Bulletin Whitepaper

bulletin

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Bulletin

"Redefining User Engagement in News through AI in the Web3 Era"

I. Abstract

In today's rapidly evolving digital landscape, the traditional news industry faces significant challenges, including information overload, misinformation, and audience disengagement. Conventional content creation processes are often time-consuming, lack real-time updates, and fail to deliver immersive and personalized experiences, leading to declining trust and limited global reach.

Bulletin leverages AI-powered automation to bring order to/ navigate content fragmentation and delivers captivating, multi-modal storytelling experiences like text, images, diagrams, video, audio and interactive narratives that resonate with modern audiences.

Bulletin is a blockchain network of AI-powered news models using Proof of News (PoN) to automate and optimize news feeds. It brings order to news fragmentation, rewards user contribution and delivers captivating, multi-modal storytelling experiences (like text, images, diagrams, video, audio and interactive narratives) that resonate with news audiences.

II. Introduction

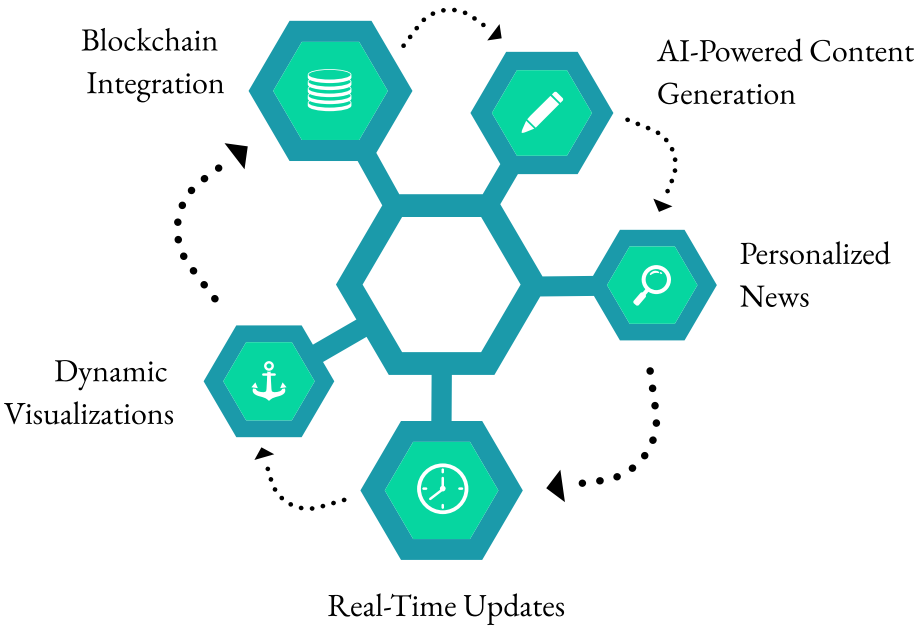

Figure 1.1: Introduction to Bulletin

Bulletin is a state-of-the-art AI platform designed to revolutionize news and media engagement. With a strong focus on transforming content creation through impactful visualizations like graphs and graphics, Bulletin aims to redefine user experiences. This document provides an overview of Bulletin's features, benefits, and its potential impact on the Web3 ecosystem.

Unlike traditional content creation methods, which often struggle to meet the demands of today's dynamic digital landscape, Bulletin offers a comprehensive solution. It seamlessly integrates AI capabilities with user-friendly tools, reshaping how users interact with news and media. Bulletin prioritizes accessibility, efficiency, and impact in content creation, setting a new standard for engaging with information.

III. Overview

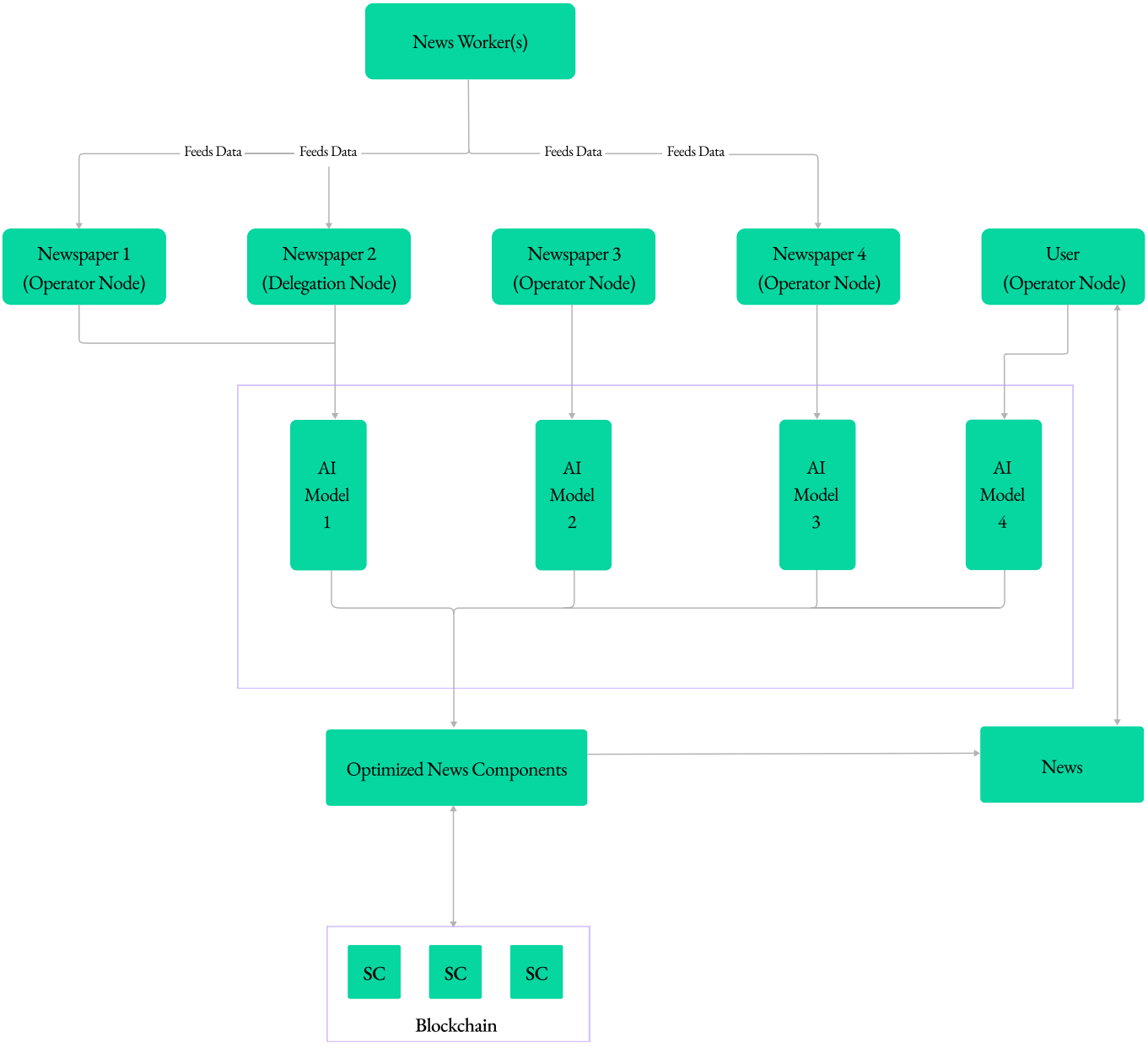

Figure 2.1: Conceptual Diagram of DApps

Bulletin tackles issues related to news creation and fosters a thriving ecosystem with distinct roles and interactions:

1. **Content Producers/Newspapers:** Media houses and newspapers leverage AI tools to enhance content, reaching wider audiences and earning rewards based on engagement and quality.
2. **Content Consumers:** Experience personalized, interactive news and contribute feedback, enriching the ecosystem's growth. Engage with dynamic data stories and immersive visualizations.
3. **AI Models:** Empower the platform's core functions, continuously learning and evolving to deliver superior experiences over time.
4. **Operator Nodes:** Manage data, train AI models, and oversee news creation, ensuring seamless operations and workflow coordination.
5. **Delegation Nodes:** Contribute tokens to operator nodes, earning rewards based on contributions and adherence to network rules.
6. **Source Stream:** Derive news content from diverse sources like news wires, social media feeds, and press releases.
7. **Optimization:** Refine the news creation process using AI models and techniques, enhancing relevance, sentiment analysis, and readability.
8. **Output:** Deliver final news content, ranging from graphs and summaries to multimedia, ready for consumption by users.

Through incentive mechanisms, content consumers earn rewards for engagement, content producers monetize their work, and server node providers offer storage services. Lastly, the Bulletin protocol governs the ecosystem, adjusting reward distribution and upgrading systems through token holding and voting.

IV. AI Model

By combining AI, blockchain, and a well-designed reward system, Bulletin can address issues of information overload, bias, and lack of user agency in the digital news space. It seamlessly integrates AI capabilities with user-friendly tools, reshaping how users interact with news and media. Bulletin prioritizes accessibility, efficiency, and impact in content creation, setting a new standard for engaging with information.

Furthermore, Bulletin can leverage the power of blockchain technology to create a secure and transparent reward system. This system could incentivize users to contribute high-quality information, flag misinformation, or curate content for specific communities.

Bulletin's AI model drives the platform's cutting-edge features, transforming raw data into captivating news experiences. Here's a glimpse into its key functionalities:

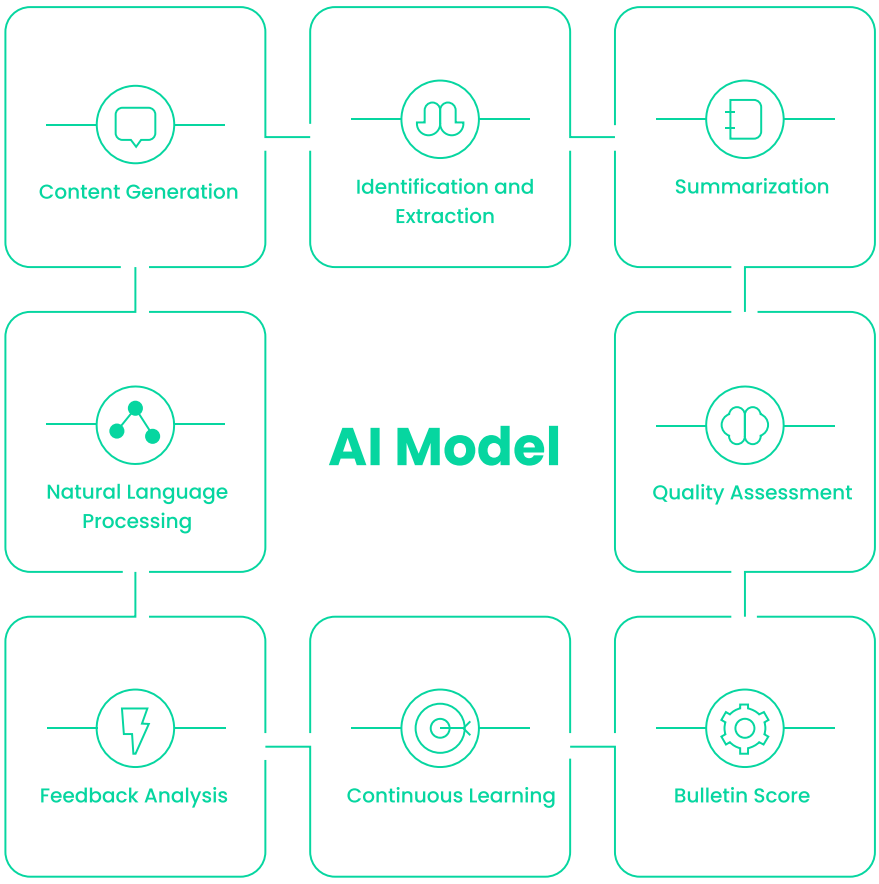

Figure 3.1: AI Model

1. Content Generation: Creates insightful narratives through graphs and charts, making complex data accessible and impactful.

It utilizes advanced deep learning algorithms such as Recurrent Neural Networks (RNNs) and Generative Adversarial Networks (GANs) to generate narratives from input data.

Attributes related to news articles, such as word frequency, sentiment scores, and topic categories. For simplicity, let's denote this input data vector as $X = [x1,x2,...,xn]$, where xn is the number of features.

Now, let's assume we have a deep learning model G trained to generate content based on this input data. This model could be a Recurrent Neural Network (RNN), a Convolution Neural Network (CNN), or any other suitable architecture for text generation.

The process of generating content involves transforming this input data vector X into a

sequence of words or tokens representing the generated narrative. We can represent this sequence as Y = [y1,y2,...,ym], where ym is the length of the generated content.

The function G encapsulates the complex mappings and transformations learned by the neural network during training. It takes the input data vector X as input and produces the output sequence Y as output.

Mathematically, the function G can be represented as: Y = G(X).

Where:
- X represents the input data vector.
- Y represents the output sequence of generated content.

During the training process, the parameters of the model G are adjusted in an iterative manner to minimize the difference between the generated content Y and the ground truth data.

2. Topic Identification and Extraction: Identifies main themes and subjects in news articles and social media posts, enhancing content relevance.

It implements Natural Language Processing (NLP) techniques such as word embedding and topic modeling algorithms like Latent Dirichlet Allocation (LDA) to extract topics from text data.

For simplicity, let's denote this collection as D = [doc1,doc2,...,doc$n$], where each doc$i$ is a bag-of-words vector representing a document and the topic distribution for document doc$i$ as θi, where θi = [θi1,θi2,...,$\theta i K$] and K is the number of topics. Similarly, let's denote the word distribution for topic k as ϕk, where ϕk = [ϕk1,ϕk2,...,ϕkV] and V is the size of the vocabulary.

Mathematically, the extracted topics can be represented as:

ExtractedTopics = LDA(TextData)

Where:
- TextData represents the collection of documents.
- ExtractedTopics represents the inferred topic distributions for the documents.

3. Summarization: Condenses lengthy content into concise summaries, capturing essential information effectively.

Utilizes extractive or abstractive summarization algorithms, such as TextRank or Transformer-based models like BERT, to generate summaries from input text.

Let's say we have an input text document represented as a sequence of sentences. For simplicity, let's denote this input text as Input = [s1,s2,...,sn], where each si represents a sentence in the document.

In extractive summarization, we aim to select a subset of sentences from the input text that best represent its main ideas. Let's denote the summary as Summary, which is a subset of sentences selected from the input text.

Mathematically, the summary can be represented as:

Summary = Top$k$(Input)

Where:

- Top$k$(Input) represents the top k sentences selected from the input text based on their importance scores.

This mathematical model captures the essence of extractive summarization, where the summary consists of the most relevant sentences from the input text.

4. Natural Language Processing (NLP): Analyzes textual data for language, entities, and sentiment, ensuring thorough understanding.

It applies various NLP techniques like tokenization, part-of-speech tagging, and named entity recognition using models like spaCy or NLTK.

Let's denote this text as Text=[w1,w2,...,wn], where each wi represents a word in the text.

spaCy and NLTK utilize various algorithms and models to perform NLP tasks such as tokenization, part-of-speech tagging, and named entity recognition. For example, let's consider tokenization, which is the process of splitting the text into individual words or tokens. We can represent tokenization using a simple mathematical function Tokenize(), which takes the input textText and produces a list of tokens:

Tokens = Tokenize(Text)

Where:

- Tokens represents the list of tokens obtained after tokenizing the input text.

Similarly, other NLP techniques such as part-of-speech tagging and named entity recognition can be represented using mathematical functions or models specific to each task.

5. Quality Assessment: Evaluates news source credibility and content quality based on accuracy, objectivity, and trustworthiness.

Utilizes machine learning classifiers trained on labeled datasets to assess the quality of news sources and articles based on features such as accuracy, objectivity, and trustworthiness.

Let's assume we have a dataset of news articles where each article is labeled with a quality score based on features. For simplicity, let's denote the features of an article as Features = [f1,f2,...,f*n*], where each f*i* represents a feature.

QA utilizes machine learning classifiers trained on this labeled dataset to predict the quality score of news articles based on their features. Let's denote the classifier function as Classifier(), which takes the features of an article as input and predicts its quality score:

Quality Score = Classifier(Features)

Where:

- Quality Score, represents the predicted quality score of the news article.
- Features, represents the features extracted from the news article.

The classifier function Classifier() is trained using machine learning techniques such as logistic regression, support vector machines, or neural networks on the labeled dataset. It learns to map the input features to the corresponding quality scores based on the training data.

6. **Feedback Analysis:** Monitors user engagement to enhance content relevance and identify improvement areas.

Applies sentiment analysis algorithms such as *Vader* or *TextBlob* to analyze user feedback and engagement metrics.

Feedback Analysis applies sentiment analysis algorithms to analyze the sentiment of user feedback and assigns a sentiment score to each feedback. Let's denote the sentiment analysis

function as Sentiment Analysis(), which takes the user feedback as input and predicts its sentiment score:

Sentiment Score = Sentiment Analysis(User Feedback)

Where:
- Sentiment Score represents the predicted sentiment score of the user feedback.
- User Feedback represents the feedback provided by users.

The sentiment analysis function Sentiment Analysis() is trained using machine learning techniques on labeled datasets where each feedback is associated with a sentiment score (e.g., positive, negative, neutral). It learns to predict the sentiment of user feedback based on various linguistic features and context.

7. Continuous Learning: Adapts to evolving trends and user preferences through continuous training on diverse datasets.

It implements online learning algorithms like incremental gradient descent or stochastic gradient descent to update model parameters based on new data.

Let's assume we have a machine learning model with parameters denoted by θ. During continuous learning, the model updates its parameters based on new data using online learning algorithms like incremental gradient descent or stochastic gradient descent.

The mathematical formula for updating the model parameters ($\theta t+1$) at time t+1 based on the current parameters (θt) and new data (Data $t+1$) can be expressed as:

$$\theta t+1 = \theta t - \eta \nabla L(\theta t, \text{Data } t+1)$$

Where:
- $\theta t+1$ represents the updated model parameters at time $t+1$.
- θt represents the current model parameters at time t.
- η is the learning rate, which controls the step size of the parameter updates.
- $L(\theta t, \text{Data } t+1)$ is the gradient of the loss function L with respect to the model parameters θt computed using the new data Data $t+1$.

In this formula, the gradient descent algorithm computes the direction and magnitude of the steepest descent in the loss function's parameter space. The learning rate η determines how large

of a step the algorithm takes in the parameter space during each iteration.

8. Bulletin Score: Optimizes news discovery based on content relevance, user engagement, and AI analysis, delivering personalized news experiences.

It combines various factors such as content relevance, user engagement, and AI analysis into a scoring function to optimize news discovery.

Let's assume we have three factors contributing to the Bulletin Score: content relevance, user engagement, and AI analysis. Each factor is assigned a weight indicating its importance in the scoring function.

The mathematical formula for calculating the Bulletin Score (*BulletinScore*) can be expressed as:

$$BulletinScore = w1 \times ContentRelevance + w2 \times UserEngagement + w3 \times AIAnalysis$$

Where:

- w1, w2, and w3 are the weights assigned to Content relevance, User engagement, and AI analysis respectively.
- *ContentRelevance, UserEngagement*, and *AI Analysis* are the respective scores or values associated with each factor.

In this formula, each factor is multiplied by its corresponding weight and then summed together to obtain the overall Bulletin Score. The weights w1, w2, and w3 determine the relative importance of each factor in the final score calculation.

V. Blockchain

Bulletin doesn't just only rely on AI, it also harnesses the power of blockchain, revolutionizing the news landscape. Unlike traditional centralized systems, blockchain decentralizes data, ensuring transparency and trust among all participants. Here's how blockchain benefits Bulletin:

- **Unwavering Accuracy:** Once data is recorded on the blockchain, it's immutable, guaranteeing the authenticity and traceability of every story.
- **Transparency for All:** All participants have transparent access to data, fostering trust and accountability.

- **Smart Rewards:** Bulletin uses smart contracts to automate transactions, enabling a token economy where creators are fairly rewarded, and users can tip their favorite content producers.

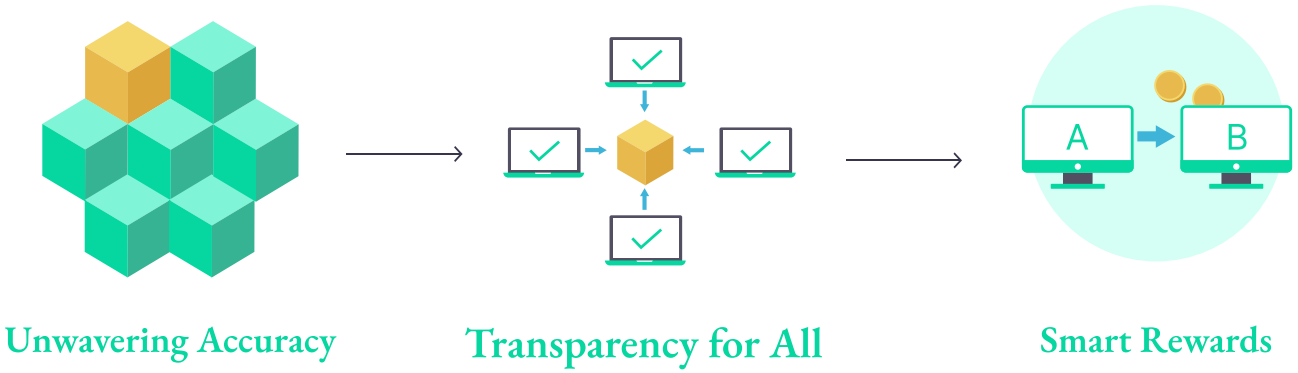

Figure 4.1: How Blockchain benefits Bulletin

These features empower both creators and consumers:

- **Creators:** Earn recognition and fair compensation through the token economy.
- **Consumers:** Access verified content and feel confident in its accuracy, while also participating in the token economy.

Blockchain in Bulletin:

1. **Securing News Content:** Bulletin ensures the authenticity of every news story by storing it or a unique identifier on the blockchain.
2. **Rewarding Creators:** A token-based system incentivizes content creation and allows users to directly reward valued creators.
3. **Enabling Micro-payments:** Users can support creators through micro-payments for premium content or to show appreciation.

Blockchain is integral to Bulletin's commitment to transparency, data integrity, and empowering both creators and consumers in the new era of news.
Bulletin is multi-chain and EVM compatible.

VI. Reward System

At Bulletin, our robust token-based reward system is the heartbeat of our community, driving content creation, engagement, and valuable contributions. With a focus on inclusivity and

fairness, everyone stands to benefit.

Here's how it works:

1. **Tokenomics:** Our token economy ensures a balanced supply, equitable distribution, and various utility functions within the platform. This creates a thriving ecosystem where every contribution counts.
2. **Token Staking:** Participants can stake tokens as collateral to unlock exclusive features or privileges within the platform. This incentivizes active involvement and ensures a secure, stable network.
3. **Token Distribution:** Rewards are distributed based on predefined criteria, such as content quality, engagement metrics, or contributions to the ecosystem. This encourages high-quality content creation and fosters a sense of community ownership.
4. **Proof-of-News (PoN)**: PoN is a novel consensus mechanism within the Bulletin ecosystem, optimizes the verification process for news articles, ensuring their quality. PoN plays a pivotal role in optimizing content recognition and rewards based on the bulletin score, fostering an environment where only high-quality news content is acknowledged and incentivized.

Reward Distribution(Out of 30% allocated to Ecosystem):

Allocation	5-yrs Dist.	Distribution
Operator Node	20%	10% Instant, 90% Vested (0.5% per day unlock)
News Creator	5%	10% Instant, 90% Vested (0.5% per day unlock)
Contributors	5%	10% Instant, 90% Vested (0.5% per day unlock)
Delegation Node	-	-

With our innovative reward system, active participation is not only encouraged but also rewarded.

VII. Revenue Model

Bulletin's revenue model is powered by a token economy, offering multiple avenues for generating income:

Figure 6.1: Revenue Model

1. **Content Subscriptions:** Users can access the premium content and exclusive features by purchasing subscriptions with the platform's token.
2. **Premium Services:** Additional services like advanced analytics or data visualization tools are available for a fee, payable in tokens.
3. **Micropayments:** Users can tip creators directly for their work using micropayments, encouraging content creation and supporting a creator economy.
4. **Data Licensing:** Bulletin offers partnerships with companies, granting access to anonymized data for research or marketing purposes in exchange for licensing fees.

To ensure success:

1. **Token Value:** The token's value is maintained through its utility, platform adoption, and market dynamics.
2. **Regulation:** Compliance with relevant regulations governing blockchain and token economies is ensured.

3. **Community Engagement:** A strong and engaged community is fostered through token rewards, interactive forums, and user feedback incorporation.

Fees:

Actions	Fees(in $USDT)	Fees(in $BTNT)
Model Registration Fee	$9.99	100
News2Thumbnail Access	$14.99	150
News2SocialPost Access	$19.99	200
News2Graph Access	$24.99	250
Audio2News Access	$9.99	100
Flag Product/ Feedback	$1.99 per content	20
Verification charge	$3.99	40

By implementing this revenue system, Bulletin creates a self-sustaining ecosystem that rewards creators, attracts users, and drives innovation in news and media.

VIII. Tokenomics

The Tokenomics of the Bulletin revolves around the Bullet token, which has a hard cap of 1 billion tokens. The distribution of these tokens is carefully planned to ensure fairness and sustainability within the ecosystem. Bullet tokens serve as the primary means of value exchange and participation within the platform.

Components of Tokenomics:

Components	Allocation
Foundation	5%
Investor	20%
Marketing	20%
Ecosystem Fund	30%
Bulletin Team	10%
Liquidity	15%
Total	**100%**

Bulletin Tokenomics Distribution :

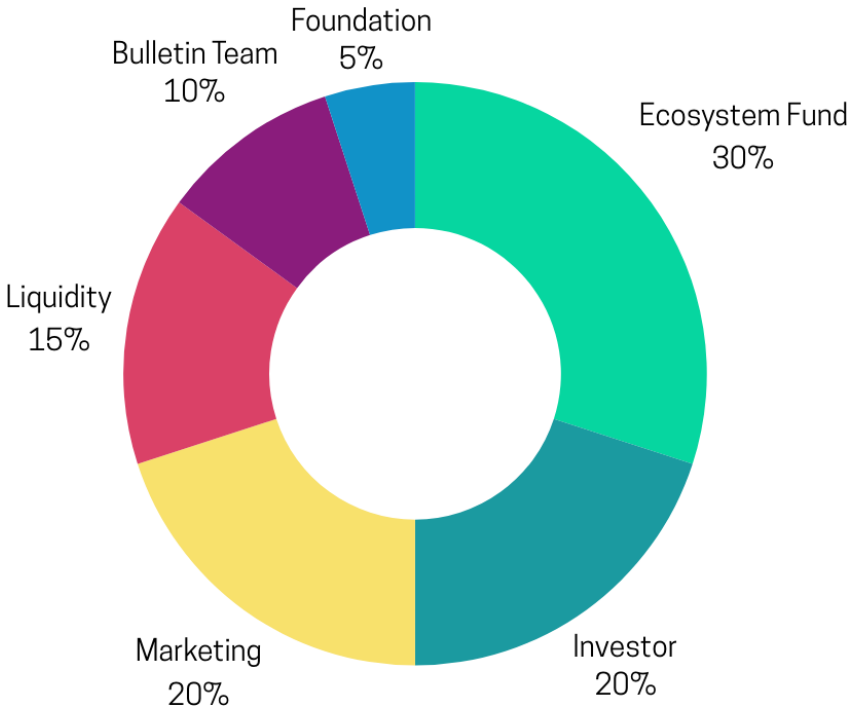

Figure 7.1: Tokenomics of Bulletin

Vesting:

Components	Vesting	Cliff
Foundation	10% per mon	12 mon
Investor	10%, 10% per mon	TGE, 3 mon
Marketing	-	-
Ecosystem Fund	10%, 8%, 5%, 4%, 3%	TGE, 5yrs
Bulletin Team	10% per mon	6 mon
Liquidity	-	-
Total	**100%**	-

Bulletin Tokenomics in Line Graph:

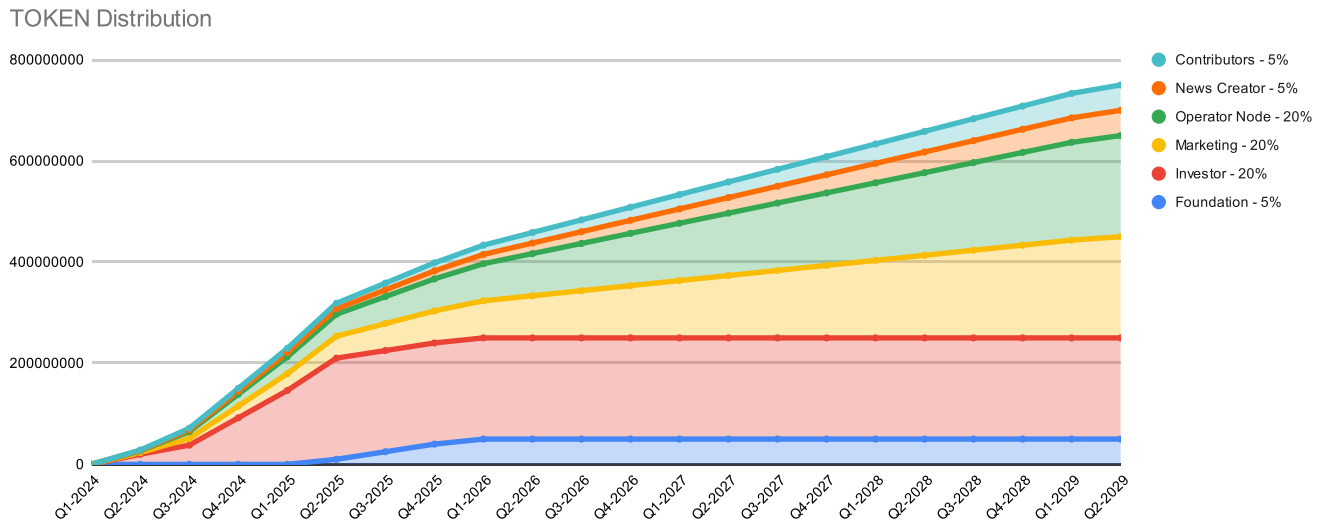

Figure 7.2: Line graph of Tokenomics

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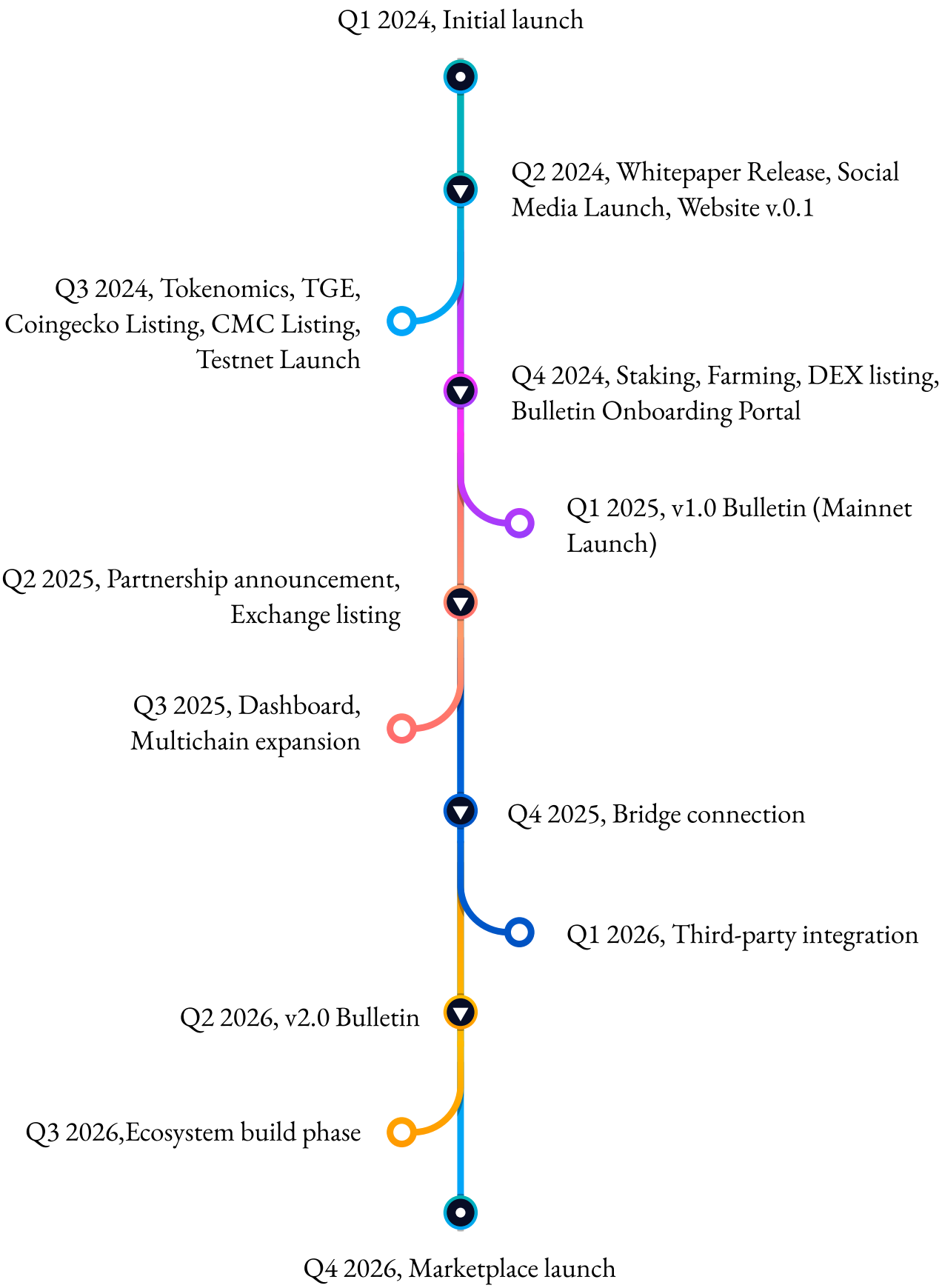
IX. Roadmap


Q1 2024, Initial launch
Q2 2024, Whitepaper Release, Social Media Launch, Website v.0.1
Q3 2024, Tokenomics, TGE, Coingecko Listing, CMC Listing, Testnet Launch
Q4 2024, Staking, Farming, DEX listing, Bulletin Onboarding Portal
Q1 2025, v1.0 Bulletin (Mainnet Launch)
Q2 2025, Partnership announcement, Exchange listing
Q3 2025, Dashboard, Multichain expansion
Q4 2025, Bridge connection
Q1 2026, Third-party integration
Q2 2026, v2.0 Bulletin
Q3 2026,Ecosystem build phase
Q4 2026, Marketplace launch

Disclaimer: *Please note that the specifics of Bulletin's roadmap are subject to change based on ongoing development, regulatory factors, and community feedback. The information provided here is for informational purposes only and should not be considered investment advice. Potential token holders are advised to conduct their research and seek professional advice before making any investment decisions.*

X. Community/ Team

Collaboration and teamwork are fundamental to the values of the Bulletin team. Through a culture of open communication and idea exchange, team members synergize efforts to address intricate challenges and deliver state-of-the-art solutions. Their commitment lies in crafting a platform that empowers users, streamlines content creation, and enriches user experiences in the Web3 era.

Transparency, integrity, and a user-centric approach underscore the team's interactions with the Bulletin community and partners. They prioritize cultivating robust relationships, fostering trust, and ensuring an exceptional experience for Bulletin users.

As the Bulletin project progresses, the team remains steadfast in pushing the boundaries of innovation in news and media technology. They are dedicated to driving forward progress, fostering creativity, and revolutionizing content creation within the Web3 landscape.

Bulletin Core Team:

Community Lead: Lucas Anderson
Product Lead: Ila Adhikari
Blockchain Lead: Subash Pandey
Advisors: Krishna Dahal

XI. Conclusion

Bulletin heralds a new era of news and media engagement, offering innovative solutions powered by AI and blockchain technology. With its focus on visualizations, personalized content, and user-centric design, Bulletin is set to redefine how users interact with news in the Web3 ecosystem. By providing a platform that prioritizes accessibility, efficiency, and impact, Bulletin empowers content creators and consumers alike to shape the future of news dissemination.

DISCLAIMER: *We strongly encourage you to conduct due diligence and seek professional advice before making investment decisions involving $BTNT. By accessing our whitepaper, website, and roadmap, you acknowledge and agree to release Bulletin and its affiliates from any liability arising from the use of this information.*