

A smiling woman in a yellow top is looking at a tablet. Overlaid on the image is a network diagram with nodes and lines. Several icons are scattered around the diagram: a Wi-Fi symbol, a dollar sign, a share icon, a padlock, two people silhouettes, a location pin, and an envelope.

# A Marketing Leader's Guide through Six Machine Learning Solutions

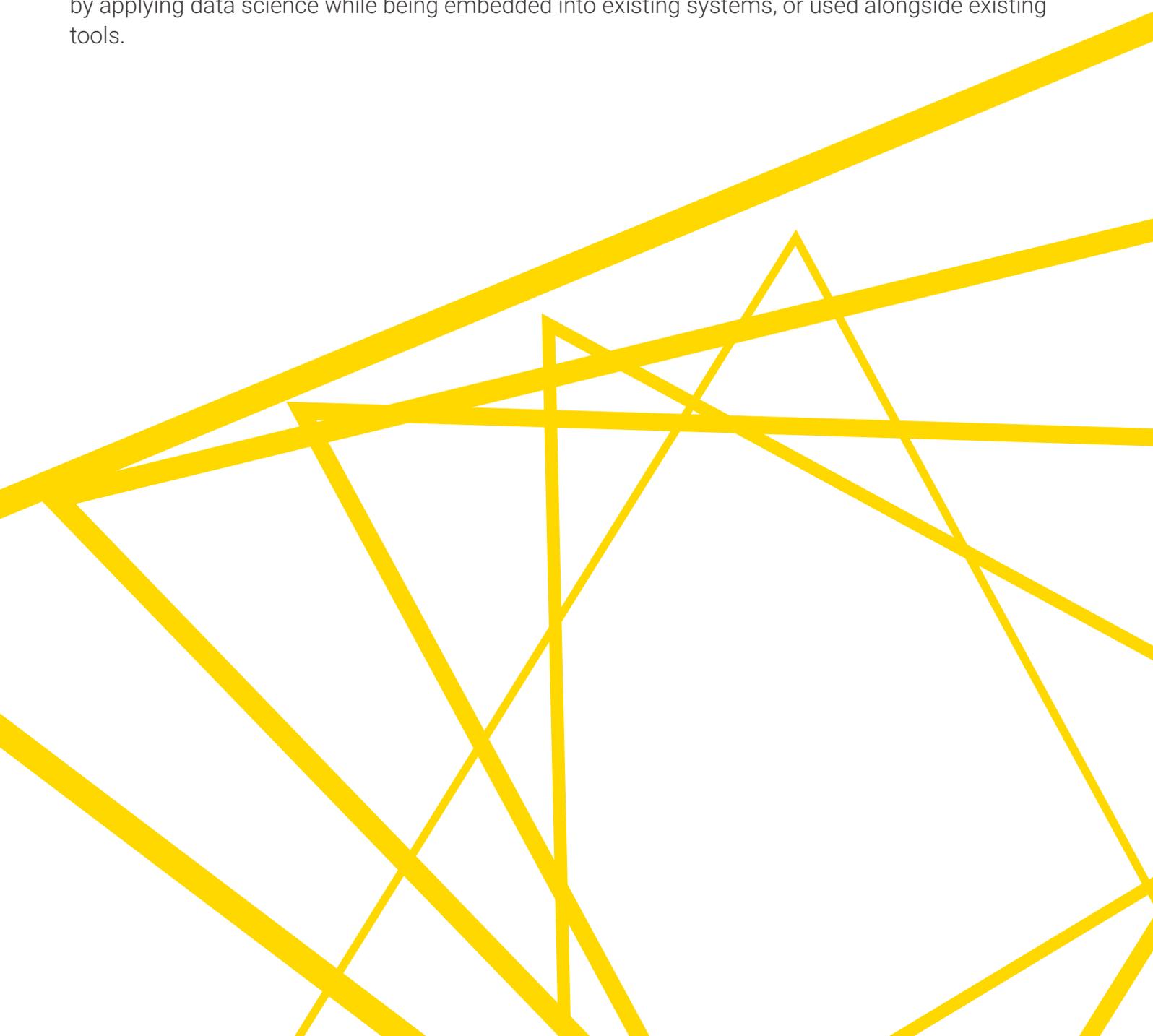
Accelerate lead time to  
analytics apps and services

# Bring Advanced Analytics to Your Team

When marketers moved from billboards to social ads, the discipline became data-driven. Today the department is poised for being among the first to apply advanced analytics to drive business outcomes at scale. Marketing is expected to provide the greatest ROI of all AI and analytics investments, with McKinsey predicting a **total gain between \$1.4 trillion and \$2.6 trillion.**

But mastering new technology to reap these potential gains is a challenge. Marketers who have worked with Excel and BI tools for their entire careers are reluctant to move away from the tool they know and use the most. But if they do, they can acquire the skills and self-sufficiency needed to build advanced analytics apps and services using AI/ML techniques.

This booklet gives you an overview of six common marketing activities that can be vastly improved by applying data science while being embedded into existing systems, or used alongside existing tools.





## Hypertarget with customer segmentation

71% of consumers expect companies to deliver personalized interactions, says [McKinsey](#). To deliver, businesses need accurate customer segmentation. The main challenge here is keeping the segments precise. This is easier with internal customer data, which is often organized into a structured database. Segments are easily set up for example, for targeted campaigns based on revenue, loyalty, or demographics.

Gathering external data from webpages, forum posts, videos, or comments is a different story. Typically text-heavy, such data can also contain dates and numbers. This makes it more difficult to understand than organized internal customer data. While we can assume that this external data contains groups, we don't know what they are. And it's even more difficult to make sense of it using traditional tools.

Going beyond the capabilities of traditional techniques, machine-learning "clustering" techniques can explore the data, compute multiple variables, and identify groups automatically. Machine-learning-based customer segmentation has the potential to reveal groups in the data that marketers would not find on their own. And when a feedback loop is set up between the ML model and marketing campaign results, over time the ML model will learn to fine-tune the defined segments, maximizing campaign performance.

Leverage [ML-based customer segmentation](#) to hypertarget multiple personas with tailored content.

# Predict early churn indicators and retain customers

Attracting a new customer is 5 times more expensive than nurturing an existing one. Identifying which customers are at risk of churn gives marketers the insight they need to maintain effective nurturing programs.

Churn is an important metric, but it's a lagging indicator. Marketers want to take action to retain customers before they leave, but they don't have the ability to parse behavioral data, build multiple customer profiles, or track CX to identify early warning signals. To reduce churn effectively, businesses need early red flags.

Using Random Forest, a supervised machine learning technique, marketers can get these signals in time to act. Customer behavior can be very erratic. This shows up in the data as "outliers." A lot of erratic behavior makes it difficult to detect real signs of customer churn, but Random Forest can handle skewed or "erratic" data very well. It produces accurate, reliable churn predictions, computing huge amounts of data easily to reveal real signs of churn that a human just wouldn't be able to detect.

Early insight into customer behaviors gives marketers the time to intervene, adjust strategies, and prevent churn.



## Conduct in-depth CX analysis and maximize customer value

Marketing departments are aware of the need to enable a more “consumer-like” buying experience as buyer behavior in the business market shifts. The better a business understands the customer, the better-equipped they are to create good customer experiences and prevent customer churn, for example.

Good customer experience analysis is tough. It involves accessing data from multiple customer touch points and deriving useful insight from potentially very messy data. Topic modeling is a data science technique frequently used in voice of customer research to improve customer-centric strategies and business results.

The topic modeling technique scans data, automatically identifying words and phrases that summarize the topics, and to what degree they are referred to. Similarly to our customer segmentation example, it can sift easily through “unstructured” data, the type of text-heavy data typically found on social media. Topic modeling summarizes huge volumes of this data quickly and at scale.

Understanding the customer is key to providing the best service. With **topic modeling**, businesses can now literally analyze each and every customer voice and deliver customer value.



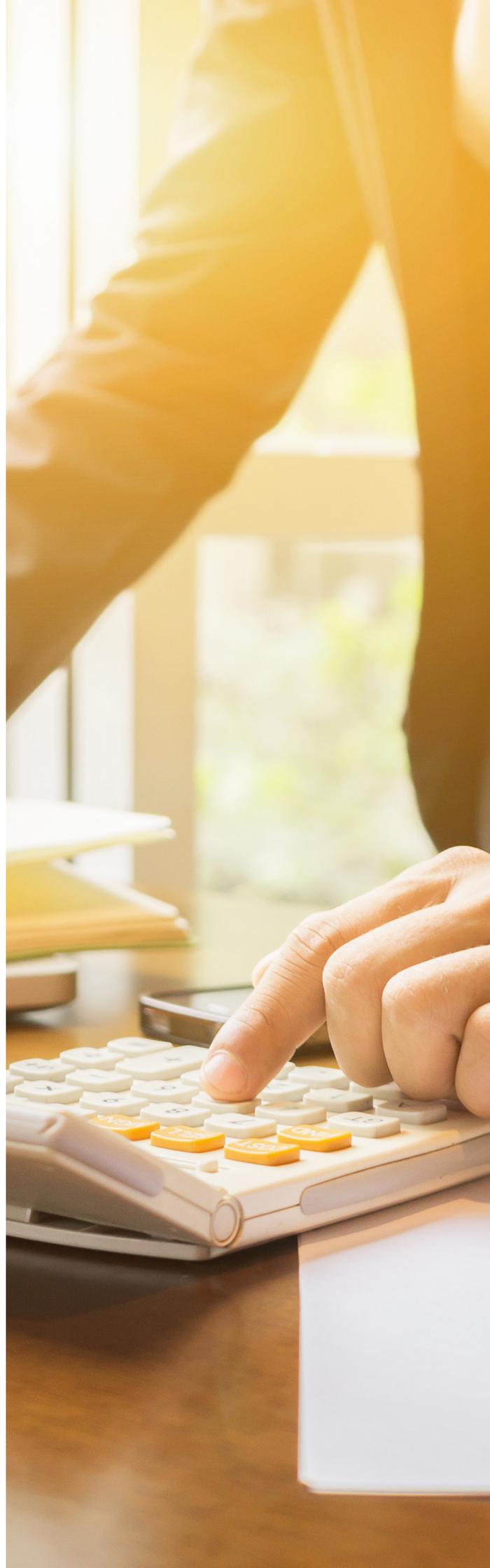
## Go deeper on SEO with semantic search and increase conversions

Times have changed since SEO agencies were advising content writers to litter their articles with popular search terms and phrases. Google now tries to understand the intention and contextual meaning of the words the person is using. For example, search engines determine where the user is located and what they have searched before. Semantic search personalizes a search to make the results more relevant to the user.

Conventional digital marketing techniques have previously conducted semantic search analysis, digging into the metadata in the HTML of a webpage – i.e. the data that is displayed in the Search Engine Results Page (SERP).

Now, with natural language processing, marketers can go deeper on SEO with semantic search and analyze the opinions and ideas (often text-heavy data) shared by people on social media. Marketers can use insight on which keywords are most appealing and optimize conversion rates.

Maximize conversion rates through improved marketing initiatives by applying [SEO with NLP for semantic search](#).



# Bundle products with market basket analysis and boost sales revenue

Knowledge about what customers buy provides marketers with the kind of insight that will enable better product placements in an online catalog or website, increase profitability through cross-selling opportunities, or highlight which incentives are needed to motivate a customer to buy more.

Accessing, blending, and processing siloed data — from purchase history to transaction data — for market basket analysis is complex. The use of spreadsheets is common, but comes with limitations on how much data teams can process at a time.

Association rule mining can efficiently analyze huge sets of market basket or transaction data and not only uncover insight into the associations between items, but also detect previously hidden relationships. Marketing teams can use this to reliably identify the relationships between frequently bought items extremely quickly, and even make predictions.

Increase customer satisfaction and sales revenue by applying **intelligent market basket analysis**.



# Automatically flag influencers and extend brand reach

On social media, platform users are communicating in memes, inside jokes, and GIFs. The ability to analyze this data lets marketers capitalize on the latest trends. The problem, though, is the speed with which these platforms change, and the language people communicate in. It makes more sense to identify who the influencers are (since they're the experts in the target market), and develop an influencer marketing strategy.

While social media data is increasingly available, identifying influencers in big datasets is a continual challenge. Social media trends are also constantly changing. By applying network analysis, marketers can establish how multiple influencers are connected. Network analysis is able to understand immense numbers of social interactions and establish relationships between the multiple stakeholders. For example, network analysis of tweets will connect the relationships between an original tweet, how often it was retweeted, and by whom. These many-to-many relationships are too complex to be established manually. Such a fine-grain analysis enables marketers to investigate the dynamics between influencers and uncover new insight.

Ensure dynamic influencer marketing strategies with influencers automatically flagged through efficient **network analysis**.



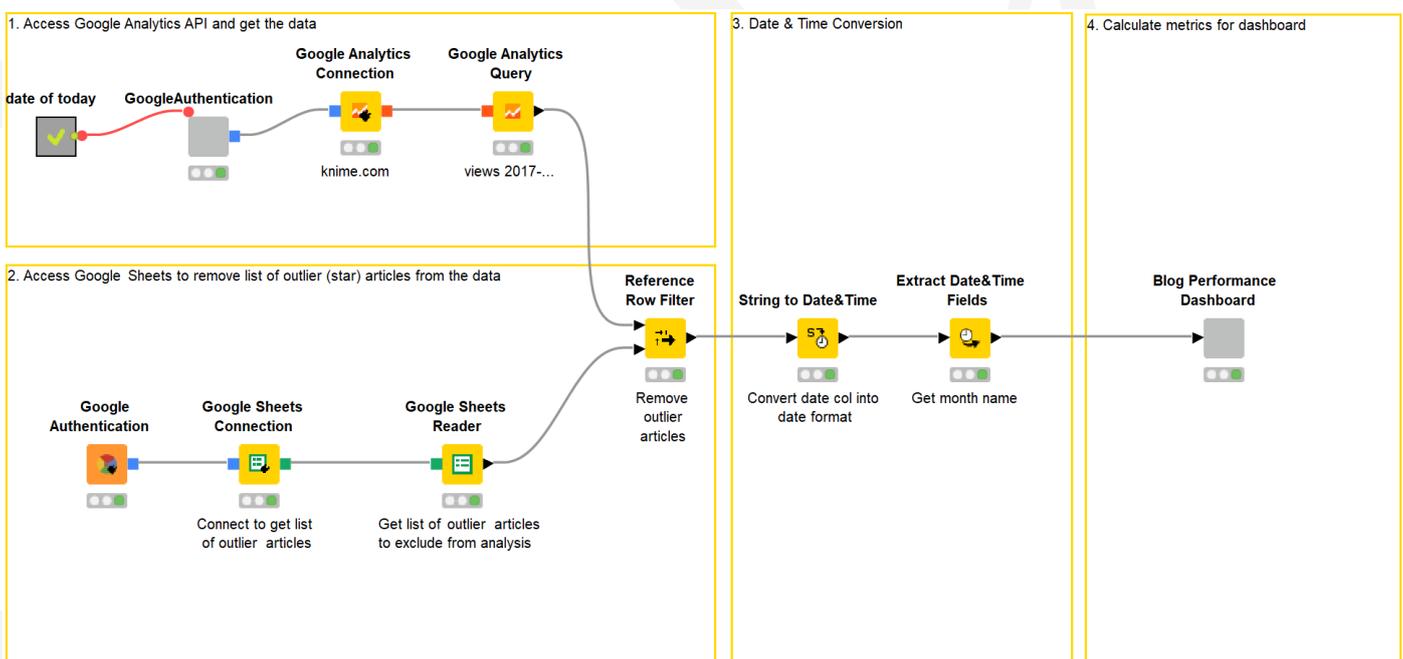
# Marketing Needs Faster Lead Times for Analytical Solutions

Many organizations are experiencing long lead times to building out analytics solutions. These solutions have a direct impact on revenue, but custom scripting takes months rather than weeks. Marketers need a tool that will help them and their analysts be self-sufficient to build and apply advanced techniques quickly. To react quickly to the market, marketers will benefit much more from analytical applications this quarter, rather than next year.

For this reason, many organizations, like Würth, Sport England, and Palo Alto, are adopting a no-code/low-code analytics tool, like KNIME.

KNIME provides a visual platform that is intuitive enough for marketers but sophisticated enough for data engineers and data scientists. Access to 300+ data sources enables universal connectivity. Integrations to all the relevant marketing tools and environments give teams the flexibility to work in the tools and environments of their choice.

Since the platform works for all data workers, marketers and data experts can collaborate to build on the expertise of both sides, without lengthy meetings or trial-and-error attempts at building the right model.



## This enables three things:

- 1.** Marketers to be self-sufficient, building out more advanced analytical solutions than what would be possible with spreadsheets or Business Intelligence.
- 2.** Data experts to work hand-in-hand with domain experts, so they don't need a fully finished solution before getting feedback.
- 3.** Marketers to upskill and solve more basic ETL and automation problems, while freeing data experts to push the department to the bleeding edge of data science.

# How a Retail Company Built Personalized Ads across 200,000 Product Promotions and 1,700 stores

A leading North American retailer with operations in the automotive, hardware, sports, leisure, and housewares sectors is using KNIME to personalize marketing campaigns, improve promotional effectiveness, and build customer loyalty.

With nearly 2000 pages per year of weekly and special event flyers involving 180,000 product promotions, this translates into too many decisions for a human to make manually in a timely manner. The better these people are supported, the more compelling the promotion. KNIME is key to enabling the company to work across platforms, thanks to its ability to integrate the multiple tools and platforms that prescriptive analytics requires. The core analytics and machine learning operations are vastly simplified using KNIME, allowing data scientists to focus on improvements rather than manual “keep the lights on” work. Business users are successful in running many of their own experiments through browser-based data apps rather than having to rely on data scientists for everything.

When COVID hit, quick work was needed to adjust. Using KNIME got them to 90% of their targets within hours.

Data unification, exploration, and integration will drive the future of next-generation personalized marketing. This requires vast amounts of customer data. The retail company is confident in KNIME's excellent ability to handle and analyze these volumes of data.

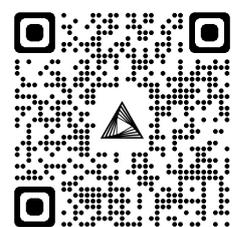
“Using KNIME, we can get from concept to execution quickly, from eight weeks in 2019 to four weeks in 2022.”

Associate Vice President.

## About KNIME

KNIME is a global company that provides data analytics tools for customers across verticals. It enables marketing departments specifically to gain a complete view of the customer, achieve high-precision targeting, and lift campaign ROI, all while ensuring data security and privacy. KNIME software is embraced by marketers because it enables teams to use a single platform from start to finish. All processes are verifiable, secure, and easily shared within teams.

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