

# Regtech Monitoring: Financial Promotions

Solution Presentation by Visteo Technologies Pty Ltd.



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# The problem statement

Provide regtech solutions to monitor, identify and analyse the promotional material related to banking, credit & insurance



**Deliver a proof of concept that demonstrates:**

- Ingestion of ad media files into a core API for ML services.
- ML processing for image, video, audio and NLP
- A rules engine for specific & principle based rules
- Dashboarding and BI for ML data and breaches

We also proposed

- Key user stories
- Solution architecture , key functional modules & feature list
- Methodology to handle Principle breaches & Risk rating methodology



## Consumer

- Does the ad **clearly convey**
  - Material Product /service features
  - Benefits & Risk
  - Costs and Fees

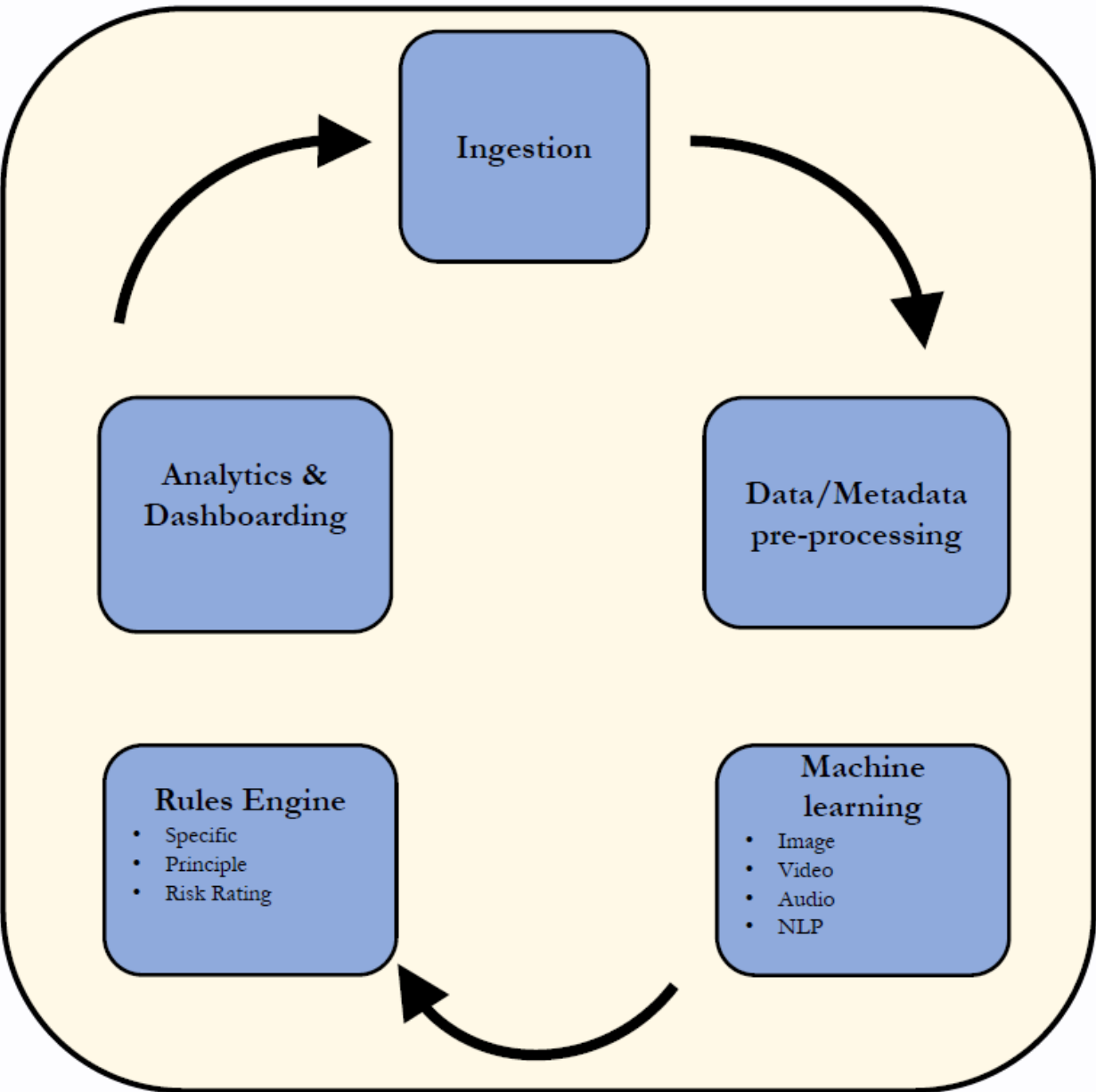
## Industry/Advertisers

- Pragmatically interact with ASIC
- Proactively , pre-comply through automated self assessment
- Reduce cost of compliance, financial penalties, reputational cost.

## Regulator

- Realtime compliance monitoring
- Shorter TAT - Breach id, validation to enforcement
- Focus Analyst time on Qualitative work/ fine tuning detection
- Enhance consumer education and awareness

**Ensure overall high quality  
promotions that compete for fair  
consumer outcomes**



# ML – Image, Video & Audio



Text extraction,  
recognition  
and coordinates

Objects detection  
Entities Detection

Extract Audio  
Speech to text

Extract Image frames

Facial emotions





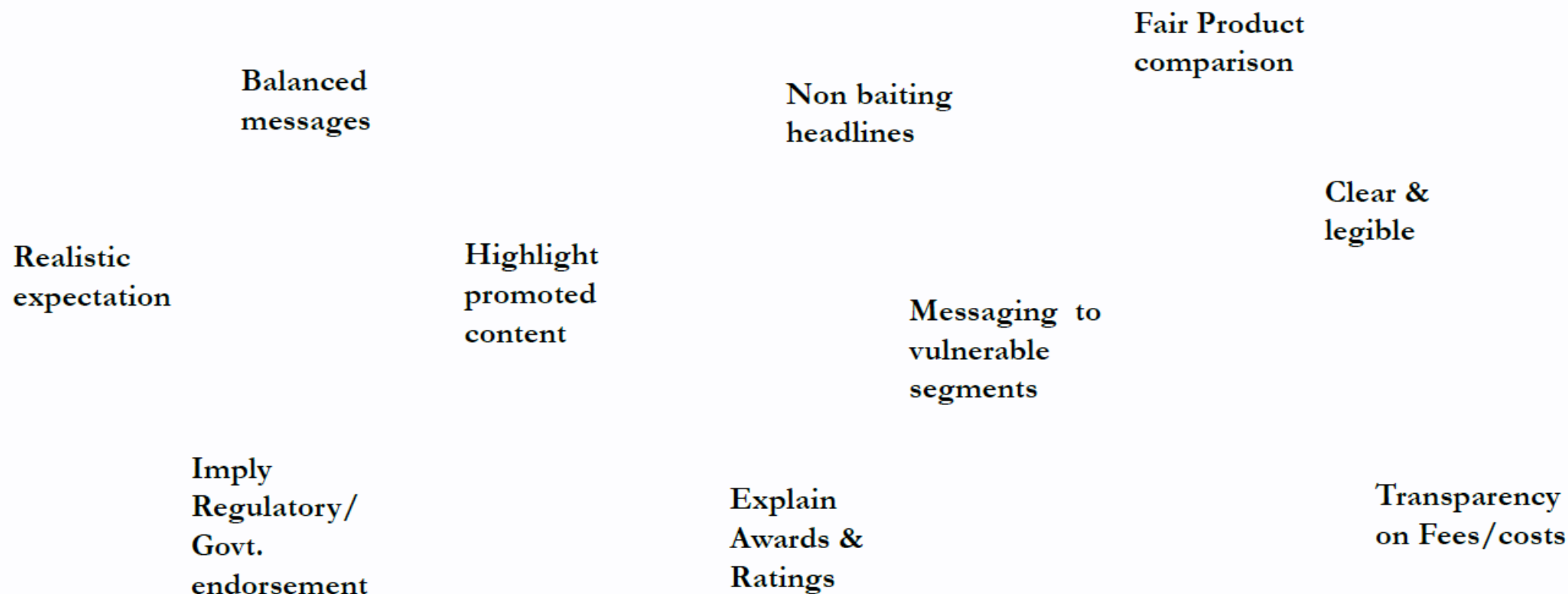
- Product classification: Home Loans, Credit Cards, Car dealership etc..
- Medium classification - Print, Web, Radio, Youtube, Twitter, Radio etc..
- Sentiment detection: Detection of sentiment strength in headline
- Headline and TnC \*: Classification of text content
- Entity extraction: Identification of Organizations, locations, numbers etc.





# Principle Breaches – Our context

- Should look to promote **fair outcomes for consumers** and compliance of financial firms through application good practices some of which are(from RG 234) :





# Rules Engine - Breach Register



ASIC Act , NCCP Act, Corporations Act, RG 234 - Advertising financial products and services.



- Extracted Text & metadata
  - Images
  - Video
  - Speech
- NLP extracts
- ASIC Master Data
- 3<sup>rd</sup> party data

## Specific Requirements

- ACL conditions
- APR & Comparison Rate missing
- Comparison Rate Warning & text
- Comparison Rate not prominent
- Unclear if interest rate is APR or Comparison Rate
- Prohibited words

## Principle based

- Metadata focus
- Complexity of words
- Prominence of Headline and TnC's
- Use of abbreviations
- Risky words
- Clarity of images.

Breach Register

+

Risk Rating\*



1. Breaches of specific Requirements ie “Hard Measures”
  2. Breaches of Principles based: 10+ measures , “ Soft measures”
  3. **Product – complexity scale**
    - 1(least complex ) to 5(very complex – professional investor products)
    - **Represent the Consumers viewpoint** in terms of *underlying purpose* (Financing/Borrowing, Investments, Liquidity, Principal Protection, Insurance, Tax benefits etc)
    - *features & risks* (affordability/personal liability risk, market risks etc)
- Weightings assigned to Specific Rules and Principle Based ones. for ie. 50:50 or 60: 40 and have weighting between ( 1 and 5) each product class..



$$\text{Risk Rating}_{\text{ad}} = \left[ \sum_i^N \text{Weighting}(\text{for each Specific requirement}) \right. \\ \left. * (\text{No. of Breaches of Specific req}) + \sum_j^N \text{Weighting}(\text{Soft Measure}) * (\text{No. of Breaches of Principles}) \right] \times$$

***Product Complexity scale (1 – 5)***

Higher the risk rating for calculated an ad, greater is the scope for misinterpretation by Consumers & mis-conveying critical information

- ASIC REPORT 384 Regulating complex products –could be the basis of forming the product complexity scale through consumer groups and industry collaboration

# Video Placeholder



# Unique propositions

- E2E in its architecture
  - Data ETL, ML services , Investigative workflows & Analytics within a single solution
  - Data scientists and investigative analysts can operate and collaborate within a single solution
- Process & analyse streaming & batch data in real time
  - Breaches can be detected in within 2-3 minutes.
- Modular functionality integrate through API's and micro services
  - Helping scale horizontally faster
- Industry and advertisers could potentially run a voluntary ad compliance check through another dedicated API



# General Challenges

- Diversity - Image Sizes/Scaling , Resolution, Colour Palette, Noise, Video FPS etc
- Text Recognition - OCR accuracy
- Unbalanced dataset.
- Small dataset for training, validation and testing.
- Rules Engine – Principle Based



# About Visteo Technologies



- Based out of Sydney & India we are a technology company building bespoke fintech and regulatory solutions
- Our core management team has extensive domain experience of over 40 man years in financial services , in regulated functions and building analytical solutions in banking & markets
- We are team of ~ 75 engineers, designers and solution architects with extensive experience in cloud technologies, enterprise and open source.





# Conclusion

- We appreciate the opportunity to participate in this world leading initiative by ASIC
- Firmly believe that ASIC problem statement can be successfully achieved with current Open Source technologies along with strong architecture , design and delivery capabilities.
- Consumer groups viewpoint in addition to industry feedback is critical
- We've provided an preliminary view of possible solutions and functionality, there are

Thank you!