Decisions

Evergage Decisions™ includes industry-leading machine learning that automatically determines and delivers the optimal promotion, offer, image, or complete experience to individual website visitors, application users, and email recipients. The first algorithm included in the Evergage Decisions module is Contextual Bandit, which utilizes sophisticated machine learning to evaluate both the likelihood of someone engaging with a particular offer as well as the business value of the offer to the company. For example, if your company has 15 different homepage hero images it could show someone, the model considers each image and all the data available about the person, and then delivers in real-time (<20 milliseconds) the most relevant experience with the highest potential value to the company.

This Article Explains	Sections in this Article
This article details how Evergage Decisions (specifically the Contextual Bandit algorithm) works individually and with Evergage Recommend.	• How Does Contextual Bandit Work?

With Evergage Decisions, you can upload numerous promotional offers for a specific area on your site. For example, let's say your financial services company has a defined an area on the homepage for highlighting promotions. But with creative for five different offers – credit cards, mortgages, auto loans, checking accounts and 529 plans – you're not sure which one to display to each site visitor.

Contextual Bandit will automatically determine what to display to a particular individual based on an analysis of the data points collected about this visitor. The offer presented will be the one that is most likely to generate the most lift.

How Does Contextual Bandit Work?

Rather than spend time defining rules about which experiences to show different audiences, Contextual Bandit lets you focus on creating powerful messaging and offers. This means, you don't need to worry about associating audience segments to particular personalization campaigns. The machine-learning capabilities of Contextual Bandit figures out the optimal experience each time, for each visitor by:

- **Connecting values to offers** - Contextual Bandit natively understands the value associated with an offer. For example, if a retailer presents an offer for a pair of blue jeans, Contextual Bandit recognizes that it is worth $75 if a purchase is completed. For promotions that do not have a tangible dollar value associated to them, you can assign a synthetic value (e.g., $30 for an eBook download) to help the algorithm evaluate the best offer to display.
- **Factoring in extensive data** - Contextual Bandit factors in an expansive set of data when making decisions. While it's always helpful to have as much information as possible about a particular visitor, Contextual Bandit functions effectively even when very little customer data is available. In addition to individual affinities and intent, which may not be known for a first-time visitor, the algorithm also considers information like time of day and day of the week and visitor-specific data such as browser, device type, referring source, geolocation and time since last visit.
- **Having a simple workflow** - within the Evergage platform, you simply add your creative assets, assign a value to each asset (if it's not an offer associated with a purchase), set the content zone for the campaign on your website, in your app or in an email, and, if applicable, define a specific segment of users. Once deployed, Contextual Bandit uses continuous learning to calculate and present the best experience to each visitor.
- **Being complementary to recommendations** - This solution is considered complementary to, rather than a replacement for, Evergage-powered recommendations. While recommendations focus on driving engagement and discovery by presenting products, content, or other catalog aspects like brands, categories, and styles based on an individual's affinities, Contextual Bandit determines the optimal promotion, banner, offer, or experience to show to someone based on individual data and the business value to your company.