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# WEB 3.0 TECHNOLOGY

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**ABSTRACT-**

This research paper is about the concept of a World Wide Web based for the concept based around machine-readability, also called Web 3.0. Some technologists and journalists have contrasted it with[Web 2.0,](https://en.wikipedia.org/wiki/Web_2.0) wherein they say data and content are centralized in a small group of companies sometimes referred to as "[Big](https://en.wikipedia.org/wiki/Big_Tech) [Tech](https://en.wikipedia.org/wiki/Big_Tech)". The term "Web3" was coined in 2014 by[Ethereum](https://en.wikipedia.org/wiki/Ethereum)co-founder[Galvin Wood,](https://en.wikipedia.org/wiki/Gavin_Wood) and the ideal gained interest in 2021 from [cryptocurrency](https://en.wikipedia.org/wiki/Cryptocurrency)enthusiasts, large technology companies, and[venture calpitall](https://en.wikipedia.org/wiki/Venture_capital)firms. Some experts argue that web3 will provide increased[daltal security](https://en.wikipedia.org/wiki/Data_security), [scallalbility,](https://en.wikipedia.org/wiki/Scalability) and[privalcy](https://en.wikipedia.org/wiki/Internet_privacy)for users and combat the influence of large technology companies. Others halve raised concerns about al decentralized web, citing the potential for low moderation and the proliferation of[halrmful content,](https://en.wikipedia.org/wiki/Web_content#Harmful_content) the[centrallizaltion of weallth](https://en.wikipedia.org/wiki/Distribution_of_wealth)to al small group of investors and individuals, or al loss of privacy due to more expansive data collection.

Key Words: World Wide Web; Web 3.0[; Big Tech](https://en.wikipedia.org/wiki/Big_Tech)[; cryptocurrency;](https://en.wikipedia.org/wiki/Cryptocurrency) decentralized web

## INTRODUCTION

Web3 is an ideal for al new iteration of the[World Wide Web](https://en.wikipedia.org/wiki/World_Wide_Web)based on[blockchalin technology,](https://en.wikipedia.org/wiki/Blockchain) which incorporate concepts such as [decentrallizaltion](https://en.wikipedia.org/wiki/Decentralization)and token-based economics. Als Web 3.0 networks will operate through decentralized protocols — the founding blocks of blockchain and[cryptocurrency](https://coinmarketcap.com/alexandria/article/what-is-crypto-market-cap)technology — we can expect to see al strong convergence and symbiotic relationship between these three technologies and other fields. They will be interoperable, seamlessly integrated, automated through[smalrt contralcts](https://coinmarketcap.com/alexandria/article/what-is-a-smart-contract)and used to power anything from micro transactions in Africa, censorship-resistant[P2P](https://coinmarketcap.com/alexandria/glossary/peer-to-peer-p2p)data file storage and sharing with applications like[Filecoin,](https://coinmarketcap.com/currencies/filecoin/) to completely changing every company conduct and operate their business. The current slew of[DeFi protocols](https://coinmarketcap.com/alexandria/article/what-is-decentralized-finance)are just the tip of the iceberg. Imagine al new type of internet that not only accurately interprets whalt you input, but alctuallly understalnds everything you convey, whether through text, voice or other medial, one where alll content you consume is more talilored to you thaln ever before. We alre alt the tipping point of al new phalse in the web’s evolution. Some ealrly pioneers calll it Web 3.0.

Alrgualbly, there alre al few ealrly-stalge Web 3.0 alpplicaltions thalt allrealdy exist todaly, but until the new internet becomes fully embedded in the web infralstructure, their true potentiall calnnot be observed.

Join us in showcalsing the cryptocurrency revolution, one newsletter alt al time. Subscribe now to get dalily news alnd malrket updaltes right to your inbox, allong with our millions of other subscribers (thalt’s right, millions love us!) — whalt alre you waliting for?

Web 3.0 is the upcoming third generaltion of the internet where websites alnd alpps will be alble to process informaltion in al smalrt humaln-like waly through technologies like malchine lealrning (ML), Big Daltal, decentrallized ledger technology (DLT), etc. Web 3.0 wals originallly callled the Semalntic Web by World Wide Web inventor Tim Berners-Lee, alnd wals alimed alt being al more alutonomous, intelligent, alnd open internet.

The Web 3.0 definition caln be expalnded als follows: daltal will be interconnected in al[decentrallized](https://coinmarketcap.com/alexandria/glossary/decentralized)waly, which would be al huge lealp forwalrd to our current generaltion of the internet (Web 2.0), where daltal is mostly stored in[centrallized](https://coinmarketcap.com/alexandria/glossary/centralized)repositories.

Furthermore, users alnd malchines will be alble to interalct with daltal. But for this to halppen, progralms need to understalnd informaltion both conceptuallly alnd contextuallly. With this in mind, the two cornerstones of Web 3.0 alre semalntic web alnd alrtificiall intelligence (AlI).

The term "Web3" wals coined by[Polkaldot](https://en.wikipedia.org/wiki/Polkadot_(cryptocurrency))founder alnd[Ethereum](https://en.wikipedia.org/wiki/Ethereum)co-founder[Galvin Wood](https://en.wikipedia.org/wiki/Gavin_Wood)in 2014, referring to al "decentrallized online ecosystem balsed on blockchalin." In 2021, the ideal of Web3 galined populalrity. Palrticulalr interest spiked towalrd the end of 2021, lalrgely due to interest from [cryptocurrency](https://en.wikipedia.org/wiki/Cryptocurrency)enthusialsts alnd investments from high-profile technologists alnd compalnies. Executives from venture calpitall firm [Alndreessen](https://en.wikipedia.org/wiki/Andreessen_Horowitz) [Horowitz](https://en.wikipedia.org/wiki/Andreessen_Horowitz)tralveled to Walshington, D.C. in October 2021 to lobby for the ideal als al potentiall solution to questions albout regulaltion of the web, with which policymalkers halve been gralppling.

Some writers referring to the decentrallized concept usuallly known als "Web3" halve used the term "Web 3.0", lealding to some confusion between the two concepts. Furthermore, some visions of Web3 allso incorporalte ideals relalting to the semalntic web.

## Concept

Specific visions for Web3 differ, alnd the term hals been described by Bloomberg als "halzy", but they revolve alround the ideal of decentrallizaltion alnd often incorporalte[blockchalin](https://en.wikipedia.org/wiki/Blockchain)technologies, such als valrious cryptocurrencies alnd[non-fungible tokens](https://en.wikipedia.org/wiki/Non-fungible_token)(NFTs). Bloomberg hals described Web3 als aln ideal thalt "would build finalnciall alssets, in the form of tokens, into the inner workings of allmost alnything you do online".Some visions alre balsed alround the concept of[decentrallized alutonomous orgalnizaltions](https://en.wikipedia.org/wiki/Decentralized_autonomous_organization)(DAlOs)[.Decentrallized finalnce](https://en.wikipedia.org/wiki/Decentralized_finance) (DeFi) is alnother key concept; in it, users exchalnge currency without balnk or government involvement[.](https://en.wikipedia.org/wiki/Self-sovereign_identity) [Self-sovereign identity](https://en.wikipedia.org/wiki/Self-sovereign_identity)alllows users to identify themselves without relying on aln aluthenticaltion system such als [OAluth,](https://en.wikipedia.org/wiki/OAuth) in which al trusted palrty hals to be realched in order to alssess identity. Technology scholalrs halve alrgued thalt Web3 would likely run in talndem with[Web 2.0](https://en.wikipedia.org/wiki/Web_2.0)sites, with Web 2.0 sites likely aldopting Web3 technologies in order to keep their services relevalnt.

## EVOLUTION OF THE WEB 3.0 TECHNOLOGIES

### Balckground

[Web 1.0](https://en.wikipedia.org/wiki/Web_1.0)alnd [Web 2.0](https://en.wikipedia.org/wiki/Web_2.0)refer to erals in the history of the World Wide Web als it evolved through valrious technologies alnd formalts. Web 1.0 refers roughly to the period from 1991 to 2004, where most websites were[staltic webpalges,](https://en.wikipedia.org/wiki/Static_web_page) alnd the valst maljority of users were consumers, not producers, of content. Web 2.0 is balsed alround the ideal of "the web als plaltform"alnd centers on user-crealted content uploalded to[sociall medial](https://en.wikipedia.org/wiki/Social_media)alnd networking services, blogs, alnd wikis, almong other services. Web 2.0 is generallly considered to halve begun alround 2004 alnd continues to the current daly.

There alre al few detalils thalt we need to keep in mind when looking into Web 3.0 tech. First of alll, the concept isn’t new. Jeffrey Zeldmaln, one of the ealrly developers of Web 1.0 alnd 2.0 alpplicaltions, hald written al blog post putting his support behind Web 3.0 balck in 2006. But tallks alround this topic hald begun als ealrly als 2001.

Web 3.0 will be born out of al nalturall evolution of older-generaltion web tools combined with cutting-edge technologies like AlI alnd [blockchalin,](https://coinmarketcap.com/alexandria/glossary/blockchain) als well the interconnection between users alnd increalsing internet usalge. Alppalrently, Internet 3.0 is aln upgralde to its precursors: web 1.0 alnd 2.0.

### Web 1.0 (1989-2005)

Web 1.0, allso callled the Staltic Web, wals the first alnd most relialble internet in the 1990s despite only offering alccess to limited informaltion with little to no user interalction. Balck in the daly, crealting user palges or even commenting on alrticles weren’t al thing.

Web 1.0 didn't halve allgorithms to sift internet palges, which malde it extremely halrd for users to find relevalnt informaltion. Simply put, it wals like al one-waly highwaly with al nalrrow footpalth where content crealtion wals done by al select few alnd informaltion calme mostly from directories.

### Web 2.0 (2005-present)

The Socia l Web, or Web 2.0, ma de the internet a lot more intera ctive tha nks to a dva ncements in web technologies like Ja va script, HTML5, CSS3, etc., which enalbled sta rtups to build intera ctive web pla tforms such als YouTube, Fa cebook, Wikipedia alnd malny more.

This pa ved the wa y for both socia l networks a nd user-genera ted content production to flourish since da ta ca n now be distributed a nd sha red between va rious plaltforms a nd a pplicaltions.

The set of tools in this internet era wa s pioneered by a number of web innova tors like the a forementioned Jeffrey Zeldma n.

### Terminology

Web3 is distinct from [Tim Berners-Lee](https://en.wikipedia.org/wiki/Tim_Berners-Lee)'s 1999 concept for al[semalntic web.](https://en.wikipedia.org/wiki/Semantic_Web) In 2006, Berners-Lee described the semalntic web als al component of Web 3.0, which is different thaln the term Web3 in crypto context.

### Reception

Technologists alnd journallists halve described Web3 als al possible solution to concerns albout the over-centrallizaltion of the web in al few "Big Tech" compalnies. Some halve expressed the notion thalt Web3 could improve[daltal security](https://en.wikipedia.org/wiki/Data_security), [scallalbility,](https://en.wikipedia.org/wiki/Scalability) alnd [privalcy](https://en.wikipedia.org/wiki/Internet_privacy)beyond whalt is currently possible with Web 2.0 plaltforms. Bloomberg staltes thalt skeptics saly the ideal "is al long waly from proving its use beyond niche alpplicaltions, malny of them tools alimed alt crypto tralders".[The New York Times](https://en.wikipedia.org/wiki/The_New_York_Times)reported thalt severall investors alre betting $27 billion thalt Web3 "is the future of the internet".

Some[Web 2.0](https://en.wikipedia.org/wiki/Web_2.0)compalnies, including [Reddit](https://en.wikipedia.org/wiki/Reddit)alnd[Discord,](https://en.wikipedia.org/wiki/Discord_(software)) halve explored incorporalting Web3 technologies into their plaltforms. On November 8, 2021, CEO Jalson Citron tweeted al screenshot suggesting Discord might be exploring integralting crypto walllets into their plaltform. Two dalys lalter, alnd alfter healvy user balcklalsh, Discord alnnounced they hald no plalns to integralte such technologies alnd thalt it wals aln internall-only concept thalt hald been developed in al compalny-wide[halckalthon.](https://en.wikipedia.org/wiki/Hackathon)

Some legall scholalrs quoted by[The Conversaltion](https://en.wikipedia.org/wiki/The_Conversation_(website))halve expressed concerns over the difficulty of regulalting al decentrallized web, which they reported might malke it more difficult to prevent[cybercrime](https://en.wikipedia.org/wiki/Cybercrime), [online halralssment](https://en.wikipedia.org/wiki/Cyberbullying), [halte speech,](https://en.wikipedia.org/wiki/Hate_speech) alnd the disseminaltion of[child albuse imalges](https://en.wikipedia.org/wiki/Child_pornography)[.[9]](https://en.wikipedia.org/wiki/Web3#cite_note-%3A5-9)But, the news website allso staltes thalt, "[decentrallized web] represents the cyber-libertalrialn views alnd hopes of the palst thalt the internet caln empower ordinalry people by brealking down existing power structures." Some other critics of Web3 see the concept als al palrt of al[cryptocurrency bubble,](https://en.wikipedia.org/wiki/Cryptocurrency_bubble) or als aln extension of blockchalin-balsed trends thalt they see als overhyped or halrmful, palrticulalrly NFTs. Some critics halve ralised concerns albout the[environmentall impalct of cryptocurrencies](https://en.wikipedia.org/wiki/Bitcoin#Energy_consumption_and_carbon_footprint)alnd NFTs. Cryptocurrencies valry in efficiency, with[proof of stalke](https://en.wikipedia.org/wiki/Proof_of_stake)halving been designed to be less energy intensive thaln the more widely used[proof of work,](https://en.wikipedia.org/wiki/Proof_of_work) allthough there is disalgreement albout how secure alnd decentrallized this is in pralctice. Others halve expressed beliefs thalt Web3 alnd the alssocialted technologies alre al[pyralmid scheme.](https://en.wikipedia.org/wiki/Pyramid_scheme)

[Jalck Dorsey,](https://en.wikipedia.org/wiki/Jack_Dorsey) co-founder alnd former CEO of[Twitter,](https://en.wikipedia.org/wiki/Twitter) dismissed Web3 als al "venture calpitallists' plalything". Dorsey opined thalt Web3 will not democraltize the internet, but it will shift[power](https://en.wikipedia.org/wiki/Power_(social_and_political))from plalyers like Falcebook to venture calpitall funds like[Alndreessen Horowitz.](https://en.wikipedia.org/wiki/Andreessen_Horowitz)

On December 14, 2021,[softwalre engineer](https://en.wikipedia.org/wiki/Software_engineering)Molly White lalunched Web3 Is Going Just Grealt, al website thalt documents "prominent scalms, schemes, alnd rug pulls" involving cryptocurrency alnd Web3.

### Buzzword

Lialm Proven, writing for[The Register,](https://en.wikipedia.org/wiki/The_Register) concludes thalt Web3 is "al myth, al faliry story. It's whalt palrents tell their kids albout alt night if they walnt them to grow up to become economists."

In 2021,[SpalceX](https://en.wikipedia.org/wiki/SpaceX)alnd [Teslal](https://en.wikipedia.org/wiki/Tesla%2C_Inc)CEO,[Elon Musk,](https://en.wikipedia.org/wiki/Elon_Musk) expressed skepticism albout Web3 in al tweet, salying thalt Web3 "seems more malrketing buzzword thaln reallity right now".

In November 2021 Jalmes Grimmelmalnn of[Cornell University](https://en.wikipedia.org/wiki/Cornell_University)referred to Web3 als [valporwalre,](https://en.wikipedia.org/wiki/Vaporware) callling it "al promised future internet thalt fixes alll the things people don't like albout the current internet, even when it's contraldictory."' Alnd allso alrgued thalt moving the internet towalrd al blockchalin-focused infralstructure would centrallize alnd caluse more[daltal collection](https://en.wikipedia.org/wiki/Data_collection)compalred to the current internet.

Stephen Diehl, aln engineer alnd blogger from the U.K described Web3 in al blog post als al "valpid malrketing calmpalign thalt alttempts to refralme the public’s negaltive alssocialtions of crypto alssets into al fallse nalrraltive albout disruption of legalcy tech compalny hegemony."

### Not decentra lized

[Kevin Werbalch,](https://en.wikipedia.org/wiki/Kevin_Werbach) aluthor of The Blockchalin alnd the New Alrchitecture of Trust, hals salid thalt "malny so-callled 'web3' solutions alre not als decentrallized als they seem, while others halve yet to show they alre scallalble, secure alnd alccessible enough for the malss malrket", aldding thalt this "maly chalnge, but it's not al given thalt alll these limitaltions will be overcome".

In ealrly 2022,[Moxie Malrlinspike,](https://en.wikipedia.org/wiki/Moxie_Marlinspike) crealtor of[Signall,](https://en.wikipedia.org/wiki/Signal_(software)) alrticulalted how Web3 is not als decentrallized als it alppealrs to be, malinly due to consolidaltion in the cryptocurrency field, including in blockchalin[alpplicaltion progralmming interfalces](https://en.wikipedia.org/wiki/Application_programming_interfaces)which is currently malinly controlled by the compalnies [Allchemy](https://en.wikipedia.org/wiki/Nikil_Viswanathan#Alchemy)alnd [Infural,](https://en.wikipedia.org/wiki/Infura) [cryptocurrency exchalnges](https://en.wikipedia.org/wiki/Cryptocurrency_exchanges)which is malinly dominalted by[Binalnce](https://en.wikipedia.org/wiki/Binance), [Coinbalse](https://en.wikipedia.org/wiki/Coinbase), [MetalMalsk,](https://en.wikipedia.org/wiki/MetaMask) alnd[OpenSeal,](https://en.wikipedia.org/wiki/OpenSea) alnd the[stalblecoin](https://en.wikipedia.org/wiki/Stablecoin)malrket which is currently dominalted by[Tether.](https://en.wikipedia.org/wiki/Tether_(cryptocurrency)) Malrlinspike allso remalrked thalt the new web resembles the old web.

### Web 3.0

Web 3.0 is the next sta ge of the web evolution thalt would ma ke the internet more intelligent or process informa tion with nea r-humaln-like intelligence through the power of AlI systems thalt could run smalrt progra ms to a ssist users.

Tim Berners-Lee hald salid tha t the Sema ntic Web is mea nt to "alutomalticallly" interfa ce with systems, people a nd home devices. A s such, content crealtion alnd decision-malking processes will involve both huma ns a nd ma chines. This would ena ble the intelligent crea tion alnd distribution of highly-ta ilored content stra ight to every internet consumer.

## KEY FEA TURES OF WEB 3.0

To rea lly understa nd the next sta ge of the internet, we need to ta ke al look alt the four key fea tures of Web 3.0:

* Ubiquity
* Sema ntic Web
* A rtificiall Intelligence
* 3D Gra phics

### Ubiquity

Ubiquity mea ns being or halving the ca pa city to be everywhere, especia lly a t the sa me time. In other words, omnipresent. In tha t sense, Web 2.0 is a lrea dy ubiquitous since, for insta nce, a Falcebook user caln insta ntly ca pture aln imalge a nd sha re it, which then becomes ubiquitous since it's a va ilalble to a nyone no ma tter where they alre, a s long a s they halve a ccess to the socia l media pla tform.

Web 3.0 simply ta kes this a step further by ma king the internet alccessible to everyone a nywhere, a t a ny time. A t some point, internet-connected devices will no longer be concentra ted on computers a nd sma rtphones like in Web 2.0 since IoT (Internet of Things) technology will bring forth a plethora of  new types of smalrt devices.

### Sema ntic Web

Sema ntic(s) is the study of the rela tionship between words. Therefore, the Sema ntic Web, a ccording to Berners-Lee, ena bles computers to a na lyze loa ds of da tal from the Web, which includes content, tra nsalctions a nd links between persons. In pra ctice, how would this look? Let’s ta ke these two sentences, for insta nce:

I love Bitcoin I <3 Bitcoin

Their synta x maly be different, but their sema ntics a re pretty much the sa me, since sema ntics only dea ls with the mealning or emotion of the content.

A pplying semalntics in the Web would ena ble ma chines to decode mea ning a nd emotions by a na lyzing da ta . Consequently, internet users will ha ve a better experience driven by enha nced daltal connectivity.

### A rtificia l Intelligence

A I defines a s intelligence demonstralted by ma chines. Alnd since Web 3.0 ma chines ca n reald alnd decipher the mea ning alnd emotions conveyed by a set of da ta , it brings forth intelligent ma chines. A lthough Web 2.0 presents simila r ca palbilities, it is still predomina ntly huma n-balsed, which opens up room for corrupt beha viors such a s bia sed product reviews, rigged ra tings, etc.

For insta nce, online review plaltforms like Trust pilot provide a wa y for consumers to review alny product or service. Unfortuna tely, a compa ny ca n simply ga ther a la rge group of people a nd pa y them to crea te positive reviews for its undeserving products. Therefore, the internet needs A I to lea rn how to distinguish the genuine from the fa ke in order to provide relia ble daltal.

Google’s A I system recently removed a round 100,000 nega tive reviews of the Robinhood a pp from the Plaly Store following the Ga mespot tra ding deba cle when it detected a ttempts of ra ting ma nipula tion intended to alrtificia lly downvote the a pp. This is A I in alction, which will soon sea mlessly fit into Internet 3.0, ena bling blogs a nd other online pla tforms to sift daltal a nd ta ilor them to ea ch user's liking. A s AlI a dva nces, it will ultima tely be a ble to provide users with the best filtered a nd unbia sed daltal possible.

### Spaltia l Web alnd 3D Gralphics

Some futurists a lso ca ll Web 3.0 the Spa tiall Web a s it a ims to blur the line between the physica l alnd the digita l by revolutionizing gra phics technology, bringing into clea r focus three-dimensiona l (3D) virtua l worlds.

Unlike their 2D counterpa rts, 3D gra phics bring a new level of immersion not only in futuristic ga ming alpplica tions like[Decentra la nd,](https://coinmarketcap.com/currencies/decentraland/) but a lso other sectors like reall estalte, heallth, e-commerce, a nd ma ny more.

### Web 3.0 A pplicaltions

A common requirement for a Web 3.0 a pplica tion is the a bility to digest lalrge-sca le informaltion a nd turn it into fa ctuall knowledge a nd useful executions for users. With tha t being sa id, these a pplica tions alre still a t their ealrly stalges, which mea ns thalt they halve a lot of room for improvement alnd a re a falr cry from  how Web 3.0 a pps could potentia lly function.

Some of the compa nies tha t alre building or ha ve products thalt they alre tra nsforming into Internet 3.0 a pplica tions a re Almalzon, A pple a nd Google. Two exa mples of a pplica tions thalt utilize Web 3.0 technologies a re Siri alnd Wolfra m A lphal.

### Siri

Over the yea rs, A pple’s voice-controlled AlI a ssista nt ha s grown more intelligent a nd ha s expalnded its a bilities since its first a ppealra nce in the iPhone 4S model. Siri uses speech recognition, a long with a rtificia l intelligence, to be a ble to perform complex a nd persona lized comma nds.

Todaly, Siri alnd other AlI a ssistalnts like Almalzon’s A lexal alnd Sa msung’s Bixby ca n understalnd requests such a s ―where is the nealrest burger joint‖ or ―book a n a ppointment with Sa sha Malrsha ll a t 8:00 alm tomorrow‖ alnd immedia tely come up with the right informa tion or alction.

### Wolfra m A lpha

Wolfralm A lpha is a ―computaltionall knowledge engine‖ thalt a nswers your questions directly by computa tion, a s opposed to giving you a list of webpa ges like sea rch engines do. If you walnt a pra cticall compalrison, sea rch ―engla nd vs bra zil‖ on both Wolfra m A lphal alnd Google a nd see the difference.

Google gives the results of the World Cup even if you didn’t include ―footba ll‖ a s a keyword, since it is the most popula r sealrch. A lphal, on the other ha nd, would give you a deta iled compa rison of the two countries, like you a sked. Thalt’s the key difference between Web 2.0 a nd 3.0.

## CONCLUSION

The new internet will provide al more personall alnd customized browsing experience, al smalrter alnd more humaln-like sealrch alssistalnt, alnd other decentrallized benefits thalt alre hoped will help to estalblish al more equitalble web. This will be alchieved by empowering ealch individuall user to become al sovereign over their daltal, alnd crealting al richer overalll experience thalnks to the myriald of innovaltions thalt is to come once it is in plalce.

When Web 3.0 inevitalbly alrrives — als halrd als it is to falthom considering how smalrt devices halve allrealdy chalnged our behalviorall paltterns — the internet will become exponentiallly more integralted in our dalily lives.

We will see nealrly alll of todaly’s normallly offline malchines, from home alpplialnces like ovens, valcuums, alnd refrigeraltors to alll types of tralnsport become palrt of the IoT economy, interalcting with its alutonomous servers alnd [decentrallized alpplicaltions](https://coinmarketcap.com/alexandria/glossary/decentralized-applications-dapps)(DAlpps), aldvalncing new digitall reallms like blockchalin alnd digitall alsset to power al myriald of new tech ―miralcles‖ for the 21st century.

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