



Fireflies: Nature's Brilliant Marketers

Attract. Engage. Connect. Drive Action.

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Across wide-open fields, humid stretches of forest and even in small urban backyards, a sparkling aerial dance begins in early June across the North American Midwest and announces the overall magic of summer for all ages. Whether children scurry around trying to catch and release or adults simply enjoy the lazy-evening light show, the brilliant courtship of fireflies is experienced annually.

Firefly Profile

With fossil records dating back 24 million years, there are an estimated 2,000 identified species of fireflies in all types of habitats and on all continents except Antarctica. Additionally, there may be 3,000 species remaining to be discovered or named (Spence, 2014). Although their name(s) in the American-English language suggest they are either flies or bugs, fireflies/lightning bugs are actually classified as beetles in the largest Order in the Animal Kingdom. With soft bodies, hard wing sheaths and an extraordinary ability to communicate through bioluminescence, fireflies belong to the Family of Lampyridae. Fittingly, the etymology of Lampyridae is a combination of two Ancient Greek words: lamypyris: λαμπειν (lampein) "to shine" and -idae: εἶδος (eidōs) "appearance". To shine in appearance, indeed.

From one species to the next, the purpose of the glowing, flashing and weaving in flight is to attract a mate. While each species has developed its own particular communication patterns between males and females, the biological production of light in "photic organs" is similar across genders and species in a fantastically complex and efficient manner.

The bioluminescent glow is created by a reaction between Luciferin, Luciferase, adenosine triphosphate (ATP) and oxygen in a specialized tail-section organ. The protein Luciferin is heat resistant and it glows under the right conditions. Luciferase is an enzyme that triggers light emission. Upon reacting with oxygen in the presence of the ATP chemical within the firefly's body, a pigment called D-luciferin gets oxidized to oxyluciferin; this reaction is catalyzed by the luciferase. Oxyluciferin, upon relaxing, emits a photon, with a light produced within the visible spectrum.

A reflector layer inside the photic organ further enhances the brightness and broadcast of the light. The efficiency of this creation of light is staggering with nearly 100% of the energy produced by the aforementioned reaction is emitted as light. By comparison, a standard incandescent bulb emits only 10% of its energy as light with the remaining 90% lost as heat and a fluorescent bulb only emits 90% of its energy as light (Spence, 201). Due to the lack of heat generated in this type of light emission, firefly light is referred to as "cold light." Ironically, this cold light has a very heated purpose: mating.

FIREFLIES: TAXONOMY

Kingdom: Animalia
Phylum: Arthropoda
Class: Insecta
Order: Coleoptera
Suborder: Polyphaga
Infraorder: Elateriformia
Superfamily: Elateroidea
Family: Lampyridae
Rafinesque, 1815
Subfamilies: Cyphonocerinae
Lampyrinae
Luciolinae
Photurinae
Ototetrinae
Amydetinae
Pterotinae

The complexity of bioluminescence is equaled by the complexity of the firefly's language of flash duration, frequency, shape, etc. Briefly, colors vary across a spectrum from yellow and orange to green and blue depending on species and time of night. Yet, it appears it is not the color of the light but the flash pattern which attracts males and females to each other. Typically, males flash in flight while females remain relatively stationary lower to the ground and flash responses back up to males. In some species, there is dynamic flashing, which can be called a conversation, with the flashes consisting of comments, questions and replies. These flashes truly are as sophisticated and as precisely controlled as a language.

To make this language even more complicated, certain species of fireflies have learned to mimic the flashing patterns of other species for females to attract and ultimately eat the males of the other species. As fireflies are constrained by length of life (typically a few months of non-larval adult life) and by the amount of daily activity (in Florida, some species are only active for 23 minutes every night (Spence, 2014)), their language of bioluminescent communication must attract, engage, connect and drive action. First, the patterns of light attract intended targets; second, engagement between initiator and target begins; third, a connection of rapport, interest and commitment is made; and finally, the initiator and responding target act for mutual benefit. In the case of fireflies, the result is propagating the species. It is simple yet complex communication and a magical process which continuously evolves based on internal and external conditions to turn attraction into action.

Firefly Metaphor for Marketing

Upon reflection, the firefly is a brilliant visual metaphor for the goals of marketing - attract, engage, connect and drive action - and the desire for magical relationships between brands and targets. As marketing is both a science and an art, this firefly metaphor becomes even more appropriate. Firefly bioluminescence and marketing are both intricate combinations of elements. Completing the metaphor, the generation of cold light is the science (strategy), and attraction, engagement and connection are the art (tactics) with action as the desired result.

Cold Light = Strategy

Strategy is the true source of business success. Strategy is grounded by the clear articulation of purpose (a mission or values statement) and goals. It is a deep understanding of the internal and external issues facing a company or brand and how to confront or navigate those issues. It is the high-level discussion and agreement on how goals will be achieved and a well-defined positioning and targeting. In too many instances, jumping into tactical development is the initial default action. Of course, that is the "fun" part of marketing; the brainstorming; deciding what the in-store or online promotion will look like; what will the ad say? Indeed, tactics are exciting to develop and execute. Yet, unless tactics are borne from strategy, they have a tendency to fail.

Consider these questions before tactical brainstorming:

- What grows a brand?
- What do we know about the company and the brand?
- Which market does the brand have the best competitive chance of success?
- What do we know about the target market?
- What do we know about the competition?
- What additional information is needed to fully assess the market and opportunity?
- What does the brand stand for?
- Which is the most motivating way to present the brand to the target?

Only after these types of crucial strategic questions are asked and answered should there be movement into the tactical question of "what, specifically, will be the most effective manner(s) to speak to the target audience to attract, engage, connect and drive action?" Similarly, without the science integrally involved with bioluminescence, the firefly's artistic lightshow to attract a mate would never happen.

Finally, within the overall topic of strategy is the financial discussion. Will the strategic options under consideration truly deliver on the goals? What are the intended results on EBITDA, revenue or departmental P&Ls? How realistic are these strategies based on the people, culture, work load and organizational structure available at the company? As outlined earlier, the firefly's cold light is nearly 100% efficient. A business should endeavor to attain such operational efficiency. Yet, without keen and thorough attention to strategy, a business can waste significant resources executing tactics which are not properly developed and aligned with the business itself.

COMMUNICATION RESULTS – VERB DEFINITIONS

Verb	Dictionary* Definition	Firefly & Marketing Definition
Attract	to pull toward without touching	to generate awareness
Engage	to interact socially	to start dialogue/nurture consideration
Connect	to establish a rapport	to transform interest into commitment
Drive Action	to take action; to act	to act for future & mutual benefit

With the business strategy fully understood and agreed upon, it is time to create the optimal tactics to attract, engage and connect. First, to attract is to pull toward without touching or, in marketing terms, to generate awareness. Generating awareness is driven via the presentation of a message to a target, just like the flashing light of the firefly. A crucial element is to know how the target consumes media and where and when is it receptive to messaging? For fireflies, the “advertisement” is consumed within certain geographic areas, during an exact time of night. Within marketing, the message can be relayed via a myriad of options. Based on the strategic understanding of positioning and targeting, the marketer selects the most meaningful, impactful and efficient times and ways to speak to the target.

Secondly, to engage is to interact socially or to start a dialogue and nurture consideration between a brand and a potential consumer. To human eyes, the firefly’s message is the bright light, the spectacular yellow lights swirling in the distance or the living, light-green light in one’s palm. Yet, the female firefly sees through the clutter of all the colored lights and is engaged by the true message - the flash pattern. The specific flash pattern of each species is the motivating element of the communication. Similarly, each brand has an ideal “pattern” of communication to reach an intended target. This messaging pattern is best created through a profound understanding of the demographic and psychographic makeup of the target and how the message needs to be unique, ownable and is tied back to brand values. Precisely achieving this is even more important as one imagines the variety, quantity and media options for marketing efforts currently cluttering consumers’ minds: social media ads, digital retargeting, text messages, grassroots programming in addition to the old standards of events, partnerships, in-store promotions, radio, TV and outdoor. Therefore, a key element for marketers is to create messaging which engages much beyond reach and frequency and the simple attention-getting bright lights but with a unique pattern of content and timing for the brand to start direct one-on-one dialogues.

Once the dialogue begins in earnest, the marketer’s work is not done. The third step is solidifying the connection. To connect is to establish a rapport or to transform interest into commitment. Remember the firefly in Florida which only communicates for 23 minutes per night? Within the metaphor of firefly marketing, a brand may only have the equivalent of 23 minutes per day to state its case to be interesting; to be motivating; to be useful or needed. Rare is the company or brand with unlimited promotional funding for wide reach, frequency and the personalized digital targeting used today. So, how can the time available to brands best be spent to maximize the messaging to connect? If answering that question weren’t difficult enough, consider another layer of complexity for firefly communication: the numbers. The sheer numbers involved in the conversations amongst fireflies is astonishing: 2,000 known species, thousands more to be discovered and countless males and females of each species. In nature, the female firefly typically is attracted to the male with the strongest flash pattern amongst all suitors in the area. Amid the clutter, it comes down to the timing of communication, the strength of the message and consistency of outreach. In the marketing world, the same is true. There are numerous eyes and ears to engage and hearts to connect. Therefore, the timing, strength and consistency of messaging are critical to driving forward the relationship between brand and target. Given the technology now available, this is where measurement and automation become indispensable tools in the understanding of consumer cues and purchase intent to further compel connections and lead to the result of action.

Drive Action = Result

Finally, it is time for action between male and female, brand and target: to act. In the case of both fireflies and brands/targets, this is not simply the transaction of mating or purchasing. In nature, the purpose of mating is the growth and continued success of the species. Through the extraordinary biological creation of cold light to attract, engage and connect, fireflies mate season after season. This is success and ensures life. Similarly, the science of business strategy allows for the art of attraction, engagement and connection between brands and consumers. When all the steps are executed correctly, this relationship lives beyond the sale. It creates the opportunity for continued conversations and leads to future sales, innovation and brand equity growth. In short, this is the business equivalent of the propagation of the species - future life.



References

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