Information Overload in a Post-Truth, Fake-News, Big Data World

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A Select History

• 1956 – George Miller’s The magical number seven, plus or minus two: Some limits on our capacity for processing information.
• 1964 – J.G. Miller’s Coping with administrators’ information overload.
• 1965 – Alvin & Heidi Toffler’s Future Shock.
Definition?

• 1965 – Toffler - If overstimulation at the sensory level increases the distortion with which we perceive reality, cognitive overstimulation interferes with our ability to “think”

• 2004 – Eppler & Megis - In ordinary language, the term “information overload” is often used to convey the simple notion of receiving too much information

• 2006 – Mulder, et al. - Information overload is the feeling of stress when the information load goes beyond the processing capacity.

• 2007 – Savolainen - However, this issue is controversial, and there is no consensus among researchers about the definition of information overload and the significance of this problem.
Definition

As information load increases, decision accuracy also increases up to an undefined point after which decision accuracy decreases. This turning point is where information overload begins, according to (Eppler & Mengis, 2004)
Information Overload

Information Load as the Inverted U-Curve

Decision Accuracy

Information Load

That was then...

...This is now.
Hillary Clinton • @HillaryClinton • 9 Nov 2016

Scripture tells us: Let us not grow weary in doing good, for in due season we shall reap, if we do not lose heart.
Post Truth & Fake News

Terms such as “post-truth” and “fake news”, largely unknown until 2016, have exploded into media and public discourse (Lewandowski, Ecker, & Cook, 2017).

3 News stories to ponder...
Believe it or not, this is a shark on the freeway in Houston, Texas. #HurricaneHarvey
This photo of then-President Barack Obama and family serving Thanksgiving meals to homeless and at-risk veterans in Washington began circulating after Hurricane Harvey -- but with the wrong context.

(CNN) — A picture purporting to show former President Barack Obama helping serve meals in Houston, Texas, in the wake of Hurricane Harvey was shared thousands of times on Twitter this weekend. The photograph, however, is two years old and was taken at a homeless shelter in Washington during Thanksgiving.

The picture was shared on Twitter Saturday with the text "Something you'll never see Trump do: Obama is in Texas serving meals!" As of Monday morning it had more than 7,000 retweets.
Residents of La Vita Bella nursing home in Dickinson, Texas were trapped due to severe flooding from Hurricane Harvey on Aug. 27. Trudy Lampson

TEXAS

‘Need Help ASAP’ The Story Behind the Photo of Nursing Home Residents Trapped in Hurricane Flood Water
Big Data

Industry’s 3, 4 and 5 V’s

• Volume, Velocity, Variety
• Veracity
• Value
Normal Information Growth

Normal Growth of Information Over Time

Amount of Information

Over Time
Abnormal Information Growth

Abnormal Growth of Information Over Time

Amount of Information

Over Time
Information Overload

Information Load as the Inverted U-Curve

The Pilot Study

• Extend Misra & Stokol’s validated and tested instrument, the Perceived Information Overload Scale to include Fake News and Big Data items

• Administer it to knowledge managers working in the knowledge economy

• Conduct Focused Interviews

• Analyze and Report Results
Progress to date

• Fake News and Big Data questions developed and reviewed
• Survey administered
• 18 respondents
• 7 agreed to participate in focused interviews
• Informal review of raw data
Expected Results

• Fake News appears to have some impact on perceptions of information overload

• Big Data does not seem to have a significant impact on perceptions of information overload
Next Steps

• Complete statistical analysis of results

• Conduct the focused interview

• Transcribe and analyze the interview data

• Publish the findings
Future Direction

- Investigate the information overload response function - the functional relationship between information load, decision accuracy, and time.
- Investigate the impact of Fake News on the information overload response function.
- Develop a cost optimization that determines an optimum for extending the U-Curve through select interventions.
Thank You

Q & A

References available on request