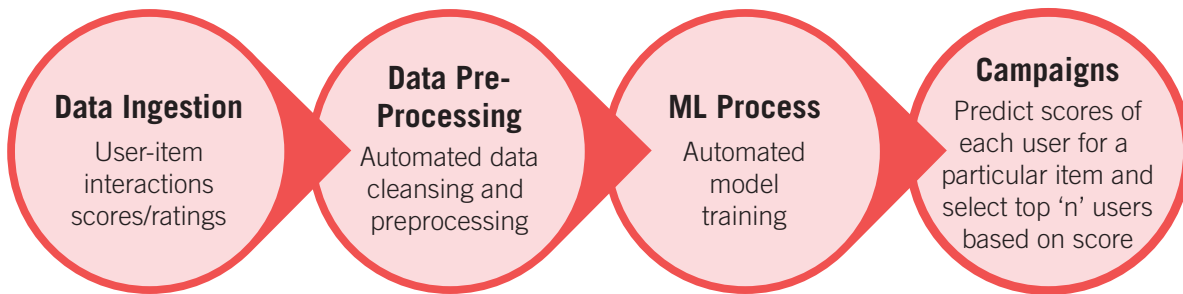## Limitation of Traditional Campaign Strategies

Campaigns are one of the marketing strategies for any retail business that can provide a boost in customer base and revenue. Considerable research and statistics are involved in selecting the right campaign to use; however, much less significance is given to selecting the target customers appropriate for each of these campaigns. The result is that customers are often flooded with bulk notifications.

As a response to these methods, most customers develop a tendency to ignore such emails, thereby missing personalized campaign notifications. As a customer, we want to be notified with only those campaigns which are appealing to us. Personalized campaigns are meant to target only those customers who will be interested in the particular offer/product.

Bitwise Inverse Recommendation Solution

Bitwise developed a solution that uses machine learning to achieve predictive analytics to help businesses improve personalized campaigns. The solution uses a variant of the recommendation engine, what we call 'Inverse Recommendation', to provide targeted customers/users for any campaign. This solution can be used for product-based campaigns or general campaigns and can be integrated with a simple call from Python as a service.

Process

Data Ingestion — User-item interactions scores/ratings → **Data Pre-Processing** — Automated data cleansing and preprocessing → **ML Process** — Automated model training → **Campaigns** — Predict scores of each user for a particular item and select top 'n' users based on score

The Inverse Recommendation solution uses the below steps to quickly train the model and predict target users for a given product or general campaign.

Data Ingestion	User-item interaction data with scores/ratings is acquired from input file.
Data Pre-processing	Cleansing process executes basic steps and statistical methods to prepare the data for model training.
Machine Learning (ML) Process	An automated process trains data with multiple parameters and selects the best one to be used for that particular campaign.
Campaign	Once the model is ready, a report will be generated of all customers/users (in descending order of priority) who will be interested in a particular campaign.

Enhancement Option

Certain vendors use sophisticated technologies to send campaign notifications. These technologies provide user actions on those notifications. Bitwise can integrate these actions into the Inverse Recommendation process to enhance the output.

Comparison with Clustering and Association Rule Methods

Clustering and Association		Inverse Recommendation
Rules for recommendation are built once on training set and used for multiple future predictions	**Training**	Incorporates continuous learning techniques to make sure that latest data is always considered when campaigns are executed
Scalability issues result in degraded performance with high volume of data	**Scalability**	Overcomes scalability issues by implementing collaborative filtering methods for recommendation

Key Benefits

> Boosts campaign effectiveness by targeting specific customers for specific campaigns.

> Reduces campaign analysis time, which helps business teams to better utilize their time elsewhere.

> Personalized emails provide a better customer service experience with your business.

> The model uses the latest data for generating output to ensure that all data collected after the previous model training is included.

Why Bitwise for Your Analytics Needs

- Extensive experience developing innovative machine learning processes.
- We offer the relevant expertise, proven methodologies, vendor partnerships and industry best practices developed over 20 years of experience to help implement Analytics related solutions.
- Bitwise offers a proven approach to aligning the appropriate requirements such as Project / Business Requirements, Use Case, Platform Identification, Tool Evaluation and Resource Requirements that are needed to implement advanced analytic capabilities.

Accelerate Your Analytics Modernization Initiatives
Call us at **847.969.1500** or email **sales@bitwiseglobal.com**

About Bitwise

Bitwise delivers technology solutions that leverage data to enable business insights. By deploying our breakthrough technology innovations, we help our global clients maximize their competitive advantage. We are the industry's most experienced and dedicated team of data professionals, focusing on data warehousing, business intelligence (BI), big data, and Web/mobile application development. We optimize value for our clients through our global-delivery model and with our proprietary technology tools that reduce the time, complexity, and cost of data initiatives. Together, our people and technology provide the insights clients need to continue to lead their fields. Bitwise is headquartered in Chicago, Illinois with offices in Pune, India and London, UK.

✉ sales@bitwiseglobal.com

📞 847.969.1500

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www.bitwiseglobal.com
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