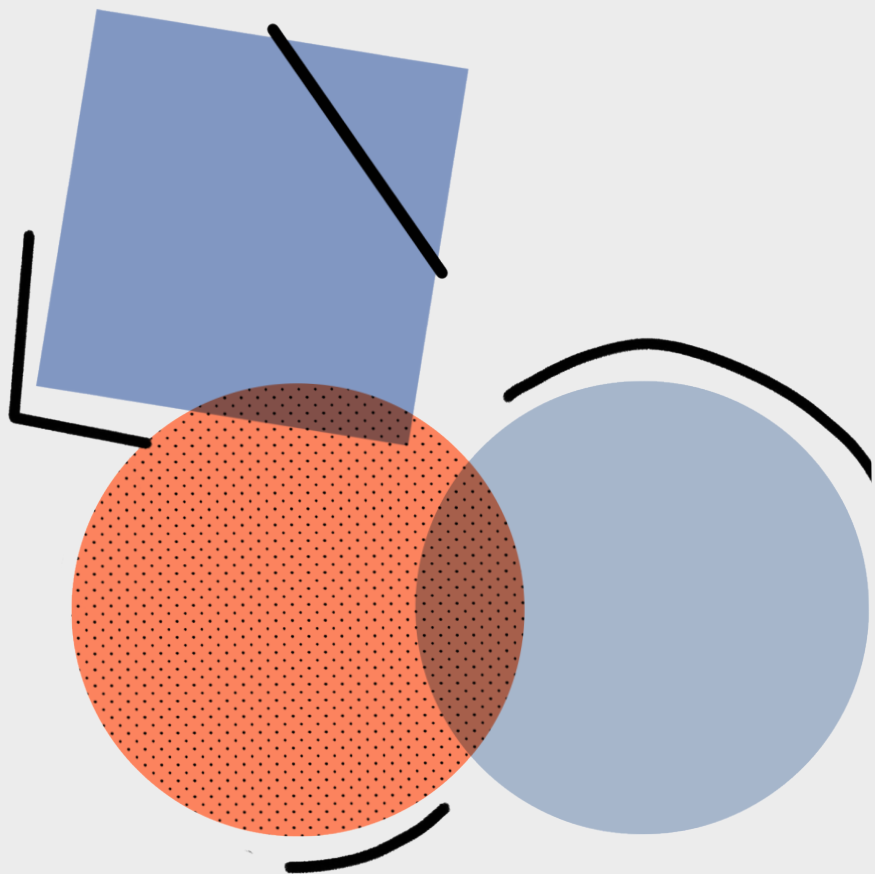
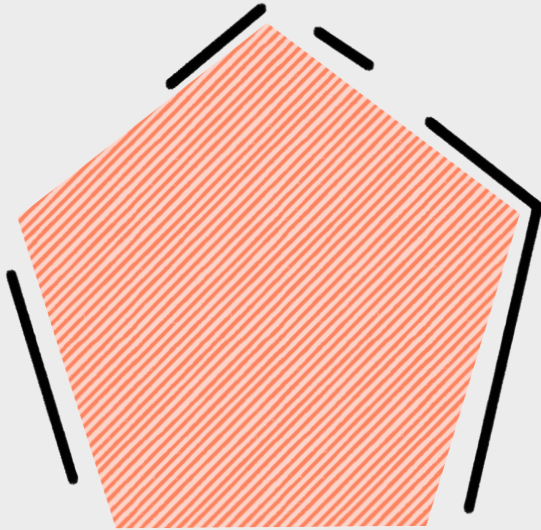


Better, Smarter, Faster

How AI is Transforming CDPs



ChatGPT, launched in November 2022, captured the world's imagination as an example of what Artificial Intelligence (AI) can do. But ChatGPT is just the latest in a long line of ever-more-powerful AI systems, and will be followed by others that are more powerful still. More than the capabilities of any particular AI tool, what matters to business is how their organization can best take advantage of the opportunities that AI creates. This requires a clear picture of how AI will fit with other technologies and business processes.

Read on to learn how AI can add value to Customer Data Platforms, how CDPs can make this possible, and what changes companies can expect as a result.

AI Can Improve Every Aspect of CDP

Let's start with the fun stuff: the benefits that AI can provide to a CDP. Much of the excitement surrounding ChatGPT has been about content creation, including generating ideas, speeding research, and actual writing. But the capabilities of AI are much broader than that. CDP-related applications fall into two broad categories: **data management and activation**.

Data Management applications relate to development of unified customer profiles within the CDP database. Most of this work has traditionally been done by technical experts. AI can support them in ways including:

- **Data integration:** AI can examine input data to classify its contents and map these to a CDP data model. Simple versions of this have been available for decades, such as recognizing when a field contains email addresses. But smarter AI will be able to make much more subtle judgements. In fact, the latest AIs are already able to build complete connectors for the entire data loading process themselves, removing a huge traditional bottleneck in adding new data sources to a CDP.

-
- **Feature extraction:** Customer data is increasingly captured in semi-structured and unstructured formats such as web behavior logs and chat session texts. AI can scan these to extract specific bits of information, such as customer names or dates. AI has already moved beyond simple keyword searches to identify the context of such mentions and infer relationships such as whether an individual is the buyer or user of a product. This ability to understand context will continue to improve, enabling AI to make more precise judgments and feed richer information into processes that require structured information.
 - **Data quality:** AI can read the contents of input data to identify quality issues and propose or make corrections. To do this properly, the AI needs access to reference data such as lists of valid product names or street addresses. The AI's ability to locate and connect with such sources on its own, or with minimal human assistance, removes another bottleneck in the data management process. AI can also update the reference sources themselves with new information as it appears in data feeds.
 - **Transformations and reformatting.** Data often needs to be placed in a standard format, such as consistent representation of dates. It may also need to be converted to specific formats that are needed for particular systems, such as converting relational tables to flat files for use in data analysis. Traditionally, these conversions were made through hand-coded rules, which often failed when they encountered an unexpected condition. AI can make these conversions based on training, rather than rules, which is both less work than building rules and can enable AI to handle cases that it has never seen before.
 - **Identity management.** Identity management includes matching to determine which personal identifiers refer to the same person, and persistent identity maintenance to

ensure each customer's ID remains the same over time. Like data transformations, but much more complicated, it has traditionally been based on rule-based systems. AI can be trained to replace these with more flexible and often more accurate alternatives.

- **Privacy.** Identifying regulated data and classifying it is a foundational task in privacy management. Keeping up with changes in data inputs is especially challenging as regulated data may be added to previously-integrated sources without notification. Similarly, changing regulations may require monitoring new data types or applying new rules to known data. AI can reduce the manual labor associated with these tasks. In the future, it will also likely be applied to monitor data usage and ensure compliance with privacy rules – something which currently is done manually or with rule-based systems which grow increasingly complex as the rules themselves multiply.

Activation refers to applications that use the customer profiles built by data management processes. These range from data analysis to customer interactions. They are typically the domain of business users, not technical staff, although technical staff remain involved. Applications supported by AI include:

- **Customer profiles, segments, and personas.** AI can identify clusters of similar customers and organize them into segments. It can do this more quickly than human analysts and will often find subtle relationships that are missed by human analysts. Generative AI in particular, can convert data about segment members into descriptions of their personas, offering additional insight into the company's customer base.
- **Predictive models.** AI has long been used to develop models that predict promotion response, customer lifetime value, churn probability, product and channel preferences,

and next best actions. Machine learning in particular, has enabled marketers to develop large numbers of accurate models quickly and at low cost. AI-based predictions can incorporate more data sources and find more interactions among data elements than human analysts using conventional tools. The resulting model scores can be stored as attributes on customer profiles or recalculated on demand as they are needed.

- **Audience optimization.** AI can apply predictive models and segmentation to select the optimal audience for a particular promotion, or select the optimal product for members of a particular audience. Optimization can look beyond response rate and cost per response, to include factors such as long-term impact on customer value, limits to the number of messages sent to each customer, and expected future promotions for each customer.
- **Opportunity identification.** AI can analyze CDP data to find opportunities for improvement, such as journeys that are not performing well, segments that haven't received promotions or content that isn't yielding the expected amount of value. This is a particular area of progress in recent years, as AI has gotten better at understanding business goals and presenting information in usable formats such as narrative text.
- **Journey development.** AI systems can track existing customer journeys and identify critical steps where intervention could make a difference. It can go further and use these findings to design new journeys, including multi-step campaigns and real-time interaction flows. These can include rules that send customers to different steps based on their behaviors and profile attributes. It can then monitor performance and optimize journey design over time.
- **Performance measurement.** AI can execute

advanced attribution methodologies, including multi-touch, incremental value estimates, and marketing mix analysis. These require preparing large amounts of data, often from a mix of internal and external sources, and connecting marketing messages to customer behaviors.

- **Create content.** Generative AI systems like ChatGPT and DALL-E can create text and images based on user prompts. This is the application that has received the greatest attention, because it is a new capability that addresses a common marketing bottleneck. Typically, the output is used to generate ideas or drafts, rather than create final versions of content.
- **Mass personalization.** Once AI has advanced to the point where marketers are comfortable with using its outputs without human review, it will be able to create individual-level personalized messages. This will rely heavily on CDP data to provide the background needed to make each message as effective as possible.
- **Customer interactions.** Generative AI can interact directly with customers through chatbots in support of marketing, sales, and service programs or by auto-generating responses to email questions. AI can also be used by contact center agents or salespeople to find answers to questions or suggest what to say next. Again, these responses can draw on customer profiles in the CDP to make the answers more effective.

At present, most of these applications use AI as an assistant to make human workers more effective, efficient, and productive. In some, such as chatbots, the AI is already working independently. Over time, the number of tasks that AI can perform without supervision is likely to increase. Whether the AIs are assisting or replacing human workers, the net effect is to enable companies to get more done, more quickly and at higher quality. This applies

both to assembling more complete and current customer profiles in the CDP, and to making better use of those profiles across all applications.

Designing a CDP to Take Advantage of AI

As the primary data source and activation channel for AI systems, the CDP plays a major role in realizing their potential for value. But the CDP must be designed correctly to make this possible. Requirements include:

- **Data assembly.** AI needs to be trained to make decisions that match what's expected. This training has usually been based on carefully prepared historical data that provides examples of correct answers to the problems it will address. Newer types of AI systems can work with less structured inputs but still need a base of data to draw from. As the primary source of customer information, the CDP is a major component in assembling training data for customer-related CDP applications. In particular, the ability of the CDP to combine data from different sources into unified profiles gives the AI a full picture of customer behaviors it is likely to predict. To be usable by AI, this data needs to be mapped into data models that combine similar information, such as product identifiers from different sources. AI applications are also likely to need new data types and attributes, such as tags applied to marketing materials that give the AI model data points to analyze. Many AI applications will need to correlate business events over time, such as ad impressions with subsequent purchases. This requires a time dimension on many CDP records.
- **Testing and validation tools.** The outputs of AI processes must be checked to ensure accuracy. The CDP needs tools to support this across applications ranging from input data mapping and identity matching to predictive

models. These tools must make it easy to compare training inputs, AI outputs, and hold-out samples. They may include advanced features to assess the value of AI-based applications, such as estimates of the change in customer lifetime value, calculations of the incremental impact of media campaigns, and simulations of how new rules would interact with existing systems. In addition, the system needs to identify inputs that are beyond the range of the system's training data, so users realize the model cannot work with these reliably. Similarly, the system needs to monitor model performance over time so it knows when retraining is needed to improve performance. Although each AI application will have its own testing features, standard tools to compare the results of different methods will make it easier for non-technical users to assess results.

- **Output integration.** Many AI applications will return an attribute to a customer profile, such as a segment code, model score, channel preference, or personal ID number. The CDP must be able to incorporate the algorithms created by the AI system to calculate those values, to store the values on the profiles, and to make the values available to other systems. Other AI applications may create process flows which execute multiple steps over time. These may be converted into AI-generated program code or become services wrapped in AI-built APIs. However, they are presented, the CDP must be able to take advantage of them.
- **Real-time APIs.** AI-based services such as website personalization and chatbots will require real-time scoring and recommendation, which are based on real-time access to data assembled in the CDP. The CDP must be able to provide this data as quickly as the application requires. While real-time response itself is a standard CDP capability, taking advantage of AI possibilities will require the CDP to easily accommodate near-continuous changes in data

sources and API parameters. This will enable the AI to adapt to new data sources and values as these are added and to the loss of inputs as older sources and values are discontinued. The CDP itself is likely to need AI-driven capabilities for data ingestion, training set creation, and model updates to meet these requirements.

Redesigning Marketing

CDP changes are only part of the adjustment that companies will need to take full advantage of AI. Organization and process changes are likely to be more fundamental, and more challenging. Some of those will be:

- **Training.** Marketers, marketing operations, and MarTech personnel will all need to understand what different AI tools can do and to keep informed as capabilities change over time. In particular, they'll need to learn how to judge whether a task lies outside the current boundaries where AI is reliable, something that is often not easily determined. They'll also need to learn how to effectively operate AI tools, through acquiring new skills such as "prompt engineering" for generative AI systems like ChatGPT and interpreting model quality metrics. This training will also need to incorporate security and privacy considerations, areas where some AI technologies create significant new risks.
- **Workflow design.** Workflows for processes such as creating a campaign, defining segments, or adding a new data source will need to incorporate AI activities. This might mean adding a step to build new predictive models or training AI to execute a new task. These changes require identifying where AI will fit into the workflow and then defining the exact steps needed to implement the AI-based function. Again, these new processes must include privacy and security controls in addition to execution of the task

itself. Building AI into standard business process flows is essential to ensuring it is employed widely, consistently, and effectively.

- **Program and content design.** Marketing processes will change as well. Campaign structures will need to be redesigned to use predictive model scores to assign next steps. Dynamic content templates will need to call recommendation engines for next best actions and act on their replies. Segment design, audience selection, media choices, website personalization, testing methods, result measurement, and other key marketing activities must all be adapted to take advantage of AI-derived inputs. Ultimately, AI may design entirely new programs and contents based on a combination of existing materials and user guidance.
- **Redivision of labor.** Redesign of workflows and programs may involve fundamental changes. Tasks that were formerly executed by different specialists may become a single step in an AI-based process. For example, instead of first defining segments and then creating content for those segments, a system might test different content and segmentation combinations before it settles on the best choice. This sort of redesign requires greater cooperation and flexibility than current marketing practices, which assume that most tasks are completed by specialists who receive an assignment and execute it independently.
- **Supporting systems.** Changes in workers' tasks will require changes in training, measurement, and rewards systems. Cooperation among previously separate teams will become increasingly important, as will flexibility to take advantage of new opportunities as AI creates them. Conventional productivity metrics such as number of campaigns created or lines of copy written will be increasingly irrelevant. They should be replaced by new metrics focusing more clearly on business outcomes. More

than ever, workers will need to be rewarded for learning to use new technologies effectively, as this will increasingly drive business success.

Where Do We Go from Here?

The potential impact of AI on business in general, and marketing in particular, is almost unfathomably huge. Rather than predict exactly how these changes will play out, companies need to build foundational systems that will enable them to take advantage of new opportunities as these arise. The Customer Data Platform is one of those systems. CDPs themselves must change to play this role, with particular emphasis on providing flexibility in how data is captured, processed, and exposed; how AI-driven analytics are incorporated into marketing programs; and how marketing programs themselves are organized. Above all, companies must ensure provide training, organization, and cultural structures which enable them to adapt effectively to changes as they occur.

About Optimove

Optimove is the first Customer-Led Marketing Platform. Its solutions ensure that marketing always starts with the customer instead of a campaign or product. Customer-led marketing has been proven to deliver brands an average increase of 33% in customer lifetime value.

It is the only customer-led marketing platform powered by the combination of 1) rich historical, real-time, and predictive customer data, 2) AI-led multichannel journey orchestration, and 3) statistically credible multitouch attribution of every marketing action.

Optimove provides industry-specific and use-case solutions for hundreds of leading consumer brands including BetMGM, SodaStream, Pennsylvania Lottery, Papa John's, bet365 and Staples. For more information go to Optimove.com.

Contact:

185 Madison Avenue
New York, NY 10016
www.optimove.com
info@optimove.com

About the CDP Institute

The Customer Data Platform Institute educates marketers and marketing technologists about customer data management. The mission of the Institute is to provide vendor-neutral information about issues, methods, and technologies for creating unified, persistent customer databases. Activities include publishing of educational materials, news about industry developments, best practice guides and benchmarks, directories of industry vendors, and consulting on related issues.

The Institute is managed by Raab Associates, a consultancy specializing in marketing technology and analysis. Raab Associates identified the Customer Data Platform category in 2013. Funding is provided by a consortium of CDP vendors.

Contact:

Customer Data Platform Institute
231 2nd Avenue
Milford, CT 06460
www.cdpinstitute.org
info@cdpinstitute.org