** Swap portfolio manager

## Communication:

- **IB (Instant Bloomberg):** Secure messaging (350k users)
- **MSG:** Market color and trade ideas
- **SDEV:** Syndicate desk for new issues

## Execution:

- **EMSX:** Multi-asset execution management
- **FIT:** Fixed income trading
- **FXGO:** FX spot and derivatives trading

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## **Bloomberg API (B-PIPE, SAPI):**

### **B-PIPE (Managed):**

- Real-time streaming market data
- Low-latency feed (sub-millisecond)
- Managed infrastructure (Bloomberg hosted)
- Pricing: \$2-5k/month per connection

### **Server API (SAPI):**

- Client-side integration
- Supports C++, Java, Python, .NET, Excel
- Reference data, historical data, intraday pricing
- Widely used for risk systems and analytics

### **Desktop API (DAPI):**

- Excel integration (Bloomberg Addin)
- Real-time data formulas (=BDP, =BDH, =BDS)
- Used for ad-hoc analysis and reporting

## **Bloomberg Data License:**

- Enterprise data redistribution
- Historical time series (EOD pricing, fundamentals)
- Reference data (corporate actions, security master)
- Pricing: Custom based on scope and usage

## **Bloomberg Enterprise Access Point (BEAP):**

- Cloud-hosted API access
- No on-premise infrastructure needed
- RESTful and WebSocket APIs
- Pricing model shifting to consumption-based

## **Competitive Advantages:**

- Comprehensive coverage (equities, fixed income, derivatives)
- Network effects (IB messaging)
- Reliability and data quality
- Strong customer support (24/7 help desk)

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## Refinitiv (Acquired by LSEG 2021):

### Eikon Platform:

- Successor to Thomson Reuters Terminal
- Multi-asset market data and news
- Pricing: \$12-22k per user per year
- Users: 400,000+ globally (pre-acquisition)
- Integration with Microsoft Office (Excel, Outlook)

### Workspace (Cloud-Native):

- Modern replacement for Eikon (launched 2021)
- Cloud-based, browser-accessible
- API-first architecture
- Collaboration tools (teams, workspaces)

### Key Datasets:

- **Real-Time:** 650+ exchanges and OTC markets
- **Tick History:** 18+ years of intraday data
- **Fundamentals:** 85,000+ active companies
- **Estimates:** I/B/E/S (analyst consensus)

## Refinitiv Data Platform (RDP):

### Cloud-Delivered APIs:

- RESTful and WebSocket APIs
- Real-time pricing, historical data, news
- ESG data (Environmental, Social, Governance)
- Pricing: Consumption-based model

### Elektron Data Feed:

- Low-latency real-time feed
- Competitive with Bloomberg B-PIPE
- Used by hedge funds and HFT firms

### Content Strengths:

- **FX:** Market leader in foreign exchange data
- **Fixed Income:** Extensive corporate bond coverage
- **News:** Reuters News (120+ years history)
- **ESG:** Comprehensive sustainability metrics
- **Ownership:** Thomson Reuters institutional ownership data

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## Post-Trade Services:

### LCH (London Clearing House):

- SwapClear: \$500T+ IRS notional
- RepoClear: Repo and securities lending
- CDSClear: Credit default swaps
- EquityClear, FX Clear

### UnaVista:

- Trade reporting (EMIR, MiFID II, SFTR)
- Regulatory data management
- Transaction reporting hub

### FXall and Tradeweb (Affiliates):

- Multi-dealer FX trading platform
- Fixed income electronic trading
- Integration with LSEG data feeds

## Risk and Analytics:

### Refinitiv Risk Platform:

- Enterprise risk management
- Counterparty credit risk (CVA, PFE)
- Market risk (VaR, stress testing)
- Regulatory capital (Basel III, FRTB)

### StarMine Quantitative Analytics:

- Equity valuation models
- Earnings quality and momentum scores
- Analyst revisions and sentiment
- Used by quant funds for alpha research

### LSEG Synergies (Post-Acquisition):

- Integration of exchange data (LSE, Borsa Italiana)
- Combined index business (FTSE Russell + Refinitiv)
- Cross-selling post-trade and data services

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**Risk management is essential for financial stability and profitability.**



## FactSet Overview:

- Founded: 1978 (public since 1996)
- Users: 200,000+ globally (2024)
- Revenue: \$2B+ annually
- Pricing: \$12-18k per user per year
- Target: Buy-side (asset managers, wealth managers)

## Core Capabilities:

### 1. Portfolio Analytics:

- Multi-asset performance attribution
- Risk analytics (VaR, tracking error, factor exposures)
- Portfolio construction and optimization
- Backtesting and scenario analysis

### 2. Equity Analysis:

- Company fundamentals (20+ years history)
- Ownership data (institutional, insider)
- Screening and comps (peer analysis)
- Event transcripts (earnings calls)

### 3. Fixed Income:

- Corporate bond data (pricing, spreads)
- Municipal bonds (US focus)
- Structured products (ABS, MBS, CLOs)
- Yield curve analysis

### 4. Research Aggregation:

- Broker research repository
- Earnings estimates consensus
- Research management system (RMS)
- MiFID II unbundling support

## FactSet APIs:

- RESTful APIs (JSON format)
- Python SDK (factset-sdk-python)
- Excel integration (FactSet Addin)
- Direct data feeds (real-time and EOD)

## Competitive Positioning:

- Stronger in buy-side workflows vs Bloomberg (sell-side)
- Better portfolio analytics than Bloomberg
- More affordable than Bloomberg for pure data users

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## Credit and Fixed Income:

### S&P Global Market Intelligence:

- Credit ratings (S&P Ratings)
- Capital IQ platform (private company data)
- Compustat (standardized financials)
- Merged with IHS Markit (2022): Added derivatives pricing (MarkitServ)

### Moody's Analytics:

- Credit ratings and research
- RiskCalc (PD models for private firms)
- CreditLens (IFRS 9 ECL)
- Economic scenarios and forecasting

### TRACE (FINRA):

- US corporate bond trade reporting
- Post-trade transparency (15-minute delay)
- Free access via FINRA website

## Equity and Indices:

### Morningstar:

- Mutual fund and ETF data (leader)
- Morningstar Direct (institutional platform)
- Equity research and analyst ratings
- ESG and sustainability ratings

### MSCI:

- Global equity indices (MSCI World, EM)
- Factor indices (value, momentum, quality)
- ESG ratings and climate metrics
- Barra risk models (factor-based)

### FTSE Russell (LSEG):

- FTSE 100, Russell 2000 indices
- Fixed income indices
- Smart beta and factor indices

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## Alternative Data Categories:

### 1. Satellite and Geolocation:

- **Orbital Insight:** Satellite imagery (parking lots, oil tanks)
- **RS Metrics:** Construction activity, crop yields
- **Advan (SafeGraph):** Foot traffic to retail stores
- Use case: Predict retail sales, oil inventory

### 2. Credit Card and Transaction Data:

- **Earnest Analytics:** Consumer spending by category
- **Second Measure (Bloomberg):** Transaction panels
- **Facteus:** Anonymized credit/debit card data
- Use case: Estimate company revenues in real-time

### 3. Web Scraping and App Data:

- **Thinknum Alternative Data:** Company job postings, pricing changes
- **App Annie (data.ai):** Mobile app downloads and usage
- **SimilarWeb:** Website traffic and engagement

### 4. Sentiment and NLP:

- **RavenPack:** News sentiment analytics
- **Dataminr:** Real-time event detection
- **Brain Company:** AI-generated market insights
- Use case: Predict earnings surprises, market reactions

### 5. ESG and Climate:

- **Truvalue Labs (FactSet):** ESG sentiment from news
- **Sustainalytics (Morningstar):** ESG risk ratings
- **CDP (Carbon Disclosure Project):** Climate data

## Alternative Data Market:

- Market size: **\$2B+** (2024), growing 30%+ annually
- Hedge fund adoption: 80%+ use alt data (2024)
- Challenges: Data quality, survivorship bias, regulatory (PII)
- Pricing: **\$25k-500k+** per dataset annually

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## Professional vs Non-Professional:

### Non-Professional:

- Individual investors (not paid for trading)
- Lower fees: **\$1-5/month** per exchange
- Examples: Retail brokerage users, students

### Professional:

- Anyone compensated for securities-related work
- Higher fees: **\$50-200/month** per exchange
- Institutional traders, analysts, advisors

## Display vs Non-Display:

### Display:

- Human consumption (screens, reports)
- Priced per user per month

### Non-Display:

- Algorithmic trading, risk systems
- Enterprise-level pricing (often higher than display)
- Audit rights for exchanges (verify usage)

## Depth of Book Fees:

### Level 1 (Top of Book):

- Best bid/ask only
- Lowest fees: **\$5-20/month** (professional)

### Level 2 (Full Book):

- All price levels and depth
- Higher fees: **\$50-150/month**

### Level 3 (Order-by-Order):

- Individual order IDs and attribution
- Premium fees: **\$500-2000/month**
- Used for market making and order flow analysis

## Enterprise Fees (Non-Display):

- Flat fees: **\$50k-500k+/year** per exchange
- Query-based: **\$0.01-1.00** per query
- Device-based: Fee per server/instance
- Redistribution: Additional fees for reselling data

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# Vendor Data Redistribution Agreements

## Vendor Licensing Arrangements:

### Bloomberg, Refinitiv, FactSet:

- Bundle exchange fees into subscription
- Negotiate enterprise agreements with exchanges
- Pass-through fees or inclusive pricing
- Simplifies client billing (single invoice)

## Controlled vs Derived Data:

### Controlled (Raw):

- Real-time prices, order book data
- Subject to exchange fees and terms
- Cannot redistribute without exchange permission

### Derived (Analytics):

- Calculations based on raw data (indices, signals)
- More flexible licensing (vendor IP)
- Still may require exchange approval for some uses

## Data Licensing Challenges:

### Compliance and Audits:

- Exchanges audit vendor and end-user compliance
- User counts, usage types (display/non-display)
- Penalties for under-reporting: 3-5x back fees
- Automated monitoring tools (e.g., Vela, MDDM)

### Cost Optimization:

- Audit internal user entitlements
- Deactivate unused subscriptions (15-30% savings typical)
- Negotiate enterprise caps with vendors
- Shift to derived data where permissible

## Regulatory Data (Free/Cheap):

- **SEC EDGAR:** US public company filings
- **FINRA TRACE:** Corporate bond trades
- **Treasury.gov:** US government bonds
- **ESMA FIRDS:** EU financial instruments reference

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## Common Data Issues:

### 1. Stale or Missing Data:

- Delayed pricing for illiquid securities
- Corporate actions not reflected timely
- Estimates not updated (analyst departures)

### 2. Incorrect Reference Data:

- Wrong ISINs or identifiers
- Inaccurate corporate hierarchies
- Currency mismatches

### 3. Survivorship Bias:

- Delisted companies removed from history
- Overstates backtest performance
- Critical for quant research

### 4. Point-in-Time Issues:

- Historical data reflects current state (not as-of)
- Restatements not handled properly
- Look-ahead bias in backtests

## Data Governance Framework:

### 1. Data Validation:

- Automated reasonableness checks (outliers)
- Cross-vendor comparison (Bloomberg vs Refinitiv)
- Manual review for critical datasets
- Threshold alerts (price moves  $\geq 10\%$ )

### 2. Data Lineage:

- Track data source and transformations
- Version control for datasets
- Audit trail for regulatory compliance

### 3. Master Data Management:

- Golden source designation (e.g., Bloomberg for pricing)
- Reconciliation rules between sources
- Conflict resolution hierarchy

### 4. Vendor SLAs:

- Accuracy guarantees (99.9%+)
- Timeliness (15-second delay for real-time)
- Issue resolution timelines
- Credits for breaches

## Enterprise Data Platforms:

### Snowflake Financial Services Data Cloud:

- Centralized data lake for financial data
- Pre-integrated market data (Bloomberg, Refinitiv)
- Data sharing and collaboration
- Used by hedge funds and asset managers

### Databricks:

- Unified analytics on lakehouse architecture
- Delta Lake for time-series data
- Machine learning and AI integration

### Cloudera / Hadoop:

- Big data storage and processing
- Legacy choice (declining vs cloud)

## Data Management Tools:

### Atoti (ActiveViam):

- In-memory OLAP for financial data
- Real-time risk aggregation
- Used by investment banks for trading risk

### Kdb+/Q (KX Systems):

- Time-series database (columnar)
- Extremely fast for tick data (microsecond queries)
- Used by HFT firms and quant funds
- Pricing: \$100k+ per server annually

### InfluxDB, TimescaleDB:

- Open-source time-series databases
- Lower cost alternatives to Kdb+
- Suitable for smaller-scale deployments

*Trend: Shift from on-premise to cloud data platforms (Snowflake, Databricks) for flexibility and cost*

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## Cloud Data Delivery:

### Vendor Cloud Platforms:

- Bloomberg Enterprise Access Point (BEAP)
- Refinitiv Data Platform (RDP)
- FactSet Cloud (AWS-hosted)

### Benefits:

- No on-premise infrastructure
- Elastic scaling (pay per use)
- Faster time-to-market
- Global availability and redundancy

### Consumption-Based Pricing:

- Pay per API call or data volume
- Shift from per-user to usage-based
- Better aligns cost with value
- Challenges: Unpredictable costs, audit complexity

## API Standardization:

### OpenFIGI (Bloomberg):

- Financial Instrument Global Identifier
- Free API for security identification
- Maps ISINs, CUSIPs, tickers to FIGI

### FINOS (Fintech Open Source):

- Open-source financial data standards
- Common Data Model (CDM) collaboration
- Interoperability across vendors

### Real-Time Streaming:

- WebSocket APIs for live data
- Kafka-based message buses
- Sub-second latency for cloud delivery
- Use case: Real-time dashboards, algos

*Major shift: Terminal-based → API-first data consumption (especially for quant firms)*

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# Summary and Key Takeaways

## Vendor Landscape:

- Global market: **\$35B+** revenue (5-7% CAGR)
- Top 3: Bloomberg (**\$12B**), LSEG (**\$7B**), S&P (**\$4B**)
- Consolidation: LSEG-Refinitiv, S&P-IHS Markit

## Bloomberg:

- 350k terminals at **\$24-27k/year**
- Network effects (IB messaging, workflow)
- APIs: B-PIPE (real-time), SAPI (integration), BEAP (cloud)
- Strengths: Comprehensive, reliable, customer support

## LSEG (Refinitiv):

- Eikon/Workspace: **\$12-22k/user**
- Leaders in FX, fixed income, news (Reuters)
- Post-trade: LCH clearing, UnaVista reporting
- Refinitiv Data Platform (RDP): Cloud APIs

## FactSet:

- Buy-side focused: **\$12-18k/user**
- Strengths: Portfolio analytics, research aggregation
- Better than Bloomberg for pure portfolio workflows

## Alternative Data:

- **\$2B+** market (30%+ CAGR)
- Categories: Satellite, credit card, web, sentiment, ESG
- 80%+ hedge fund adoption
- Pricing: **\$25k-500k+** per dataset

## Exchange Fees and Licensing:

- Professional: **\$50-200/month** per exchange
- Non-display: **\$50k-500k+/year** (enterprise)
- Audits: 3-5x penalties for under-reporting
- Cost optimization: 15-30% savings via entitlement audits

## Emerging Trends:

- Cloud and API-first (BEAP, RDP, FactSet Cloud)
- Consumption-based pricing vs per-user
- Time-series databases (Kdb+, Snowflake, Databricks)