BBS Network Whitepaper v1.1

bbsnetwork.io

Abstract

The BBS Network is a **public network of interconnected message boards (nostalgically called BBS, for the Bulletin Board Systems of the early Internet)**. Each and every post is stored within a public database, and the BBS Network Token can be used to lease its associated ad real-estate (e.g. banners on posts). BBS tokens can also be staked to govern the network standards and direct the product development. 50% of the BBS token supply will be distributed to the boards (BBSes) based on the level of their registered user activity. In a sense, BBS can be likened to a "Public Reddit", distributed across multiple domains with no centralized censorship, while maintaining a network-effect and openness for anyone to build upon.

BBS owners are given autonomy of their boards, including their content policies and revenue distribution. Owners may Partner top contributing and high reputation members to allow them to earn ad revenue from their published posts and comments, rewarding the end-users for their contributions. The Engagement Mining program subsidizes the ad revenue for approved boards, incentivising the creation of quality boards and the migration of influencers from existing platforms to the BBS Network. Revenues are distributed automatically and transparently utilizing the Royalty Engine - encouraging healthy community-wide alignment of interests between all stakeholders.

A pilot version of the first BBS is currently active on bbs.market, as well as other domains.

Key Differentiators

BBS Network is similar in many ways to the widely popular message boards offered by the currently dominant platforms such as Reddit and Facebook Groups, however, it is different in that BBS is a *public online service*, meaning that it utilizes a distributed *architecture*, distributed *revenue model*, and distributed *infrastructure* - rather than a centralized backend and unilateral control of the product, service and revenue.

The Internet is a distributed network, and the initial batch of online services were distributed as well, including email, newsgroups, IRC and many others. They could be offered by any number

of service providers, avoiding a single point of failure, and a *single point of control*. However, it was unrealistic to scale public online services without being able to utilize a *public database* (such as Blockchain, developed much later), which is why we've seen proprietary solutions take over almost every online service category.

BBS Network architecture presents a solution that uses public databases efficiently to create a network of message-boards that is fully distributed, while still benefiting from the combined network effect of all users and boards in the network (by being interoperable on aspects such as user authentication, content discoverability and the execution of ad campaigns). This allows for a win-win-win stakeholder design that was simply not possible before blockchain added public database capabilities to the Internet.

Distributed Architecture

Today's message board services are each operated by a single corporate entity while BBS Network is an ecosystem of contributing entities and participants. Each BBS can be owned and operated by a different entity, which may host different boards and set different terms of use, while all boards remain tightly integrated through leveraging a public DB architecture.

Modern blockchain technology makes it possible to store BBS network data such as user accounts, channels, posts, replies and reactions on a shared public ledger.

This architecture opens up read and write access to BBS network data for all ecosystem participants - very much *unlike* today's dominating platforms where only the central entity ultimately controls access to the data (and thus to the profits it generates).
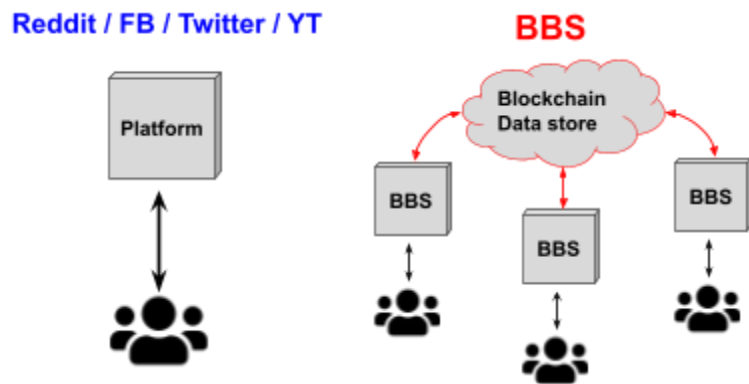
Distributed Revenue Generation Empowers Content Curation

Message boards today typically sell their ad inventory to advertisers, while using an entirely separate mechanism for content curation, which typically relies on user reactions (clicks/likes/upvotes/etc.) that are not difficult to manipulate.

BBS Network leverages a *PredictionModel* which enables community members to promote posts with the reputation they receive for engaging with the BBS and accurately predicting post visits.

When promoting a post, users must stake their earned reputation to predict how many visits the post will receive. Accurate predictions are rewarded with higher reputation, while inaccurate predictions will lose reputation.
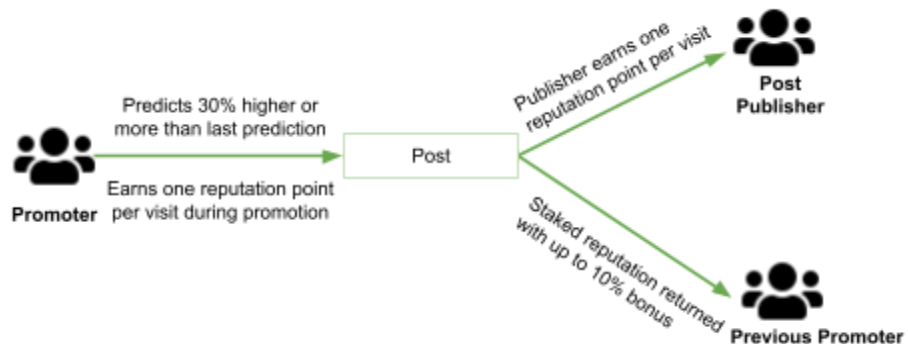
When a post is promoted, the prediction must be at least 30% higher than the previous prediction or the post's visits. On a new promotion, the previous promoter will have their staked reputation with up to a 10% bonus. While a post is promoted, each visit will generate 1 reputation point for the promoter and publisher.

The post's prediction is then used to determine the potential popularity within the community, providing a unique and manipulation-resistant method of content curation.
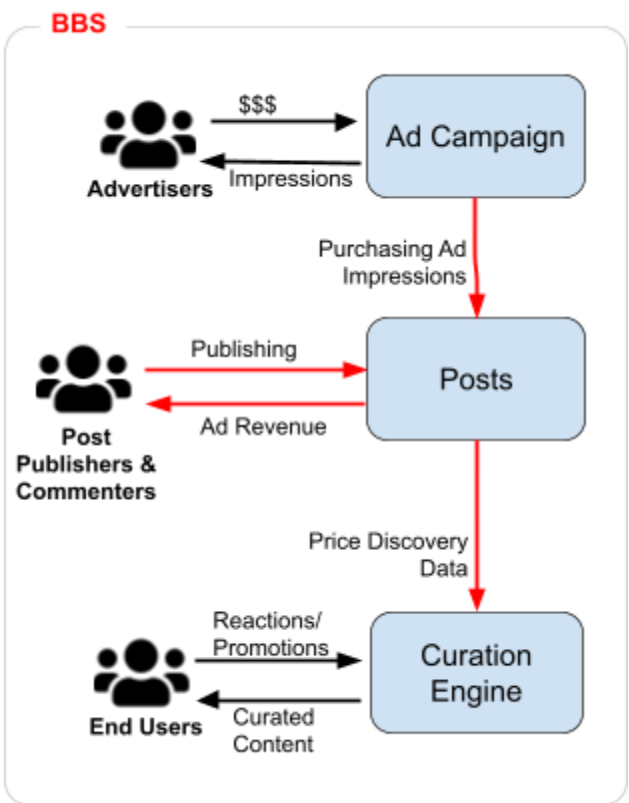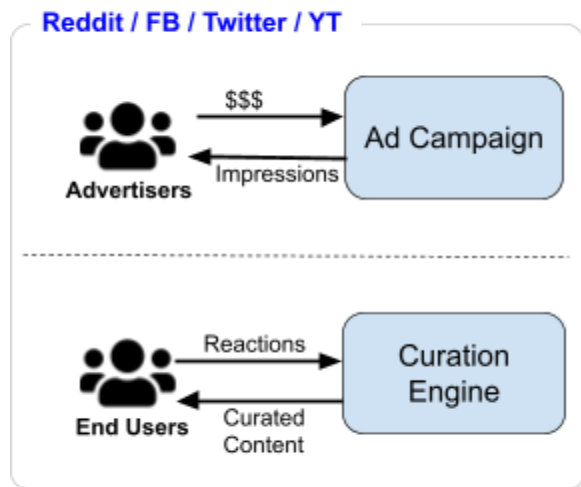
Distributed Ecosystem

The network is made up of potentially infinite boards where every board in the network is a full Reddit-like service, with any number of subreddits ("channels"), users, comments and community features. All boards are interlinked and interoperable because their data resides on a public blockchain which any developer or user can interact with. The ecosystem consists of the following stakeholders:

- **Developers** can build new UX, product components, and features for any operator to choose to host.
  - *deWeb LTD is the first developer building the core software for the BBS Network.*
- **Operators** host developers' BBS software to serve any number of boards.
  - *Currently, several operators offer BBS cloud hosting globally.*
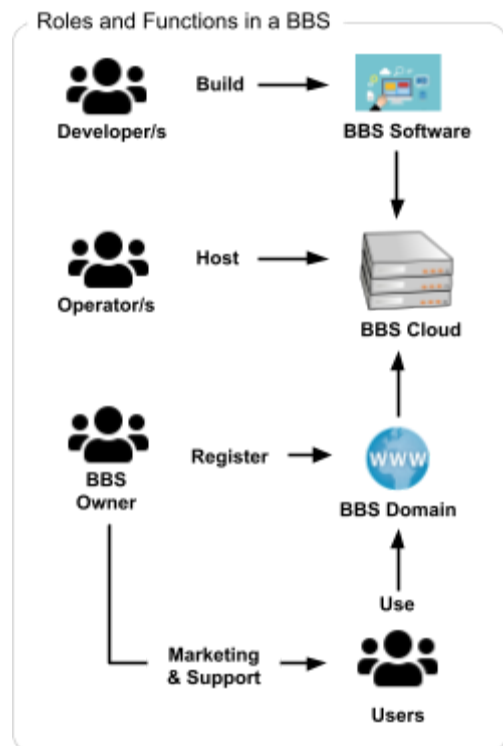
- **Board Owners** use the operators' services to launch their own board under a shared or their own domain.
  - *The first board was launched in March 2021 by the owner of a Star Wars fans YouTube channel with 3m subscribers: starwarstheory.com.*
  - BBS.market was launched in Aug 2021, enabling anyone to easily create a board.

The BBS network uses **a distributed identity and authentication model**, similar in nature to the model used by the global email network, where the members' home domain is associated with their unique ID (i.e. member@bbs.domain.com). However, board members have full control over their accounts through their digital signatures and can change their home board at any time.

Reputation & Revenue Distribution

Each board issues its own reputation that is given as bonuses to members for engaging and promoting the board, and can be used to promote posts on that board. As noted, post promotions are used mainly for curation. The board owner maintains control over their board's revenue and can invite members to become a Partner of their board which grants the ability to earn a share of the board's ad revenue from published posts and comments. Board owners are incentivized to partner top contributors to encourage activity and further contribution.

Revenue Backing and Cashier

- In order to enable cashing-out from a board, each board's generated revenue is distributed to the board's "Cashier", minus a 10% operator & network fee, which provides liquidity when cashing out to BBS tokens.
- Revenue is always received in BBS tokens.
- Members with cashable balance wishing to cash-out can do so according to the following policy:
  - If the cashier's BBS token balance is sufficient (higher than the amount being cashed-out), then cash-outs can be processed instantly.
  - If the cashier's balance is insufficient (lower than the amount being cashed-out) then cash-outs can be processed as soon as sufficient new revenue has been accumulated by the cashier.
  - In cases where there are multiple cash-out requests, they are handled in the order in which they are received ("Cashier's line").

General System - Blockchain Diagram
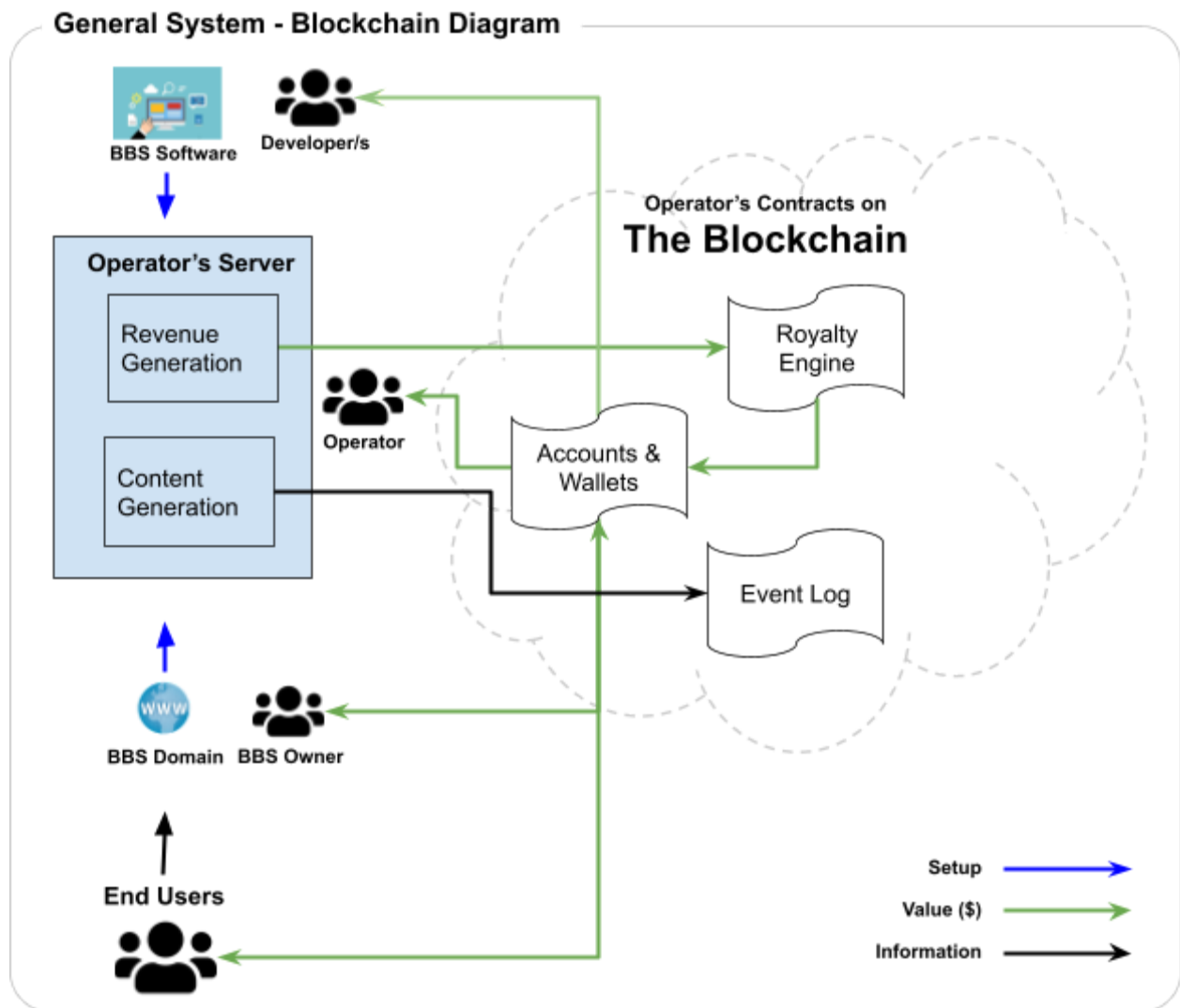
The BBS Token

The BBS Network is an ERC-20 token. It is used as the native currency of the BBS network, flowing between boards, operators and developers. BBS tokens also enable the holder to participate in the BBS DAO governance via staking and voting.

- Advertisers use BBS tokens to purchase ad space on every board in the network and benefit from engagement mining subsidies (detailed below).
- Royalties from ad revenues are distributed to the BBS DAO, BBS operators and board owners in BBS tokens.
- To participate in the BBS DAO governance and participate in the staking rewards, BBS holders need to stake their tokens.
- Staking period is user-defined and is at minimum until the end of the current quarter, and up to 12 additional quarters (three years).

- BBS DAO revenues, staking rewards and liquidity fees are distributed to BBS token stakers
- For each additional quarter locked (up to 12), the staker will benefit from:
  - 25% DAO Voting power boost (up to 300%)
  - 25% Earning boost from staking rewards, liquidity fees and BBS DAO royalties
- BBS token holders can vote on governance proposals such as:
  - Smart contract upgrades
  - Liquidity management
  - Cross-BBS interoperability standards

BBS Token Distribution

The BBS tokens are distributed as follows:
- 50% - Engagement Mining (Explained Below)
- 20% - Liquidity & Staking Rewards
- 10% - Initial Capital Providers
- 10% - Long Term Development and Operations Budget (Reserve)
- 10% - Founding Team

Engagement Mining

In order to bootstrap the BBS network, 50% of the BBS tokens will be distributed over multiple years to the BBS network boards, as ad revenues, *based on the user-engagement they generate* relative to the rest of the network on each day.

On boards where active ad campaigns are running, engagement mining would subsidize the advertisers. This is done to bootstrap the utility of the BBS token for running ad campaigns across the network.

Social Capital

Members of the BBS system are encouraged to publicly link their BBS account to their existing social accounts from YouTube, Facebook, Twitter, Reddit, and other popular platforms. Daily bonus amounts are based on the member accounts' *Social Capital* (representing the members' followers, friends, karma, etc. in the different networks) in order to attract high-profile members as well as to prevent fraud.

Measuring Engagement

The engagement is measured using post impressions by registered members. The primary reason is to prevent fraud, as registered members are authenticated and their social capital can be monitored to detect anomalies.

Distribution Distribution Logic

The DAO may set a different CPM for any specific board category, language or other parameters. The CPM is the BBS token amount paid for 1,000 registered members' post impression. The CPM rates would increase or decrease in order to hit the BBS token daily engagement-mining distribution targets.

Engagement Mining Fraud Prevention

A BBS Blacklist is used by the DAO (BBS Network Governance) to deter any attempts to fraudulently gain BBS tokens from the initial distribution by faking user activity.

BBS tokens can be earned through engagement mining as soon as the BBS Network is launched. For a board to participate in engagement mining
- The board has to hit a minimum number of unique posters, for a set period (e.g. a week). This ensures that only active boards would require a review.
- Boards must be consistently generating meaningful discussion & engagement to bring positive value to the network, as determined by the DAO
- An additional period (e.g. another week) has passed since the board has reached the previous threshold - so that the community would be given a chance to review the new board before it becomes an official engagement-mining beneficiary.

The specific periods and thresholds are set via the DAO voting process to make sure that eligible boards can be realistically reviewed by the community prior to collecting their mined BBS tokens.

Through the governance system, boards can be added to or removed from the blacklist. Blacklisted boards are simply ignored in the daily token allocation process.

This mechanic incentivizes existing board owners to review, detect and report any fraudulent activity sooner rather than later, for each day it continues is a day they are directly harmed, despite the fraudster ultimately being stripped of their earnings.

Lastly, the BBS DAO uses the BBS tokens to purchase ad space from the boards, at a price-per-impression set by the DAO. The data collected through those campaigns (CTR, conversion rate, etc) would enable transparent monitoring of the actual volume and nature of the participating board's user traffic.

Existing Technology

deWeb LTD has been building the BBS software, which is currently in its pilot phase. deWeb has successfully implemented the following components:
- deWeb framework:
  - Distributed Sign-in (using email/google/facebook/twitter/github)

- ■ Recoverable passwords - essential and non-trivial technology for consumer applications on blockchain
  - ○ User wallets, deposits, withdrawals, transfers, and swaps of CTs, BBS and other tokens, across multiple blockchains.
  - ○ Royalty Distribution Engine - allowing for seamless, instant, trustless and transparent collaboration and settlement between ecosystem stakeholders (developers, operators and board owners).
  - ○ Dapplets - Enabling developers to build services that can easily be integrated to the BBS user experience by the BBS domain owner.
- ● BBS software
  - ○ User-generated message-boards (similar in nature to "subreddits")
  - ○ Global feed of all sub message-boards
  - ○ Integrated editor for post publishers
  - ○ Video upload
  - ○ Polls
  - ○ Comments and replies with user reactions and mentions
  - ○ In-app notifications & messages
  - ○ BBS wide chat
  - ○ Post promotion
  - ○ Member profile & wallet
  - ○ Automatic Bonuses (For joining, linking accounts and daily activity)
  - ○ TX history and cashier queue management
  - ○ Multi-moderator support
  - ○ Internal Ad Server
  - ○ Cross-domain interoperability
  - ○ Search for posts, boards, comments, etc
- ● 3rd-party application support - seamless and streamlined to allow for the developer ecosystem to quickly mature and create/receive value.

Key Advantages of the BBS Network Model

- ● BBS is a fully decentralized Reddit. Anyone can be a developer, an operator, a board owner or user.
- ● Unlike today's popular platforms, a board owner has a direct relationship with their audience, meaning they have access to their contact information, and have ultimate control over the audience UX, through rich admin configurations, choice of operators and autonomy in terms of service (e.g. one board owner may allow profanity while another prohibits and removes it, more on this below).
- ● The generated revenue is shared between the ecosystem participants in a fully automatic, transparent, and market-driven manner. Growth is constantly incentivized as a win-win for users, creators, advertisers and curators.
- ● Decentralized content policies - While most users would prefer that some types of content be banned, allowing this power to a single, central entity proves to be highly

problematic. In the BBS model, each owner is responsible for the removal policy of their own board, and users can switch to a new home board if they are not happy with their current board content and moderation policies.

- The prediction-based discovery process provides a more robust solution for content curation. Today's leading services rely on user reactions (Upvotes/Downvotes, likes, etc) that are easy to manipulate covertly using botnets. However, it is prohibitively more challenging to provide accurate post predictions, which provides the curation mechanism with manipulation resistance in a transparent environment, with reputation points stored in accounts that are publicly linked to users' social credentials with an immutable record of all their curation activity.
- It is very easy for developers to build new modules that seamlessly integrate to any board (e.g. a module enabling IPFS-based video hosting). These modules can be hosted on their own custom servers and can be added to any board at the owner's discretion through simple configurations and market driven revenue sharing.
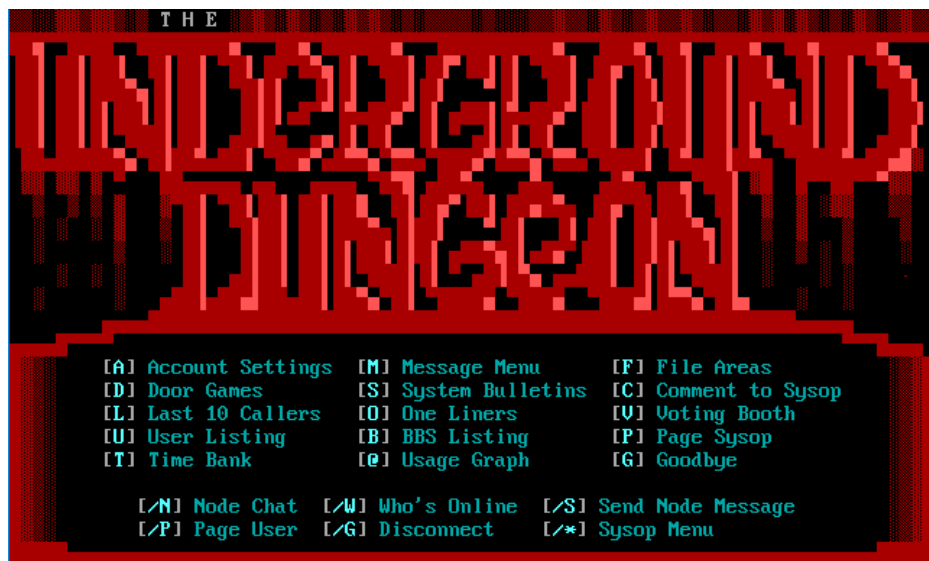
DAO Launch

- The BBS Network DAO will be launched by BBS Switzerland AG - A fully owned subsidiary of deWeb LTD.
- deWeb has signed a license agreement with BBS Switzerland for the product's source code *which may be assigned to 3rd parties through a BBS DAO governance resolution*.

Homage to an Emergent Space: Our Internet

From Wikipedia:

*A **bulletin board system** or **BBS** (also called Computer Bulletin Board Service, CBBS) is a [computer server](#) running [software](#) ... Once logged in, the user can perform functions such as .. reading news and bulletins, and exchanging messages with other users through public [message boards](#) and sometimes via direct [chatting](#). In the early 1980s, message networks such as [FidoNet](#) sprang up to provide services such as NetMail, which is similar to [email](#).*

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              T H E
[A] Account Settings   [M] Message Menu       [F] File Areas
[D] Door Games         [S] System Bulletins   [C] Comment to Sysop
[L] Last 10 Callers    [O] One Liners         [V] Voting Booth
[U] User Listing       [B] BBS Listing        [P] Page Sysop
[T] Time Bank          [@] Usage Graph        [G] Goodbye

      [/N] Node Chat   [/W] Who's Online   [/S] Send Node Message
      [/P] Page User   [/G] Disconnect     [/*] Sysop Menu
```

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SYNCHRONET            04:37 pm 10/05/14  Vertrauen
                      Last On:  10/03/14  Node 1    Up 20:04
                      FirstOn:  10/07/10  Calls  29 of 25723

   Read/Post Messages        Message Area Selection      Electronic Mail

 N   New message scan      J   Jump to new msg area     E   Read/Send E-mail
 R   Read message prompt       *  List sub-boards
 Z   Continuous new scan       /* List groups           Other Commands
 B   Browse new scan       { }  # Select sub-board
 Q   QWK packet transfer   [ ] /# Select group          D   Default user config
 P   Post a message                                     &   Message scan config
 A   Post auto-message        Go to                      U   User lists
                                                         I   Information
   Message Search          T   File Transfer section    M   Minute Bank
                           G   Text file section        /L  Node activity
 F   Find text in messages C   Chat section             ^K  Ctrl-key Menu
 S   Scan for msgs to you  X   External programs        O   Logoff BBS (or /O)

 Anytime | Ctrl-U Who's online Ctrl-P Send private msg Ctrl-C Abort cmd/text

  Main   9:06:07 [2] DOVE-Net [1] General:
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