Redefining Marketing Attribution: Incendium AI's Effectiveness-Based Approach

Abstract

Traditional attribution models fail to capture the true contribution of user sessions to conversions. Models such as last-click, first-click, and position-based attribution rely on overly simplistic rules that fail to properly apportion the real value of marketing touchpoints. Effectiveness-Based Attribution (EBA) is a novel framework that measures how effectively each session moves a user closer to conversion. Central to this framework is the concept of Effective Pageviews (EPVs) - weighted signals of engagement derived from user behavior. By evaluating sessions through EPVs, EBA assigns proportional credit to the sessions that mattered most, rather than those highlighted for their placement, not their impact, within the customer journey. This paper outlines the methodology, mathematical framework, and practical applications of EBA for advertisers, agencies, and ecommerce brands.

---

1. Introduction

Digital attribution remains one of the most persistent challenges in modern marketing. Organizations are left having to choose from competing publisher models, each claiming to allocate credit more accurately across touchpoints. However, prevailing models - whether heuristic (e.g., last-click) or algorithmic (e.g., data-driven attribution) - struggle to balance simplicity with truth. The result is flawed insights that lead to wasted ad spend, misaligned budgets, and poor optimization decisions. This uncertainty forces marketers to make decisions with incomplete visibility, undermining both budget allocation and long-term strategy.

Effectiveness-Based Attribution (EBA) reframes attribution not as a question of *position* but of *impact*. By measuring whether a session genuinely progressed the user toward a purchase, EBA creates a truer picture of influence and ROI.

---

2. Limitations of Existing Attribution Models

- **Last-click attribution**: Overweights the final interaction, ignoring prior influence.
- **First-click attribution**: Credits initial discovery but disregards nurturing activity.
- **Linear attribution**: Spreads credit evenly, masking differences in impact.
- **Position-based attribution**: Arbitrarily favors first and last interactions.
- **Data-driven attribution (DDA)**: Useful but opaque - often a "black box" controlled by ad platforms, with inherent bias toward their own channels.

These models fail to answer the central question: *Did this session meaningfully contribute to conversion?*

---

3. The EBA Framework

3.1 Effective Pageviews (EPVs)

At the core of EBA is the Effective Pageview - a unit of engagement that weights touchpoints based on user actions and their indicative values. A pageview is considered *effective* if it meets criteria that suggest intent, such as:

- Time on page exceeding a defined threshold
- Scroll depth reaching meaningful content
- Interaction with conversion-related elements (e.g., adding to cart, viewing reviews)
- Click-throughs to deeper funnel pages
- Page-specific rules (e.g., PDP > Reviews tab, Category > Product)

EPVs are aligned with the intended role of each page type in the journey. A category page is effective if it drives a click-through to a product detail page. A blog article is effective if it generates sustained engagement (time on page, scroll depth) or generates a social share, for example. Effectiveness rules allow nuanced analysis at scale.

3.2 Attribution Assignment

The weight of a given session (W_i) is the session's total effective page views (E_i) divided by the conversion journey's total effective page views (E_j):

$$W_i = \frac{E_i}{E_j}$$

The credit for each session is then the weight multiplied by the conversion value (V):

$$Credit_i = W_i \cdot V$$

This ensures that only sessions demonstrating meaningful engagement are credited, not incidental visits.

---

4. User Journey Example

Consider a customer who makes a $300 purchase after three sessions:

- **Session 1:** The user lands on the homepage, clicks through to a category page, and then to the company About page. They scroll and spend meaningful time on the About page before exiting. (EPVs = 3)
- **Session 2:** The user lands on the homepage, navigates through to four product detail pages, spending a significant amount of time on each, scrolling to reviews, and adding one product to their wishlist (EPVs = 5)
- **Session 3:** The user returns directly to the site, views the chosen product detail page, zooms in on product images, reads reviews, and adds the product to cart. (EPVs = 2)

Traditional models:

- Last-click: 100% to Session 3
- First-click: 100% to Session 1
- Linear: 33% each

EBA distribution:

- Session 1: 30% ($90)
- Session 2: 50% ($150)
- Session 3: 20% ($60)

4.1 EBA vs. Traditional Models

Session	Source	Effective PVs	EBA Credit	First-click	Last-click	Linear
1	Google Ads	3	30% ($90)	100% ($300)	0% ($0)	33% ($100)
2	Organic Search	5	50% ($150)	0% ($0)	0% ($0)	33% ($100)
3	Direct	2	20% ($60)	0% ($0)	100% ($300)	33% ($100)

This comparison highlights how EBA distributes credit based on the effectiveness of engagement, while first-click and last-click models concentrate credit entirely at one point in the journey. Linear attribution spreads credit evenly, masking the true differences in contribution. In contrast, EBA shows that Session 1 played a role in building interest, Session 2 was the most influential in driving intent, with Session 3 finalizing the conversion.

4.2 EBA's Custom Configuration

EBA also supports an overlay of custom weighting based on touchpoint positioning. This provides advertisers with additional flexibility to align attribution with business-specific nuances. For example, if early sessions often show low Effective Pageviews because they reflect first impressions of a brand, but the advertiser still wants to credit upper-funnel campaigns, Incendium’s analytics platform allows custom configurations in the EBA equation.

---

5. Advantages of EBA

- **Accuracy**: Assigns credit based on *effectiveness*, not overly simplistic rules.
- **Transparency**: Rules and weights are fully configurable by the marketer.
- **Cross-channel fairness**: Rewards upper- and mid-funnel contributions.
- **Optimization-ready**: Surfaces true ROI signals for bidding, budgeting, and creative testing.
- **Platform-agnostic**: Unlike Google’s DDA, EBA runs independently of ad networks.

---

6. Implementation

EBA is integrated into Incendium AI's analytics platform, offering:

- Configurable weighting models
- Session-level and campaign-level reporting
- API integrations with major ad platforms (Google Ads, Meta Ads, LinkedIn)
- Real-time dashboards for optimization

---

7. Applications

- **E-commerce**: Identifying content, and parts of the user journey that drive purchase intent.
- **Agencies**: Demonstrating channel value to clients beyond last-click.
- **B2B**: Capturing the impact of content downloads, webinars, and nurture campaigns.
- **CRO**: Prioritizing high-value interactions in testing and personalization.

---

8. Future Directions

EBA can be extended with machine learning models to dynamically adjust weights, predict effective sessions in real-time, and integrate offline sales events. The long-term vision is a unified attribution framework that evolves with user behavior and business objectives.

---

9. Conclusion

Effectiveness-Based Attribution (EBA) represents a paradigm shift in marketing measurement. By redefining attribution around *impact* rather than *position*, Incendium AI empowers businesses to understand the real levers of growth, optimize budget allocation, and achieve superior ROI.
