

TABLE OF CONTENTS

The nature of programmatic.

Flip creative on its head.

Bring the art to the science.

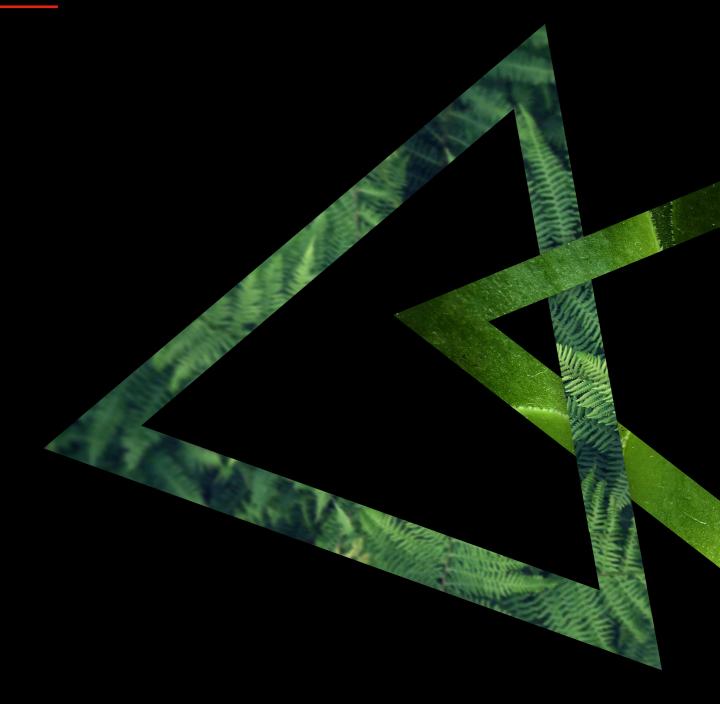
Make useful look cool.

Talk through the millions.

Embrace the similar.

Repeat what's right.

Bring the brilliance.



The **NATURE** of programmatic.

"Clouds are not spheres, mountains are not cones, coastlines are not circles, and bark is not smooth, nor does lightning travel in a straight line." 1

—Benoit Mandelbrot, mathematician

Last year, Chris Breikss, president and cofounder of 6S Marketing, tweeted something that intrigued marketers. He wrote that he was "learning about the Mandelbrot set, fractals, and self-similarity at the Programmatic Insight Summit.² On the surface, the connection between fractals and programmatic advertising isn't obvious, but right down to the melding of art and math, programmatic advertising has a lot in common with this unconventional geometry. And those similarities pave the way for some serious implications for the way you approach creative assets.

Fractals were popularized by mathematician Benoit Mandelbrot in the 1960s and 70s as a way to describe complex weather patterns and chaotic systems in nature. But these geometric beauties, which you've likely seen on screen savers or in works of art, also have a number of features that make them a perfect way to describe the complexity and power of programmatic advertising.

These fractal-like features of programmatic advertising help to describe its power, but they also expose one of its main challenges. "Historically, [advertising] was creating one piece of brilliant creative to be fed to millions of people," says Douglas Kofoid, president of global solutions at VivaKi. "But now it's about turning that upside down. We need millions of pieces of brilliant creative to be fed to each individual on an as-needed basis depending on who the person is, where they are, and what their needs are."

Three attributes that fractals and programmatic have in common.

ATTRIBUTE	FRACTALS		PROGRAMMATIC ADVERTISING	
Repetition	Patterns are repeated infinitely in ever-smaller sizes.	\leftrightarrow	Programmatic ads can be repeated endlessly as different customers and prospects visit websites or social media pages.	
Self- similarity	Every tiny piece of a fractal resembles the whole. But self-similar does not mean selfsame; nature seldom makes identical copies.	\leftrightarrow	Programmatic ads may look similar, but variations make them increasingly relevant to smaller segments of your target market.	
Detail	As you zoom in, the detail visible in a fractal increases continually.	\leftrightarrow	Dynamic creative—swapping out ad elements in real time—enables you to add detail based on an increased knowledge of your audience. That can let your ads reach the pinnacle: a one-to-one conversation with each customer and prospect.	

Flip creative on its **HEAD**.

Programmatic advertising sprang to life as an automated way to buy and sell ad inventory through exchanges that connect advertisers to publishers. The exchanges started with search, but today they cover all channels, from display, social, and mobile to television, radio, and outdoor.

As the ability to target audiences via programmatic became more apparent, marketers enthusiastically adopted it. In 2016, U.S. programmatic digital display ad spend alone will reach US\$22.10 billion, according to eMarketer.⁴ That's a jump of 39.7 percent over the previous year and represents 67 percent of all U.S. digital display ad spend.⁵

One of the things that makes programmatic so successful is the chance to select exactly the audience you think will be most interested in your ad and then to use dynamic creative to deliver an impression designed specifically for them.

Programmatic represents 67% of all U.S. digital display ad spend.

"We need millions of pieces of brilliant creative to be fed to each individual on an as-needed basis depending on who the person is, where they are, and what their needs are."

DOUGLAS KOFOID

president of global solutions, VivaKi

But personalized, real-time advertising at scale also requires real-time creative at scale. That isn't always about delivering a fully formed ad but often about coming up with all the elements that make up the ad.

"The challenge for us, and, we all know it's coming, is that as programmatic reaches up into the brand space and other media, it's going to profoundly affect the way creative agencies develop ideas and the assets we produce," said Christian Purser, chief digital officer at M&C Saatchi, during a panel discussion sponsored by Google in February 2015.6

Using fractal geometry to better understand nature requires a mental shift away from traditional, Euclidean geometry. Purser realized that programmatic requires a similar evolution in thinking about creativity. In this new era of programmatic, marketers and creatives face critical challenges that can be met by implementing best practices: buyin from the right stakeholders, communication and collaboration among the creatives and digitals, and innovative ways to approach creative and production challenges.

So, let's take a look at what that evolution looks like and how you can go about making it, so you can unlock the beauty and power of programmatic.

Bring the **ART** to the science.

"Learning to work with a mathematician and a software developer or physicist was a challenge. Designers and technical people are poles apart, intellectually."

—Jhane Barnes, fashion designer

Barnes could be describing the challenges of creative teams and data analysts collaborating on programmatic advertising. She launched her business in 1976 with a pair of pants that made men look so good, even John Lennon wanted a pair. Two years later, Barnes bought a loom and, inspired by fractals, became a force in the textile market. The influence of fractals was obvious but unexpected—mathematics was her worst subject in school.8

Since 1992, she's collaborated with mathematician Bill Jones—who specializes in software that creates patterns for weaving—and Dana Cartwright, a physicist and software developer who translates Jones's mathematics. Using the tools they developed, Barnes can rapidly explore hundreds of designs, eventually choosing the very best for production.

Similarly, the divergent groups that make up the list of stakeholders for programmatic advertising wouldn't have landed anywhere near each other on the organizational Venn diagram just 10 years ago. But working together, they can ensure programmatic success.

 The CMO understands the brand, the focus of each product, and the engagement needed with consumers based on where they are on their journeys. The segmentation and exact message depend on individual profiles.

- The head of digital advertising combines analytics, creativity, and business savvy to develop and implement marketing campaigns. On a day-today basis, she leads the programmatic advertising team and ensures that members work together in harmony to improve brand recognition and increase purchase intent.
- **Media buyers** make the decisions on where they'll run ads and allocate budget. They also need to bring in resources to design the creative.
- Creatives, either an in-house team or outside agency, produce custom ads to fulfill programmatic needs, an option preferable to using ad network offerings.
- Marketers must work together to deliver a relevant, integrated, compelling message across channels. Leads from various channels and marketing groups can identify who should be involved. Including representatives from the full spectrum of marketing is critical, because modern marketers are held to organizational goals, not channel success.
- The CIO controls the technology and data, including CRM data that can be integrated with data from media and third-party insights.
- Planning and analytics must be involved too, because ultimately programmatic isn't about display ads at all, but about giving your customers a personalized, holistic experience.

The analytics and data management teams are often the instigators of data-driven advertising. They're the experts at looking at data and creating core audiences. To drive business results from digital efforts, they need to disseminate that data to the other teams.

Planning is no longer a repeatable process but a continual one, with feedback loops between data and creativity. Marketers, designers, and copywriters need to stay true to their creative vision, but be flexible enough to react to data and adapt at a moment's notice.

Gathering insights from all types of data sources and uniting agencies and partners throughout the campaign process may cause growing pains as you make changes to your process and organizational structure. But stay strong: The ultimate result is smarter, more effective campaigns.

"The beauty of programmatic is having one budget and goal instead of all these separate budgets and goals by channel," says Tim Waddell, director of product marketing for advertising solutions at Adobe. "Algorithms help you decide how to allocate the budget across all of those channels to drive the best possible result." 9

RBC Canada teams up for travel.

To drive acquisitions of a premium credit card, RBC Canada wanted to reach Canadians interested in travel.

To kick off the project, RBC's marketing team held a briefing session with a kaleidoscope of players: Fancy Pants Group, the creative agency handling the production; Initiative's media-buying team; and Accenture, the data analysts who defined the test and control specs and set up the performance reports.

Working in collaboration, they developed a matrix of various product benefit messages that were tested against an awareness control message.

The result: One message—no seat restrictions—led to a vigorous performance uptick of 28 percent in conversion.¹⁰

Make useful look **COOL**.

"As someone who's been working with fractals for 20 years, I'm not going to tell you fractals are cool, I'm going to tell you fractals are useful." 11

—Nathan Cohen, CEO, Fractal Antenna Systems

Cohen can teach a lesson on going from cool to useful—and you and your mobile phone can thank him. In the 1990s, Cohen's hobby was ham radio, but he faced a hitch. His landlord ruled against antennas rigged on the building. Cohen became intrigued with the Koch snowflake, a well-known fractal with a finite area but infinite perimeter. Using wire and a pair of pliers, he created a compact radio antenna based on the design.¹²

Cohen discovered he could make the antenna much smaller while receiving a much wider range of frequencies. That solved cell phone companies' problem of how to offer features like Bluetooth and Wi-Fi when each run on a separate frequency.¹³

If you're selling programmatic, take your cue from Cohen: Focus on how it can help you get more out of your creative efforts. In the beginning, programmatic was known mainly as an easier, cheaper way to buy advertising. But now you need to support programmatic creative as well. Emphasize how programmatic and its associated technology not only save money and time, but improve engagement and conversion performance.

For example, a retargeting campaign by Magoosh Online Test Prep that used display ads generated US\$58,608 in attributable revenue. At a total cost of US\$11,000, the campaign ROI was 486 percent. In general, users who are retargeted are 70 percent more likely to convert. Julian Bakery, a baker of specialty breads, increased conversions by 35 percent and impressions by 330 percent using the Google Display Network.

With numbers like these, it's easy to make the case for an evolution in the creative departments that makes these campaigns work.

Lower cost still ranks as a key advantage to programmatic, but marketers are more interested in a tool that empowers them to match ad execution to the needs of the modern media environment.¹⁷ In fact, 90 percent of marketers in a Forrester survey cite targeting as one of the two top benefits of programmatic.¹⁸

90% of marketers cite targeting as one of the top two benefits of programmatic.

Following targeting, other key benefits of programmatic include its capabilities to optimize in real time, to manage multichannel campaigns, and to reach consumers across their purchase journeys.

"High-quality content and context matter greatly," says Michael Turcotte, executive director of addressable media at JPMorgan Chase. "It's more about ROI and value—the effective CPM against my desired audience, not the lowest CPM against a broad audience." 19

To sell programmatic in general and the need for an investment in the creative assets that will drive it, it's critical to be able to identify key short-term wins. But remember that what qualifies as a win depends on whether your stakeholder is an analyst, media buyer, marketer, e-commerce leader, or brand team.

For example, if you're selling programmatic and a stronger investment in creative to your email team, tell them that with first-party data about a website visitor, they can send relevant, real-time emails based on what he has been browsing. Or the team might use customer interest data collected by third-party aggregators to tailor content for subscribers to the email newsletter.

Talk through the MILLIONS.

"An observer trying to estimate the length of England's coastline...from trying to walk its coves and beaches...will make a smaller guess than a snail negotiating every pebble."20

—James Gleick, science writer

As a marketer, you face a quandary—increasing reach and relevance simultaneously. Turns out that's a problem similar to one nature has solved.

For years, biologists struggled to measure the surface area of the lungs. With fractals, biologists had a better answer: The lungs take up about the same area as a tennis court. Nature packed millions of branches upon branches into a compact space to reach every red blood cell in the body as it flows by.

Patterns repeated with variation also let programmatic expand your reach to millions while exchanging relevant information with each one. And for any given consumer, you could potentially need hundreds of pieces of creative to serve up relevant ads. For example, a hotel group might vary ads for its properties based on the reason for travel and the location, with corresponding headlines, copy, images, and offers in formats that fit the customer's different devices. According to Kofoid, "We're currently operating within a fraction of that level of scale in terms of the messaging and the creative. We're far from being all the way there." ²¹

To get closer, you need to match every possible scenario and deliver relevant ads to consumers based on cookies that track behaviors and store login information. Solve this challenge by first putting together the left and right sides of your brain. Then start thinking about the variables and permutations you need to ensure that one-to-one conversations hit the mark.

Use the left side of your brain to create pictures.

In the age of smart data, with predictive analytics and real-time personalization, marketing has moved from a right-brain profession to one that encompasses both sides. The key is to take the immense amounts of data now available and find meaning that enables you to build a complete picture of each customer.

"You have this ability to enhance your creative through greater personalization than we've ever been able to do before," says Pete Kluge, group product marketing manager for advertising solutions at Adobe.²² "An advertiser has access to all of this data—first-site visitor data, where users have gone on a website, what products they've looked at, and if they've entered a shopping cart. We can use offline CRM data for online targeting, like what products a customer has purchased, their engagement with the call center, and third-party demographic data such as marital status, number of children, job function, and income range."

Creatives have always wanted to know as much as possible about their customers, their desires, their motivations, and their secrets. But without data, creative insights often come only from intuition.

Today great campaigns are fueled by ideas and data, by emotion and information. Like fractals, whose beauty and power are defined by simple yet powerful mathematics, programmatic creative is fueled by data.



"For us, data is the information behind the action," says Ethan Kanat, Zendesk creative brand manager. "It helps us unearth the stories themselves." ²³

Use the right side of your brain to transform data.

The big idea is no longer the only foundation for exceptional creative. Big data can also be the inspiration for stories that connect you with the right prospects. The trick remains to find the message or the hundred permutations of it that resonate with your target audience and express your brand even when you swap out elements.

"We tend to think of the concept as 'the idea' and the data as the 'reason for the idea," Kanat says. "The best creative in the world doesn't really mean anything if it doesn't serve a purpose."²⁴

In other words, creative that triggers emotion—but doesn't increase engagement or convergence—doesn't achieve the marketing goal.

"The best creative in the world doesn't really mean anything if it doesn't serve a purpose."

ETHAN KANAT

creative brand manager, Zendesk

Many argue that programmatic advertising leaves little room for creativity. But the human element remains essential. The best advertising, especially for branding, has always been simple: great imagery, a few pointed words or a tagline to tell the story, a strong call to action. The need for powerful elements for programmatic ads hasn't changed. In fact, the designer's job may be tougher than ever: to determine the ad look and feel and ensure it remains compelling even when the head, copy, and images may all change.

Identify the variables that impact results.

No matter how rigid your creative team is, you know (and they do, too) that every element of design and copy doesn't matter to your conversion rate or success. But if you're going to send a personalized ad, you need to know which variables have the greatest impact. And yet you don't want to change everything at once. With programmatic advertising, you can send ads that are self-similar—the same but with options for variables including the product, description, price, image, offer, location, dates, headline, weather, and whatever else you can invent.

Kofoid says marketers need to start putting together more robust, deep decision trees.²⁵ They can segment consumers based on who and where they are and select variables that make a difference. "There may be 10 different variables with thousands of different permutations based on that," Kofoid says. "And that will be the foundation with which the creative will develop the individual messages for consumers."²⁶

L'Oreal puts skin in the game.

L'Oreal sought to build a campaign to showcase two Vichy sunscreen products in France over the summer. One sunscreen was for women, the other for children

To create relevant ads for each segment, the company used audience-targeting lists to reach women both with and without children. By swapping out the images and copy, L'Oreal targeted the right consumers with creative personalized to drive engagement and conversion.²⁷



Targeted to women



Targeted to women with children

EMBRACE the similar.

"From the time movies began, animators had to draw each frame by hand—thousands of them—to make even a short cartoon."28

—Loren Carpenter, co-founder of Pixar

When feeding the programmatic machine, marketers face a dilemma not unlike the one Loren Carpenter describes—the time and expense of creating thousands of pieces of creative.

In 1978, Carpenter encountered a mountainous problem, literally. As a computer scientist at Boeing Aircraft in Seattle, he wanted to show experimental planes flying through a landscape. Despite having data from photos, Carpenter struggled to draw even 100 of the millions of triangles that make up a typical mountain range.²⁹

But after reading Mandelbrot's book *Fractals: Form, Chance and Dimension*, Carpenter realized he needed to take a triangle and break it over and over again to produce millions. With that approach, Carpenter was able to draw mountain ranges so realistic that he moved from Boeing to the creative world of Lucasfilm. And with the same technique, he created a whole new planet for *Star Trek II: The Wrath of Khan*.

For most marketers, customizing multiple versions of one campaign, serving up ads with strong creative in real time, and making adjustments based on factors from consumer reaction to breaking news is a new challenge. But it's one you can solve by starting with a creative layout and producing ads that are variations on a theme.

Start with a template—preferably yours.

With programmatic, marketers and creatives need to create a simple, powerful piece of content, but with modular elements they can adapt to create the ad they want. That's where templates come in.

Templated creative saves money, over time. "If you think about having to produce four banner sizes for 17 different messages, then there's a level of cost in producing each one of those and providing those to your platform to run," says Tim Bagwell, vice president of Xaxis Ad Labs.³⁰ "If you have a single template that powers all seven sizes, or seven messages and all canvas sizes, then you've cut down the amount of development time. You only have to produce the key assets that power those creatives."

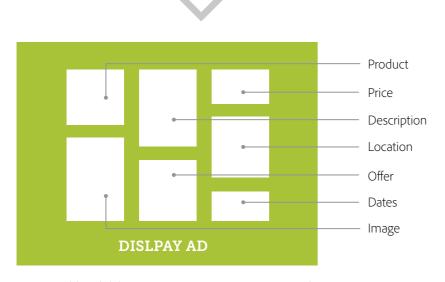
Nurullo Makhmudov, director of online user experience and strategic initiatives at Sears Canada, is also seeing the power of programmatic creative. "Once we have developed the templates that are part of dynamic automated creative... whether you do just 10 executions on that or whether you do 10 million, there is no additional cost."³¹

You have two main choices when it comes to templates: canned or customized. You can choose from a catalog of templates, although they may not truly reflect your brand. Better still, you can customize a template that does. For example, Hilton delivers relevant and personalized ads to website visitors by varying the information on a basic template.

Dynamic creative allows you to reach granular audiences with <u>flexible</u> ad creative that's personalized in <u>real time</u> to drive user engagement, conversions, and integrated experiences across devices.



Retarget users after they abandon the buying process. Layer third-party, CRM, and partner data to trigger ad layout.



Build and deliver a personalized experience in the creative.

Pre-author ads or create them on the fly.

The ability to quickly make changes can be a factor in deciding how you'll produce all the endless iterations of your ad that are needed. Again, you have two choices.

With pre-authoring, you generate every ad variation in advance of media buying. It's time-consuming and expensive, but it's one way to create the hundreds of ad element combinations you'll need. You must set up accurate creative assets and tracking mechanisms individually for each ad. But it isn't scalable if you need thousands or tens of thousands of ads.

When you want to change the content of a pre-authored ad, you need to re-create it. For companies whose compliance or approval process requires a review of every ad unit, this is the best option. However, it isn't dynamic creative.

With dynamic creative, the on-the-fly option, you have one ad layout with variable attributes, such as offer, background color, and calls to action that can be generated dynamically in real time. You can grab images from your data assets and update price and inventory information through a data feed. That makes it easy for marketers to change up ads without going through the creative process again. Millions of combinations are possible, every one of which is automated. And you need to set up creative assets and tracking mechanisms only once to produce all the ads.

When you want to make changes for an ad that's been dynamically created, you simply update the data feed for the option of interest. For example, if marketing wants to extend a promotion, you change the date in one place, and it instantly populates everywhere.

So, dynamic creative is not only speedier from the get-go, but it's quicker to make changes too. And it gives you another potent option: dynamic creative optimization to retarget customers or prospect for new ones.

Repeat what's RIGHT.

"[Our] computer-based optimizing tool...goes beyond the trial and error needed to explore the huge design space of fractal geometric shapes."32

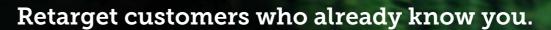
—Fractal Antenna Systems

Once you're able to mass-produce ads, you'll still need to quickly test and optimize the creative components to improve campaign performance.

Nathan Cohen's ingenuity ensures that multiple antennas don't make your phone look like a stick figure. But Cohen didn't stop there. He also invented a computer-based tool to explore all the possible fractal shapes for an antenna or electronics problem.³³ FRAGO can investigate close to two million antenna designs a month, making it invaluable for finding the best design in the least amount of time.

Marketers also need to quickly identify the best ads to serve customers and adjust those ads to improve performance. But that could mean figuring out which combination of three images, six border colors, four offers, and two call-to-action buttons works best. And that's just for one ad. You may need to optimize elements for hundreds.

Solve the challenge by using your data to create options and your technology to select the best.



Often a customer stops by your site and one of three things happens: They don't buy anything, they place something in a shopping cart but abandon it, or they buy only an entry-level product. So, you give them a friendly push—otherwise known as retargeting, which is a starting point for many using programmatic advertising.

Retargeting is highly effective and a no-brainer source of quick revenue. On other web and social sites, you serve ads with products customers viewed or even put in their carts on your site. Or sometimes you'll take a step up and show them premium products you think they'd like.

Let's say you're a hotel marketer. After customers stop by the site but fail to book, you can retarget them using first-party data for a second chance to drive conversion. Your first-party data may give you travel dates based on site search and behaviors. Then you can use CRM second- and third-party data for deeper personalization.

For example, with lifestyle information gathered from third-party data, you can determine if your visitor would be most interested in business travel, family vacations, wine tours, or weekend getaways. To reflect that, you can nab the appropriate image from your digital assets.

If third-party data confirms that your prospect is a family man, you can choose a just-right message for his situation. Cost for the room can be pulled automatically from a travel data feed of hotel room prices. And the offer text can be selected from a choice of four: Buy Now, Fare Sale, Summer Sale, or Great Value.

It's that simple. By using a dynamic creative template and options available in the content feed and digital assets, you've just created a relevant, personalized, timely ad to entice your family man to the hotel of choice.

Prospect for look-alike customers.

In addition to retargeting, you want to acquire customers who've never visited your site. But you may know little or nothing about them. You can use your audience or data management platform to find people who look like the customers you already have and create segments based on their attributes. For example, one segment could be high-income luxury vacationers or value-focused families with children.

Then you could launch campaigns with images, messages, and offers geared toward these segments and see which perform best. Once you know, you can find other segments that may perform like the high-value one you've already identified.

But there's a step beyond dynamic creative: dynamic creative optimization. With dynamic creative optimization, you can assemble a display ad based on the audience or analytics segment and ad buy, and see which combination of variables performs best by testing all of them. You can collect the learnings—which segment, which ad buy, which dynamic elements are customers' favorites—and feed these back into analytics. A typical scenario might give the winning ad 85 percent of the impressions, for example, and then continue testing the creative elements with the other 15 percent. Every time you run through the optimization process, the personalized customer experience gets better for each segment and for your brand.

Programmatic creative moves up the funnel.

In the beginning, programmatic advertising was oriented toward direct-response ads and associated with leftover inventory. But as programmatic moves up the purchase funnel, it appeals more to brand advertisers, who attach the most significance to creative.

Click-through rate lifts with dynamic creative optimization.34

71%	Individual property page
66%	Brand page
22%	Home page retargeting
10%	Product/creative optimization
0%	No dynamic creative optimization



You'd expect the click-through rate to increase as you display ads that are more and more targeted to your customers. But even knowing almost nothing about prospects, one advertiser achieved click-through gains of 10 percent simply by optimizing different ad elements—colors, headlines, images, offers, copy—to see which encouraged more prospects to click.35

Another retail advertiser who used dynamic creative optimization saw a 275 percent greater revenue per thousand impressions (RPM) than a standard banner ad, and 135 percent higher return on advertising spend (ROAS) than a standard banner ad.³⁶ As you learn more about the audience and your targeting becomes more specific, performance improves dramatically.

In this fictional hotel scenario, each audience segment—from luxury customers to loyalty vacationers to value-focused families triggers a different creative layout. Dynamic creative optimization renders content automatically, with different price, product, images, locations, and promotional copy.

Audience: Luxury Customers

- · Visited a luxury hotel page (site visit)
- · High household income (third-party data)

Creative: "Luxury offer"



Audience: Loyal Vacationers

- Points member (CRM)
- Interested in vacations (second- or third-party data)

Creative: "Relaxed fun"

Audience: Value focused families

- · Visited value brand hotel page (site visit)
- Families with children (third-party data)

Creative: "Simple value"





Bring the **BRILLIANCE**.

Mandelbrot explored an entirely new geometry to make sense of the beauty and complexity of nature. Likewise, the fractal nature of programmatic brings order to the chaos of holding relevant, one-to-one conversations with millions of customers and prospects. But for creatives, producing ads to feed the machine can feel like sticking a knife in the big idea and slicing and dicing.

"With programmatic, [you're] spending less time on one piece," Kofoid says. "Does that mean it becomes less brilliant? You'll have to define brilliance. I would argue that if it's more relevant to me as an individual, even if it doesn't have all the bells and whistles, I would consider that absolutely brilliant. So I think it's redefining what brilliant creative is."

Waddell says simply, "Data will help you become a better creative person."

Although some creatives see the modular, data-driven approach as an affront to their art, programmatic is just getting started. The goal should be to maintain a high level of creativity but to use technology to automate the execution. By merging insightful data with imaginative design and copy, you can pull new audiences into your brand story.

Designing an experience "that is warm, still human and at the same time is dynamically populated with content that is highly personalized isn't a diminishment of creative," Bagwell of Xaxis says.³⁷ "I think it's actually a new creative bar."



Adobe can HELP.

With the programmatic advertising capabilities in Adobe Marketing Cloud, you can manage technology, grow channels, analyze customer data, develop creative, and effectively reach audiences. Integrate the following Adobe solutions to support your programmatic creative:



Adobe Media Optimizer: Run accurate simulations and budget recommendations using search, display, and social campaign management and optimization.



Adobe Audience Manager: Combine all of your data sources in one place and create customer profiles.



Adobe Analytics: Use engagement or conversion metrics to create models and recommendations to drive campaign performance in Adobe Media Optimizer.



Adobe Target: Leverage Adobe Marketing Cloud audience profiles to create a consistent customer experience from the ad unit to the landing page.



Adobe Campaign: Use loyal customer lists to run social retargeting.

Learn more about Adobe's dynamic creative solutions for programmatic at http://www.adobe.com/marketing-cloud/programmatic-advertising/dynamic-creative.html.



- Benoit Mandelbrot, The Fractal Geometry of Nature, (New York: W. Freeman & Co., 1982).
- 2 Chris Breikss, president of 6S Marketing, email message, August 31, 2016
- 3 Jeff Fagel, "For marketers, it's no more either/or, think AND," LinkedIn Pulse, August 25, 2015.
- 4 "More than two-thirds of US digital display ad spending is programmatic," eMarketer, April 5, 2016.
- 5 Ibio
- 6 eMarketer, "Programmatic creative: Look to existing processes for guidance," May 5, 2015.
- 7 NOVA, "Hunting the Hidden Dimension," directed by Michael Schwarz and Bill Jersey, PBS, August 24, 2011.
- 8 Ibid
- 9 Interview with Tim Waddell, director of product marketing for advertising solutions at Adobe, personal interview, August 10, 2016.
- 10 "Three Ways to Make the Most of Programmatic and Data-Driven Creative, Think With Google March 2016
- 11 NOVA. "Hunting the Hidden Dimension."
- 12 Ibid
- 13 Ibid
- 14 Carly Stec, "20 display advertising stats that demonstrate digital advertising's evolution," HubSpot, September 25, 2015. Note that the ROI reported here wa calculated using Magoosh's internal method.

- 15 Irfan Ahmad, "17 incredible retargeting ad stats—infographic," Digital Information World September 24 2014
- 16 Google Display Network, "Julian Bakery used the Google Display Network to increase conversions by 35% and increase impressions by 330%," 2011.
- 17 James Nall, "Programmatic transforms digital media buying," Forreste Research, Inc., May 3, 2016.
- 18 Ibid
- 19 Ibic
- 20 James Gleick, Chaos: Making a New Science (New York: Penguin, 1987), 96.
- 21 Douglas Kofoid, VivaKi, personal interview, August 30, 2016.
- 22 Pete Kluge, "Programmatic display: Make the most of your data with today's technology," Adobe Marketing Blog, June 29, 2016.
- 23 Scott Raynor, "Q&A: How Zendesk's Ethan Kanat created a fake grunge band to charm prospects away from competitors," AdRoll blog, January 12, 2016.
- 24 Ibid
- 25 Interview with Kofoid
- 26 lb
- 27 "Three Ways to Make the Most of Programmatic and Data-Driven Creative, Think With Google, March 2016.
- 28 NOVA, "Hunting the hidden dimension."
- 29 Ibio

- 30 Debra Aho Williamson, "Creating Ads on the Fly: Fostering Creativity in the Programmatic Era," eMarketer, April 2015.
- 31 Ibio
- 32 Fractal Antenna Systems, "Fractal antenna FAQs."
- 3 Ibid.
- 34 Pete Kluge, group product marketing manager of advertising solutions and Adobe, personal interview, August 10, 2016.
- 35 Ibic
- 36 Ibid.
- 37 Williamson, "Creating Ads on the Fly."



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