Visuals and Attention to Earnings News on Twitter

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Research Question

- Do visuals *increase* attention, improve processing of earnings news?
- Are managerial choice on visuals to *inform* or *opportunistic*?

Research Motivation

- **1998 SEC's handbook** mentions the importance of Graphics in creating clearer and more informative disclosure documents: "Graphics are instruments for reasoning about quantitative information." & "Often the most effective way to describe, explore, and summarize a set of numbers—even a very large set—is to look at pictures of those numbers" (Tufte 1983).

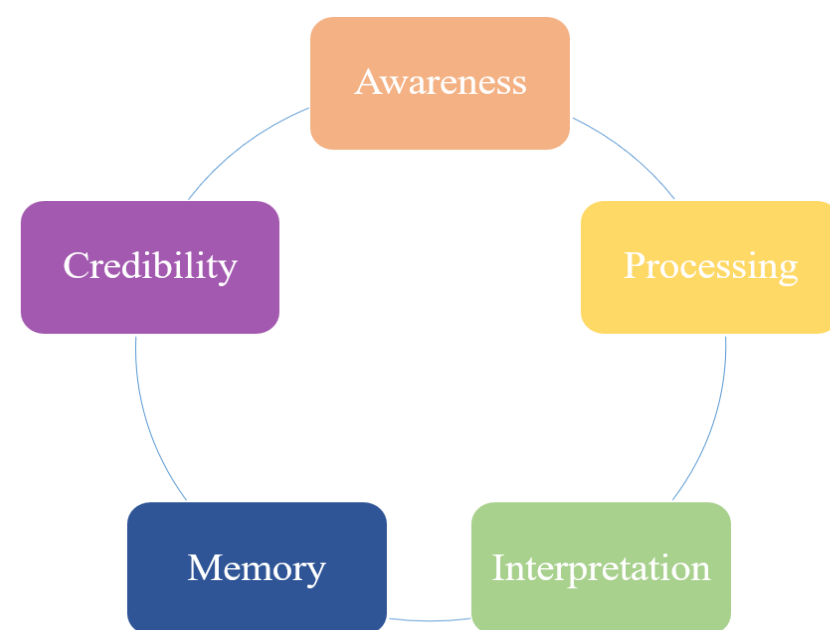➡ Its not just what you say, **_how_** you say it also matters

Figure: Five stages of visual communication

- Investors are bombarded with information from different channels every day and investor attention is a scarce cognitive resource (Hirshleifer and Teoh 2003)
- Investors are more attentive to **salient** information (Huang, Nekrasov, & Teoh 2018)

Visuals in Earnings News Tweets (Examples)

- Charts, figures, graphs:

- Photos (e.g., CEO face):

Hypotheses & Research Design

- H1a: *Attention of firm followers is higher when earnings news is disseminated on Twitter using visuals than without visuals.*
  - Channel 1: **Direct Attention Effect.** *The attention of firm followers to an earnings-related message is greater when that message contains visuals (H1b)*
  - Channel 2: **Attention Spillover Effect.** *The attention of firm followers to an earnings-related message is greater when other earnings-related messages sent by the firm contain visuals (H1c)*

$$RETWEETS_{jt} \text{ or } LIKES_{jt} = \alpha + \beta_1 \ VISUALS_{jt} + CONTROLS + \varepsilon_{jt},$$

- H2a: Firms using visuals in earnings news have higher reactions (ERCs).
- H2b: Firms using visuals in earnings news have lower PEAD.

$$CAR(-1,+1)_{jt} \text{ or } CAR(-1,+1)_{NEXT.QTR,jt}$$
$$= \alpha + \beta_1 \ VIS.VAR_{jt}*RSUE_{jt} + CONTROLS*RSUE + Main \ Effects_{jt} + \varepsilon_{jt},$$

Data and Sample

- Earnings messages tweeted by S&P 1500 Index firms from June 2011 to February 2018.
- Analyst forecast, financial and return data from I/B/E/S, Compustat, and CRSP.

Main Findings

- Investors' attention to the earnings news is significantly *higher* when the firm uses visuals, as indicated by **higher number of retweets and likes. (H1)**

Direct and Spillover Attention Effects – Message-Level Analysis

	Dependent Variable			
	$RETWEETS_{message.level}$	p-value	$LIKES_{message.level}$	p-value
$VISUALS_{message.level}$	0.863***	<0.001	0.862***	<0.001
$VISUALS.OTHER_{message.level}$	0.247***	<0.001	0.360***	<0.001
Controls	Yes		Yes	
Observations	11,247		11,317	
Pseudo-R^2	22.86%		37.90%	

- Consequences of the use of visuals: **higher** initial investor reactions (**ERC**) and **lower** post-announcement reactions (**PEAD**). **(H2)**

|	CAR(−1,+1)	p-value	CAR(−1,+1)$_{NEXT.QTR}$	p-value
VIS.VAR*RSUE	0.020**	0.016	-0.019**	0.033
CONTROLS*RSUE	Yes		Yes	
MAIN EFFECTS	Yes		Yes	
Observations	4,606		4,619	
Adjusted R^2	16.19%		6.51%	

Determinants of the Use of Visuals

- **Good** but **temporary** earnings news. Firms attempt to attract attention when the firm has
  - ➤ good news (beat analyst consensus).
  - ➤ but temporary (lower earnings persistence and lower sales growth persistence).

- *"Make hay while the sun shines".*

Cross-sectional Tests

- Visual attention effect is concentrated on days when **investors face many competing announcements**.
- Visual attention effect is concentrated among earnings announcements with **greater interest to individual investors**.
- Visual attention effect is concentrated on when the **number of retweets of earnings messages is high**.

Key Takeaway

- Visuals can be **_a double-edged sword_**. While visuals can help increase investor engagement with financial disclosures, as desired by the S.E.C. in its Plain Writing Initiative, they can also reduce the informational efficiency of the capital markets because of managerial agency incentives.

Retweets double, ERC increases by 25% if Twitter earnings announcements include visuals. #earningsannouncements
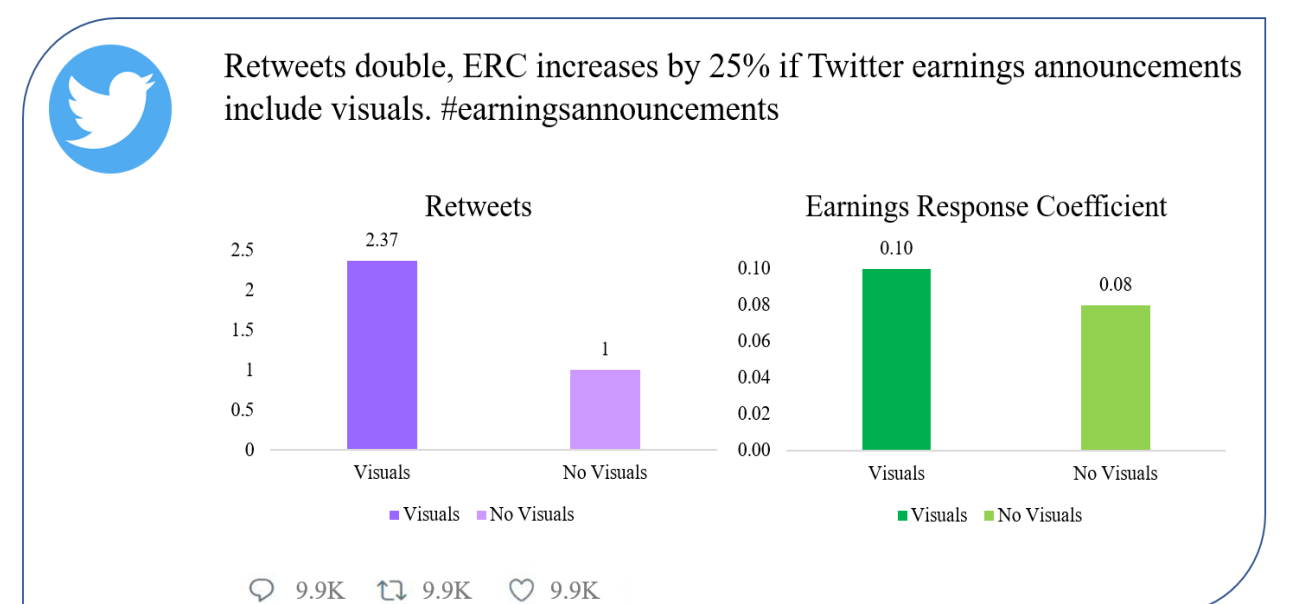
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