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## The Value of Visual Data: Summary and Analysis of Independent Research Findings

### Goals

- Identify and review publicly available research on the possible impact of data visualization on the quality of investment decisions.
- Discern current perceptions of data visualization as a decision-support tool for investors and financial analysts.
- Identify and review research on the weaknesses of preset and inflexible peer groupings.

### Leader or Laggard: How Data Drives Competitive Advantage in the Investment Community ([Report by State Street](#))

- 400 institutional investors, including asset managers and asset owners, responded to this survey commissioned by State Street and conducted by the Economist Intelligence Unit. The report also incorporates qualitative interviews with senior executives conducted by Longitude Research.
- The survey was designed to answer the central question: How can institutional investors better manage the deluge of data to make better decisions and achieve better results?
- 91% of the respondents agree that data and analytics represent a key strategic priority, and 37% of the respondents view data management strategies as the single most important strategic priority.
- Only 29% of the respondents feel that they are already exploiting Big Data to carve out a competitive advantage.
- 86% of the respondents say they increased their investment in the data-analysis infrastructure over the past three years.
- Among respondents the authors characterize as "data leaders", 70% say they feel confident that they can derive forward-looking insights from their data. Only 43% of the "data laggards" share this confidence in the value of data analysis.
- Some of the laggards view data strategies as a distraction.
- Overall, respondents feel more confident about their "performance analytics" vs. "risk analytics"
- According to a recent OFR report: "Financial market data volumes are growing exponentially. One should thus expect traditional data management technologies to fail, and they have."

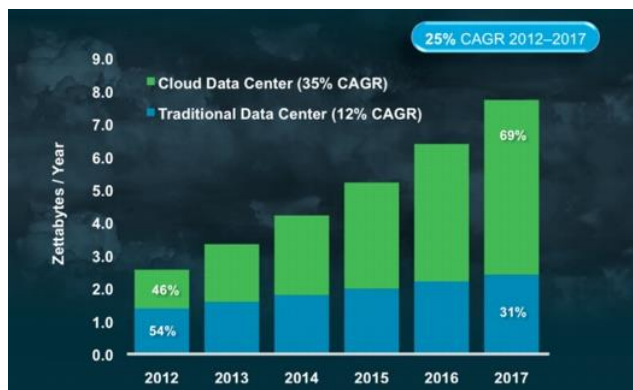
### Cisco Global Cloud Index ([Report](#))

- Global IP traffic is projected to reach 554 billion gigabytes per month by 2016. This is more than 110 times all the information created by human being from the dawn of civilization until 2003.
- Annual global data center IP traffic will reach 7.7 zettabytes by the end of 2017. By 2017, global data center IP traffic will reach 644 exabytes per month (up from 214 exabytes per month in 2012).

Global Data Center IP Traffic



Cloud vs. Traditional



### The Application of Visual Analytics to Financial Stability Monitoring ([Report by US Treasury OFR](#))

- "Beyond the need to create new data sources and analytic approaches, however, the crisis also revealed a need for greater capacity to integrate and make sense of voluminous, dynamic, and heterogeneous financial data."
- "...visualization in general and visual analytics in particular are natural aids for financial stability monitors..."
- "...cleaner, better structured data will improve visual analytics. At the same time, visual analytics will also help validate and refine the input data by more quickly revealing what is misleading, missing, contradictory, or not comparable in supervisory data."

### Disclosure Overload and Complexity: Hidden in Plain Sight ([Report by KPMG](#))

- "The sheer quantity of financial disclosures has become so excessive that we've diminished the overall value of these disclosures..."  
"Although this statement could easily be made today, this quotation is from an article that was written by Ray Groves, a former partner in the firm of Ernst & Young in 1994."
- "Post-1994 disclosure standards expansions have included very significant new requirements such as the SEC's 1997 rule making requiring disclosures about derivatives and market risk, the Financial Accounting Standards Board's (FASB) Statement No. 132 as

amended addressing Employers' Disclosures about Pensions and Other Postretirement Benefits, FASB's expanded disclosure requirements relative to fair value measurements and numerous SEC staff letters referred to as "Dear CFO Letters" that require various industry and event-specific types of disclosures."

- "The results of the Form 10-K filing review confirm that disclosure has expanded approximately 16 percent overall during the six-year period and footnote disclosure has grown 28 percent over the same period. Footnote disclosure has grown at a faster pace than overall disclosure and has been particularly acute in the pension and post-retirement benefits, fair value, financial derivatives and hedging areas."
- "[Survey] Respondents indicated that the complexity of financial standards and the volume of mandated disclosures are the most significant contributors to the issue of disclosure overload and complexity, and footnotes are the most significant source or cause of complexity."
- "In 2008 the SEC announced a project dubbed the 21st Century Disclosure Initiative. There does not appear to be any recent activity on this project at the SEC as it is not included on the SEC website in the Topics of Current Interest. However, SEC staff members have commented in recent months about their continuing interest in developing approaches to advance the transparency and understandability of financial and other disclosures."

Table 1	2010/2009	2010/2004
Mean volume of Form 10-K (pages)	+3%	+16%
Mean volume of footnote disclosure (pages)	+6%	+28%
Median volume of Form 10-K (pages)	0	+17%
Median volume of footnote disclosures (pages)	+4%	+24%