AUTONOMY
Blockchain Cloud for Autonomous Vehicles
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AUTONOMY Overview

What is Autonomy

AUTONOMY is a blockchain based cloud network which brings all self-driving vehicles online so that they can exchange data and transactions with each other, with mobile apps on our smartphones, with road infrastructure sensors and with other third parties in an extremely secure, decentralized and open way.

How it works

The autonomous car connects to the Autonomy Private Cloud, similar to how smartphones are always connected to the internet. The protocol through which vehicles connect to the cloud is secured through blockchain.

The vehicle can be controlled to go anywhere through smartphone applications built on top of Autonomy. The vehicle can recognize and interact with other vehicles on the network and it can also exchange data with the smart city infrastructure such as traffic lights, road works, road status, accident reporting, route planning, driving conditions.

Our company has purchased and built a research autonomous vehicle (not fully self driving yet), which we have connected to our private testnet. Through our Autonomy mobile app we have been able to request our vehicle to drive from an original location to a pickup location, where it waits for the passenger to get on board and then drives off autonomously to the destination.

These tests and demos have so far been done in private car parks whilst we are waiting for the California Department of Motor Vehicles approval to test on public roads. The first step of establishing and securing the connection between the autonomous vehicle and the smartphone was a success and we have proven that only the owner or the approved passenger of the vehicle can send requests to it, all other requests being ignored by the blockchain node network.

Why Autonomy needs to exist?

Autonomous cars are, at the moment, similar to computers in the 1980s, when there was no internet, no network to connect them all. They are being built and developed so they can work on their own and do the job of driving well. But they are not being connected to one – another or to any network. They are not learning from each-other, they do not communicate and interact between themselves, with our smartphones and with the roads they drive on.

Autonomy is the blockchain secured network where such data exchange can take place.
Above: our first Autonomy self-driving research vehicle, which we already connected to our blockchain, a test mobile app and can already be fully controlled by the registered owner.

Below: our second Autonomy self-driving vehicle being outfitted with sensors and cameras. It’s fully electric and it’s aimed at the delivery industry. Right: a rendering of what it will look like after it’s ready.

Following is a list of scenarios and applications that can be enabled with AUTONOMY:
Scenarios: Vehicle to Smartphone

- Request and Pay for any transportation services provided by autonomous vehicles.

- Control your car and ask it to go from point A to point B

- Give it a “task”, such as “go to pizza restaurant, wait for staff to load the food, and bring it back”, or “pickup person B from location C”.

- Never run out of fuel – send your car for a gas refill / recharge. Let it find, reserve the and pay for the charging station’s cost all on its own. All securely through blockchain.
Scenarios: Vehicle to Smartphone

- Autonomy prevents hackers from taking control of a vehicle. The owner and the passenger are both authenticated and validated through blockchain. Only the passenger can open the doors and get inside. **Security and decentralisation are the major focus of Autonomy.**

- Parking: your car reserves a space, pays for it and parks itself 20 blocks away after dropoff.

- Insurance: cars can be “witnesses” to accidents. A smartphone app can extract the camera and sensor feed and present it into a readable format for solving insurance claims.

- Shared ownership: 10 friends can buy and share 3 cars to cover all of their transport needs.
Scenarios - Vehicle to Infrastructure

- Traffic lights: they can adapt depending on the type of traffic building up.

- Intersections / extra lane openings: depending on traffic, more lanes can be converted to handle traffic towards one direction at rush hours.

- Road status: cars can report hazards on roads, accidents, driving conditions, weather.
Scenarios - Vehicle to Infrastructure

- Route planning & reservation of routes – if too much traffic is estimated, the road could signal to “take a different route”: “this road will be very busy tomorrow at 8 am”.

- Road openings and closures: the roads can “announce” to the cloud that they will be closed for a period of time. New roads are automatically added to the cloud.

- In case of an accident, the car automatically sends information to emergency services.
Emergency vehicles: emergency vehicles will broadcast to cars their path and autonomous cars will move out of the way seconds in advance for optimum speed. Police cars will be able to stop any self driving car immediately through Autonomy.

Fast track: pay the other cars to move out of the way and let you go through traffic faster.

Learning: data from an accident is shared with other vehicles so they can learn the lessons without repeating the same mistakes.
Car Trains: Cars can go a lot faster if they “link-up” and drive inches from one-another.

Network effect: cars constantly learn from each other, improve their driving habits and adapt to changes. They improve the maps and interact with third party apps through Autonomy APIs.
AUTONOMY Overview

Problem it solves

The automotive industry is heavily monopolized by giant corporations, who are developing self-driving vehicles in high secrecy without sharing any data with others. They’re not even creating their own network for having these cars communicate with each-other, let alone sharing that network with other manufacturers.

These giant corporations are patenting every new piece of technology they develop. AUTONOMY changes the status quo by building a decentralized, free, open, secure, and trustless network solution for the benefit of all.

Available market

Autonomy enables countless Mobility as a Service (“MaaS”) applications, which is a market estimated at over $1 trillion by 2030. Autonomy will act as a broker of transportation services and connect other businesses which have transportation needs to. Examples might include:

- Insurance can be lowered to a fraction of what it is today due to vehicles collaborating and taking the human factor out of the equation
- Better maintenance – sharing maintenance records for car models so next time you get a car you know exactly what to expect to pay in maintenance over the years.
- Chat, video conferencing applications for people in one car to talk to people in other cars.
- Google Docs suite of apps where, on the way to work, I can collaborate in working on a presentation with co-workers in other cars, in real time.
- Deliveries: everything we own and use has been manufactured somewhere else and delivered to us.
- That transportation can include trucks, vans, cars, all driven by people at the moment, all being disrupted by self-driving vehicles in the near future.
AUTONOMY Overview

There are 300 million trucks worldwide covering over 1.2 trillion miles every year. There are over 1 billion personal cars on the road today.

All of these have a driver behind the wheel. All of these will stop having a driver behind the wheel in the very near future. And those that will do, have nothing connecting them one to another, or to the roads, to our smartphones and web dashboards. This is what Autonomy can fix.

These numbers will change significantly when self-driving electric vehicles can drive 24 hours a day, without ever getting tired, with no errors, no monthly salary and benefits, with very low insurance and all the other advantages. The revolution in transportation is already taking shape and it will provide significantly cheaper and more reliable transport services for people and goods.

Uber and Didi provide over 20 million ride-share rides every day. They charge 25% of the cost of the ride, on average. The rest of the 75% goes to the driver. If you have self-driving cars, under the same conditions, Uber and Didi could provide transportation 4X cheaper and still have the same revenues and profits.

Our lives will be significantly changed by such access to cheap, safe, reliable transportation. But we need to make sure that, just as the internet is free and open for anyone and not controlled by one corporation, in the same way, the Internet of self-driving vehicles, Autonomy, is decentralized, free, open, accessible and secure for everyone.

When it will launch

The AUTONOMY Blockchain Cloud is already in development. In September 2018 our company bought and configured a Level 4 capable autonomous research vehicle, a hybrid Lincoln MKZ.

We successfully connected it securely to our testnet blockchain node, to a processing server and to our Autonomy ride-hailing mobile app (available on the app stores for Android and iPhones - screenshots on next page); we made the vehicle navigate (in a private car park) to any location that the app requested it to go, picking up a passenger and then driving off autonomously to a destination also set on the app.

Although the launch of the mainnet is still months off, our progress has been incredible and we have conducted demos all around California and even shipped the car to South Korea for demos and trials with interested partners.

We aim to have the testnet available in Q3 2019 with the mainnet available to other developers in Q1 2020 and publicly available in Q2 2020 or sooner.
AUTONOMY Overview

What is the Autonomy token (ATNMY)

The Autonomy token is a utility token which can be used for exchanging services on the Autonomy blockchain, such as:

- Pay for transportation services provided by autonomous vehicles, for parking, recharging, insurance and other services
- Receive ATNMY tokens for sharing traffic data with the smart-city infrastructure or other traffic participants (this is completely optional; data is aggregated & non-identifiable)
- Purchase access to above traffic data to improve the road conditions & receive alerts

The Autonomy token is not a security, an investment or a share in the company building Autonomy. It is a utility token, certified by a reputable law firm in Singapore as being compliant with the Singporean Law with regards to Utility Tokens. It DOES NOT pay dividends, interest and it does not offer any rights to ownership or decision making in the company building Autonomy. The token will be used and exchanged for services provided on the Autonomy blockchain network.
AUTONOMY Mobile App Overview
Who is building AUTONOMY?

Autonomy International Business Pte Ltd

is the Singapore registered company building the Autonomy technology. The founding team is the same as the one who founded SoftBit Technologies Inc, a California C-corporation which has been providing software for on-demand transportation services (think competitors for Uber, Lyft, Didi, DeliveryHero, LalaMove and many others). Initially founded in Bucharest, Romania, the team and company have been active since 2009, getting into the transportation space in 2011.

Over the last 8 years, the company has provided end-to-end mobile applications and IT solutions to many transportation startups in ride sharing (carpool apps), taxis & limo ordering, ride hailing (like Uber & Lyft), medical transportation (ambulances), trucks for moving furniture and packages, food ordering, courier services, on-demand security guard dispatching, on-demand car mechanic services and many, many others.

We have a team of 20 highly skilled developers with over 140 years of collective development experience. We maintain offices in Los Angeles, California and Bucharest, Romania and have clients in 12 countries and in 25+ cities. Our company has processed a total of over 150 MILLION ORDERS for our apps and our clients’ apps. We started working with NVIDIA and their self-driving vehicle accelerator 18 months ago. We already have a test vehicle operating in California and are waiting delivery on the second one, aimed at the delivery industry. With these, we can prove vehicle-to-vehicle communication and vehicle-to-smartphone data exchange too.

Financial Highlights
- 400% growth y/y over the last 3 years
- Profit margins of over 60%
- Positive cash flows
- Zero debt obligations

Apps Highlights
- 4.5M+ combined apps downloads
- Rated 4.8 stars out of 5 on app stores
- 150,000 orders processed a day
- Used by 20,000 drivers every day
- Over 150 MILLION orders in the last 7 years
- $4 million invested in two of our spinoff projects, from which we exited 3 years ago
The world is getting ready for a big revolution in transportation: autonomous vehicles. There is no doubt they are going to be transformative for our society and they will bring about a significant change in the way we travel, making transportation cheaper and freely available to everyone.

A few things to note regarding the current trends in Autonomous Vehicles (AVs):
- There are over 94 initiatives, public and private, in China alone, with regards to self driving cars.
- All over the world, universities, local governments, research centres and most importantly, corporations, are all investing heavily and focusing on testing real self-driving vehicles.
- Uber ordered over 50,000 Volvo XC90 SUVs for full deployment on the streets of self-driving cars. Google ordered 86,000 Jaguar SUVs to do the same.
- California is passing legislation that would allow cars without a safety driver being present at all times. This is a very aggressive push towards adoption. Also in California, ride-share companies can now transport passengers in self-driving vehicles if they don't charge them for it.

In conclusion, these vehicles are already being tested on public roads. hardware and software are converging to make them safer, faster and easier to use and maintain (let alone to park) compared to us driving them. Legislation is being passed all around the world to bring these cars, busses, vans and trucks to public adoption as soon as possible.

Autonomous vehicles are the future! AUTONOMY is the blockchain platform which connects them all together.

Why build Autonomy?

Today's transportation industry is composed of opaque monopolies such as car manufacturers who are all working on their own self-driving car technology, specifically the part that controls how a car drives itself. These car manufacturers are patenting everything they can in order to prevent innovation and secure a long term competitive advantage. They are growing their self-driving vehicle ambitions in a very silo-like manner, without considering or planning for their cars to connect and talk to other cars, smartphones or the road infrastructure.
Executive Summary

This is understandable since for years, most of the work needed to make self-driving vehicles a reality was focused on actually getting them to drive on their own, recognising obstacles, other cars and pedestrians and making them as safe as possible. Another reason why this hasn’t been at the forefront of the car manufacturers’ mission has been the fact that for a number of years to come we will still have regular cars alongside the self-driving ones sharing the roads.

However we see things differently and think these cars should be connected to the internet, to the Autonomy Cloud, your smartphone and to each-other.

We regard this is a change as big as:

- When personal computers became connected through a network giving birth to the internet as we know it.
- When mobile phones connected to the internet and started sharing data one with the other => giving birth to app stores

AUTONOMY is the internet for self-driving vehicles built on top of the blockchain.

We enable self driving vehicles to connect to one Open, Free, Secure, Decentralised and Trustless Blockchain based network, for all the reasons why we would want security and decentralisation in something all of us use every day.

The open industry of blockchain-connected self-driving vehicles that Autonomy is developing will greatly impact the status quo, and will give way to innovative solutions to several of today’s pressing problems: transportation costs will be reduced, the insurance industry will become a much cheaper option, people and goods will be moved a lot quicker and cheaper across larger distances.

Traffic congestion can be eliminated through optimisation, and parking spaces will be freed. Imagine no parking tickets, wouldn’t we all love that? Finally, less cars will be bought. Less people will lose their lives in a car accident.

The countless applications that can be built on top of Autonomy will become great opportunities for tomorrow’s app developers. The Autonomy App Store will hold, verify and sell all these to countless cars, owners, insurers, local road authorities and many other parties. AUTONOMY will empower a new generation of app developers.
Executive Summary

In addition, such a system can influence the governmental actions (municipalities) in the mobility sector. Having a live grid of all public transport, waste management, and medical services will be made possible. Vehicles live on the streets and supplying municipalities and institutions with transport services from the community could open up new possibilities for a sustainable, green future.

Autonomy plans to setup and run a delivery service using self-driving vehicles in Los Angeles, California by the end of June 2019, which will be the pilot program to test AUTONOMY and our blockchain cloud network publicly. Because of the work we did with our clients in the past, we already have interest in launching self-driving cars on the roads with ride-share and taxi companies in both the US and Europe.

Our company has already been accepted to NVIDIA’s self-driving accelerator and we’ve had access to their software and hardware solutions for self-driving vehicles for over 18 months. We have strong connections with BMW through their iVentures investment fund, and are in discussions with brands like Volkswagen, Renault, and Toyota and the hardware vendors Qualcomm and Bosch. Further, our company will reach out to local authorities starting with California to work with their Future of Transportation programme, where we took part in a presentation in 2017.

We have our current platform of software that is well suited for a variety of business use-cases. We have the experience, the team and a good start in terms of partnerships. We have already connected our first self-driving vehicle to our Autonomy blockchain, mobile application and we have proven that we can share data securely through blockchain authentication of both owners, clients and vehicles. We believe Autonomy will play a transformative role in the industry and we are well positioned to become the leader platform in this space.
Vision & Mision

Our vision is of a future in which autonomous vehicles (cars, trucks, boats, drones) will be able to provide transportation services of all kinds depending on demand, without human interaction.

Our mission is to “Create an open, secure and decentralised internet and blockchain protocol for autonomous vehicles to communicate with one-another, with our smartphones and the road infrastructure. Open an app store for allowing interaction with these vehicles through our smartphones.”

Problem

Autonomous vehicles are on the roads today. They don’t talk to one-another. They’re not learning from each-other. They cannot be controlled from an app on our smartphones. Their security is a joke, with white-hat hackers proving how easy it is to take control of a car that’s just connected to the internet. Yet there are only a few players in the transportation industry, dominating the current auto industry with some software companies entering the space of self-driving software and, most recently, hardware (see Google building their own Lidar hardware).

There are a few main problems we are addressing:

Individualistic approaches of the entire industry:

Everyone, from car manufacturers to Google, Uber and FedEx even, is working on their own software and hardware and not communicating with the others. They’re not sharing data and learning from each-other. The Uber fatal crash involving a self-driving vehicle will provide Uber with lots of data from which they will learn, fix their software and come out saying “we’ve got a much better solution because of the hard lessons we’ve learnt”. Problem is they’re not going to share their conclusions with anyone else. Toyota or BMW will likely have to go through the same scenarios (hopefully not real-life fatal accidents, but that’s also likely) to see what lessons they can learn and how to improve their software. This, we find, is ridiculous. These companies are literally risking our lives because they are unable to collaborate on the most basic of things: safety.
Centralisation:

There are huge barriers to building the hardware or the software for self-driving vehicles, or even deploying them onto the streets for testing. Only a few companies can afford this right now and they are all taking a very monopolistic approach in rolling their products onto the market. They are centralising power through patents, through partnerships with ride-share apps like Uber, stopping others from innovating and aiming to CONTROL the data and market. A look at the patents filed by these companies in recent months paints an ugly picture: it’s an arms race for patents, building barriers of entry for other companies. Centralisation leads to misuse of user data, to abuse by charging more just because they can, to differential treatment because they know who you are and where you live.

We believe in the exact opposite: decentralisation. Allow all cars, from whatever manufacturer communicate with one-another, to learn, to alert each other, to move out of the way of an ambulance in time or move themselves if a fire-truck needs access to a space next to a building. We believe in open-source code and allowing other developers to build on top of our platform and have the community decide which software is best for them and their self-driving cars.

Which ride-share app is best to interact with, which routing software is the best to getting you home quick, which insurance provider is the best for your usage, which parking app finds the closest parking locations for you. We believe in allowing all users to decide if they want to share (anonymised) data and allowing third parties to use that data for improving safety, traffic patterns, road closures, as long as it’s useful just for such purposes.
Problem

Trust:

A closed, profit-focused corporation with a history of abuse towards its customers is one that no one can trust. We will level the playing field through our blockchain protocol.

- You'll be able to trust that the car which is in front of your building is there to pick you and only you up. No one else can get inside it because you and the car are both authenticated on the blockchain through a “Dispatch ID”.

- You'll be able to trust that no one can monitor and use your location in real time to gather data about you and use it against you (to charge you more). We have the history of prices embedded on the blockchain and that leads to transparency. You don’t pay more because the software thinks you CAN pay more.

- Trusting apps, service providers, businesses that facilitate transportation of goods and others will be done through a review and trusting mechanism built on the blockchain.

People feel disempowered when dealing with large corporations; courier companies providing unsatisfactory but expensive services, privately owned taxi companies abusing passengers with progressive charges while paying drivers flat fees, insurance and leasing providers being opaque about their pricing algorithms are all spinoffs of lack of competition, transparency and openness in the transportation sector.

Autonomy levels the playing field and opens the opportunity for a new generation of entrepreneurs to build use cases around autonomous vehicles.
Opportunity

Connecting even a small amount of self-driving vehicles that will hit the roads soon is a great opportunity on many fronts:

- The benefits of the network are greater than the sum of its parts -> in this respect, even two cars on the roads can learn from each other. 20 self-driving vehicles will provide 20 times more data and lessons and conclusions on how to improve the software. 20,000 cars connected to Autonomy would mean that the advancement in learning is so great that likely 99.9999% of all possible scenarios of accidents can be mapped and avoided within 12 months of having them on the streets. This will unlock a lot of value in saving lives, lowering insurance premiums, reducing traffic and improve the speed at which we get to our destination.

- The transportation services is a multi-trillion dollar industry at the moment. If we take away the need for drivers, the human error factor and its limitations, we can significantly lower the costs of transportation. Most of it currently goes to fuel and human drivers. Lowering costs is great for everyone and it will be disruptive of other industries too. It will help all e-commerce websites which ship products all over the world. It will save a lot of our time, either because we are working whilst being driven somewhere, or because we don’t need to drive our loved ones anywhere anymore. The time saved and increased efficiency and focus towards our work will be invaluable.

- Converging the above, we will likely see a big growth in transportation services as you need them, whee you don’t need to own a car, a garage, or have parking, fuel and maintenance costs anymore. We will “pay-as-you-go” for the miles travelled at a very reduced rate. This will only increase demand. When this happens, Autonomy will benefit from a rise in demand for its applications, services and tokens. Autonomy has the unique opportunity to disrupt and push forward the transportation industry and can benefit greatly from all those miles travelled, paid in the Autonomy tokens.

In addition, car manufacturers are racing to buy software companies in the self-driving space, realising they have no other way but to innovate (e.g. Ford, GM, Mercedes-Benz). Ride-sharing companies such as Uber and Lyft are working on their own versions of self-driving technology and even hardware. NVIDIA, AMD, INTEL, MobilEye are working on the hardware and building the software architecture for developers to interact with their hardware. Tesla wants to be the Apple of self-driving cars, controlling both the hardware and software.

The world is preparing for a future where autonomous vehicles (cars, trucks, boats, drones) will be able to self-organise based on human offer and demand.
Opportunity

The ability to link all application developers and service providers under the same open language and protocol (manufacturers, fleet owners, service providers: delivery, insurance, energy, etc.) will be a completely new blue ocean of opportunity.

Autonomy stands to benefit from great economies of scale in terms of data gathering, accident prevention, traffic, parking optimisation, reduced pollution, lower transportation costs for everything.

Autonomy’s own app store will stand to generate billions of dollars in revenue for the company and for the developers publishing apps, similar to what Apple’s App Store did when it invented the smartphone.

Solution

Autonomy is developing a blockchain based internet for all autonomous vehicles (AVs). The Autonomy blockchain brings AVs to a common platform irrespective of maker, user, or owner and enables the transparent exchange of information between all vehicles, users and other third parties.

The blockchain is the layer that handles the security of identities, transparency of transactions, the integrity of the data and access to all resources on the Autonomy platform. A car cannot communicate with another car if it’s not registered on Autonomy. Similarly, the owner of a car needs to know exactly how many rides his car provided to others in a given day, how much he earned and other relevant data. Only he will be able to access that data because he’s registered as the owner of the car. If he changes, a record of the change will be stored on the blockchain. Maintenance records can also be logged and accessed only through the blockchain authentication protocols, making data incorruptible, transparent to the party with the rights to view it and fully secure.

Autonomy also links all application developers and service providers under the same open language and protocol: developers could build apps for manufacturers, fleet owners, service providers, delivery companies, insurance, energy and many others, with APIs available for every sector and need, to inter-operate on a Turing-complete infrastructure. The end result will be that Autonomy stands to become a widely used platform and protocol, similar to the internet we have today, with opportunities becoming available for a wide range of developers and users rather than being concentrated in the hands of a few companies.
AUTONOMY
Concept & Architecture

AUTONOMY Chain handles requests marketplace (bid/offer) and value exchange.

End-User Needs
- Personal Ride/Car Sharing (a la Uber)
- Delivery Services (a la DHL, deliveroo)
- Professional Services (home care, laundry)
- Public Transport (buses, trains)
- Utilities (waste management)
- Utilities (waste management)

Ask Interfaces (app/www)
- Route Planning
- Road Status
- Weather Information
- Credit/Escrow Lines
- Energy/Gas Providers
- Distributed Ownership
- Vehicle Rentals
- Insurance Quotes
- Servicing Quotes
- Crisis Management

Ask API (Open Marketplace)

Private
- Individuals and Association
- Companies and Corporation
- Governments and Public Institutions

Public
- Matchmaking Algo
- Predictive AI
- Fleet Management
- Fulfillment
- Special Utility
- Bikes
- Boats
- Planes

(Autonomous) Vehicles

Public
- Delivery Services (a la DHL, deliveroo)
- Professional Services (home care, laundry)
- Public Transport (buses, trains)

Private
- Personal Ride/Car Sharing (a la Uber)
- Delivery Services (a la DHL, deliveroo)
Autonomy, through its blockchain and off-chain cloud network has the potential to become the standard protocol for all self-driving vehicle-to-vehicle, vehicle-to-infrastructure and vehicle-to-smartphone communication and interaction.

The potential is vast. AUTONOMY has the capability to bring the individual elements of the transportation sector together, coordinate and operate them like links in a chain strengthened by blockchain technology.

All of the separate, independent services and applications from the use cases mentioned in this whitepaper can communicate and interact on top of a transparent, secure, real-time network.

The best thing about AUTONOMY is that it will harness this potential and make it available to everyone. Information will be available to all users using open APIs, so that any third party independent service providers can operate any service, anywhere, having a full stack plug-and-play solution.

Instead of re-empowering an Uber or a DHL with blockchain technology, Autonomy is creating the cloud solution and blockchain technology to empower any team to open up a local network in their town and operate it, on the same chain, communicating with any other transportation service provider on the planet.

The total addressable market for the new economy that autonomous vehicles will enable goes well beyond $1 trillion per year, globally. The potential to capture some of this value, while enabling other entrepreneurs, developers and businesses to create opportunities is what Autonomy’s goal is.
“Global “MaaS” (Mobility as a Service) revenues will exceed $1 trillion per year by 2030. Its anticipated disruptive impact on traditional transportation modes like car ownership, buses, trains, aviation, taxis, and rental cars is stirring up not just the automotive but also the entire transportation industry.” - ABI Research

Autonomy is relevant to the entire transport sector and more. Everything that gets moved from place A to B, everything that interacts with our vehicles, will be able to do just that through Autonomy. Parking structures, charging stations, mechanics, businesses which deliver any kind of product, dispatchers of various service providers to certain locations, all of them can build apps and use Autonomy to source transportation in a very easy, secure and transparent way. As long as something needs to get from A to B and that something is a function of weight / volume and A <-> B is distance / time, there is a use case for Autonomy.

The other supporting services also will come under the purview when Autonomy is operational. The e-Commerce shipping, taxis, ride-sharing and ride-hailing, freight shipping and many others are worth trillions annually and are so far run by large companies with centralised control, information, and profits.

Autonomy will be used by a large number of established industries and it will also help create new ones, very similar to how the internet created tremendous opportunities and value.
AUTONOMY targets the following market segments:

**Businesses:**
- Any business which delivers or ships products to end consumers or to other businesses, especially online / e-commerce businesses;
- Other businesses who did not deliver anything in the past but could benefit from affordable delivery costs: retailers of any kind (groceries especially), dry cleaning establishments, courier businesses and more: anything we have to go out and buy and bring home today can be shipped through Autonomy for very low costs.
- Parking businesses, electric charging stations, insurance businesses, car washing, car dealerships, mechanic and maintenance and a variety of other businesses which will provide services to autonomous vehicles.
- Autonomous vehicle manufacturers: similar to Android and iOS, Autonomy can become the main option for a self-driving car to be connected to our smartphones, the road infrastructure and to other vehicles. We envision car manufacturers will want to work with Autonomy to have their vehicles ready and connected to the network from the moment they are built. We are working hard to establish partnerships in this industry.

**Consumers:**
- Everyone can tap into Autonomy for personal transportation, for sending packages or even tracking how a car picks your children and takes them to school, soccer practice and any location.

**Local authorities / governments:**
- They can tap into Autonomy and analyse and improve traffic, charge road tax, issue citations, monitor pollution, congestion, accident reporting, signal road works.

**Entrepreneurs developing Autonomy apps:**
- Entrepreneurs who want to seize the opportunity for developing third party applications on the Autonomy App Store.

We aim to work within all these target segments to create a community of service providers, consumers and entrepreneurs / developers. We are creating a new internet and the opportunities abound for all the above segments to create and extract value from the Autonomy network.
AUTONOMY will generate revenue as follows:

**Transaction fees:**
Taking a percentage fee of all financial transactions (payments) on the blockchain, for a successful delivery or transportation service provided to any person or package. Uber and Didi provide over 20 million rides every day for passengers only. We aim to provide a lot more and reach 100 million transports per day through product deliveries.

**Data access fees:**
Taking a percentage fee of specific data transactions on the blockchain, for a successful exchange of real-time information; local authorities will be the main beneficiaries and customers for this data, which will be anonymised and optional to share by the vehicle owner. The owner gets the most of the reward (in tokens) whilst Autonomy receives a commission of that transaction.

**App store:**
Taking a commission of the premium apps sold on the Autonomy app store, similar to what the Apple app store charges (30% for digital goods for example).

Uber can allow their app to communicate with Autonomy if they need more autonomous vehicles in an area to cope with demand. They will pay the owners of the cars a fee and Autonomy will receive a percentage of that too.

**Advertising:**
Inside the vehicle advertising based on your destination is a valuable potential ad market.

**App store / Service discovery advertising:**
When searching for a specific app or for a service on Autonomy, we can serve ads very similar to what Google does: “the closest and cheapest parking spot” or “maintenance for my self-driving car”, “insurance for vehicles doing over 50.000 miles / year” are all search quotes for finding the right list of service providers. We can charge for an ad to pop-up at the top in a clearly sponsored way or we can charge a referral fee for a customer buying a service from a provider we recommended.
Why Blockchain

There is an intrinsic need for cars to communicate with each other, with our smartphones, internet and with the infrastructure using an Open Standard and Protocol, transparent, trustless and secure, regardless of car manufacturer, software developer or country.

To emphasise why Blockchain is the answer consider the following scenarios:

- **Passenger - Vehicle Identity verification and matching**
  You’re coming out from a large event at the same time as lots of other people. You’ve already requested a self-driving car and a few of them, similar model and colour, are waiting outside to pickup their passengers. How do you know which one to get into? How does the car know you’re the passenger they’re supposed to pickup? Blockchain can identify you and the vehicle and can match you up so you don’t get into someone else’s car and taken to an unknown destination. Consider sending your son to school or soccer practice and knowing with certainty that he’s being taken to the right location and not somewhere else and that he’s safe at all times.

- **Crypto payments. Transaction validation. History of prices.**
  A standard use case would be paying with cryptocurrencies in Autonomy and in the apps interacting with Autonomy. Validating these transactions. Keeping a record of the prices and having full transparency on what others have paid for the same services.

- In a few short years, the emergency response vehicles are going to have a lot of trouble getting through autonomous vehicle traffic if something like Autonomy doesn’t exist simply because there is no current effort for recognising, interacting with and complying with requests from such vehicles. Autonomy knows for certain which one is a police / ambulance vehicle, how to best plan their route to get to a location and what signals to send to all cars in their way to optimise for speed.

- **Owner records. Beneficiary authentication. Maintenance records.**
  Autonomy knows who the owner of the car is. It knows that if the owner decides to supply his autonomous vehicle to the Autonomy network when he’s not using his vehicle, then he will have to be paid by the Beneficiaries of that transportation service taking place. Imagine seeing all maintenance records for all cars and comparing them to choose which car would make most sense for you before buying it. Interactions with other blockchains is also possible so that a startup such as VINChain can supply and retrieve data from Autonomy.
**Why Blockchain**

- Data sharing. Data integrity. Data rewards.
  Autonomous vehicles can collect a lot of data from their environment. They can share that data, in an anonymised, secure way with the local municipalities who can fix the roads, or other vehicles to avoid an accident scene or even traffic lights. That data has to have integrity and not be corruptible for best results. That’s easily achieved through blockchain. Rewarding the vehicles who share data can easily be done through our token structure.

There are many other scenarios and use cases for using blockchain. The main advantages of decentralisation, security and transparency have been covered already. Having a consensus mechanism that ensures no one party controls all data gives Autonomy a real chance of becoming the internet of autonomous vehicles: open, secure, and decentralised.

There are a number of innovations in our blockchain worth mentioning:

- **Proof of Delivery**
  Proof of delivery stores the GPS data from a trip, along with data about the owner of the vehicle, the beneficiary of the service and others. It has a timestamp and a confirmation that the service has been provided. In the long-term, the validation for “delivering” the service can be done by other nearby vehicles too. Proof of Delivery is the confirmed and verified information about the delivery of a person / package / service with all the relevant data to back it up. All transportation services will have Proof of Delivery built in.

- **Dispatch ID**
  The sensitive data regarding the Proof of Delivery will only be accessed by the parties who have interest in it. No one else can see the data without proper authorisation. That authorisation comes in the form of a Dispatch ID, which basically identifies you as a party to that service / transaction.

  Such parties could be: The owner of the vehicle. The beneficiaries of the service (if I send my son to school, I can see him on a map getting there, but other people cannot track him - they don’t have the relevant Dispatch ID). Government authorities with legal, proven interest. Decentralised applications that need to interact with the vehicle (parking sensors, charging stations, businesses who are making a delivery). Fleet operators who monitor the vehicles on their network.
Why Blockchain

The decentralized data storage improves security and the technology becomes publicly verifiable, which enables integrity and transparency. Additionally, it provides trust, redundancy, safety, and privacy protection while the infrastructure is supported by decentralized node operators.

Two critical needs that can ONLY be met through blockchain technology are:

- **Integrity**: every user can be sure that the data they are retrieving is uncorrupted and unaltered since the moment it was recorded.
- **Transparency**: every user can verify how the blockchain has been modified over time.

These inherent features of blockchain are ideal for Autonomy, as it is a platform that is open to everyone without discrimination. Blockchain really is the only way we will keep control of our data from autonomous vehicles and empower only the parties with a real, proven interest, to see and use any of it. Governments will have to prove their interest in seeing your trip details and that privacy layer alone is enough to build Autonomy on top of blockchain.
Our Blockchain Technology

The blockchain solution that is the best fit for our project is Hyperledger Fabric. Hyperledger is best described as an infrastructural hub for open industrial blockchain projects. Built and maintained by the Linux Foundation, with real world banking and infrastructure applications, Hyperledger Fabric allows us to develop and plan ahead with confidence that the technology is stable, scalable and proven, that support is well established and documentation is thorough and complete.

The Hyperledger Fabric blockchain framework is defined by several key features make up the perfect technology stack for us to build the Autonomy Chain:

**Modular framework architecture**
which allows for lightweight application deployment and extreme levels of customization.

**Fabric Network Entities:**

- **Client** - acts on behalf of an end-user and creates and thereby invokes transactions.

- **Orderer** - provides a communication channel to clients and peers over which messages containing transactions can be broadcasted.

- **Peer** - maintains the ledger and receives ordered update messages from orderers for committing new transactions to the ledger.

- **Endorser** - special type of peer, its task is to endorse a transaction by checking whether it fulfills necessary and sufficient conditions.

**The concept of channels**
which allows for a sub-network of private communication to be created between two or more network members, without the need of engaging the main ledger. Channels keep transactions private from the broader network. Furthermore, collections can be established inside a channel, to keep data private between subsets of entities on a specific channel. Channels also ensure that all connected peers are delivered exactly the same messages with exactly the same logical order.
Our Blockchain Technology

Permissioned mode of operation

that does not require any energy consumption, based on Proof of Identity and Proof of Authority. This means that the blockchain network is private, participants are selected in advance and access to the network is restricted to these only. The mode of participation, permissionless or permissioned, has a profound impact on how consensus is reached.

Multiple interchangeable consensus mechanisms

The algorithm employed is “pluggable”, meaning that depending on application-specific requirements various algorithms can be used. For example, in order to deal with random or malicious replication faults, a variant of the Byzantine fault-tolerant (BFT) algorithms could be used.

Furthermore, channels partition message flows, meaning that clients only see the messages and associated transactions of the channels they are connected to and are unaware of other channels. This way, access to transactions is restricted to involved parties only with the consequence that consensus has only to be reached at transaction level and not at ledger level.

The idea for Hyperledger use of Practical Byzantine Fault Tolerance goes beyond asset-based systems. It takes the idea of an algorithm for consensus and uses it to distribute all sorts of technical solutions—not just the low latency, high-speed file storage solution it was originally built to provide.

The possibility of developing a currency

or digital token through smart contract code, known in Hyperledger as “chaincode”. Tokens can be used in internal microtransactions, between self-governing entities in a journalised mode and can endorse any other use case for which there is a need for value to be transferred.
Native support for private & confidential transactions

Fabric underpins a transactional network where all participants have known identities. Public Key Infrastructure is used to generate cryptographic certificates which are tied to organizations, network components and end users or client applications. As a result, data access control can be manipulated and governed on the broader network and on channel levels. This “permissioned” notion of Hyperledger Fabric, coupled with the existence and capabilities of channels, helps address scenarios where privacy and confidentiality are paramount concerns.

Identity validation through Hyperledger Indy

When talking about autonomous vehicles transporting people and being ordered around town through the cloud, being able to correctly establish and validate identity is paramount.

Because distributed ledgers cannot be altered after the fact, it is essential that use cases for ledger-based identity carefully consider foundational components, including performance, scale, trust model, and privacy. In particular, Privacy by Design and privacy-preserving technologies are critically important for a public identity ledger where correlation can take place on a global scale.

Hyperledger Indy is a distributed ledger, purpose-built for decentralized identity. It provides tools, libraries, and reusable components for creating and using independent digital identities rooted on blockchains and can seamlessly interoperate with a Fabric platform.
Our Blockchain Technology

Fabric Blockchain Integration of Autonomy Proof of Concept

<table>
<thead>
<tr>
<th>CHANNEL 1</th>
<th>CHANNEL 2</th>
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<tbody>
<tr>
<td>CP1</td>
<td>CP2</td>
</tr>
<tr>
<td>ATNMY NP1</td>
<td>01</td>
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<table>
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<tr>
<th>Hyperledger Fabric</th>
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<tbody>
<tr>
<td>P1</td>
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<tr>
<td>L1</td>
</tr>
<tr>
<td>L2</td>
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<tr>
<td>AV POOL</td>
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<td>AV OWNERS</td>
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Hyperledger Indy

<table>
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<tr>
<th>CLIENTS POOL</th>
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<tr>
<td>L1</td>
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<th>AV ONBOARDING</th>
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<table>
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<tr>
<th>OWNER REG.</th>
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<tr>
<td>L2</td>
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</table>
Our Blockchain Technology

Proof of Identity

is initially established in the registration and onboarding process which will be performed through the Hyperledger Indy DLT platform. This way every member of the network is certain of who and why it is interacting with.

Autonomy Token (ATNMY)

Sets public network policy NP1 and channel policies CP1 and CP2.

Network Policy NP1 sets up Ordering Service O1.

CHANNEL 1

Represents the private channel where Clients from the Clients Pool interact with the autonomous vehicles from the AV Pool. Both parties commit one peer to the channel, P1 and P2. Both P1 and P2 maintain private transaction ledger L1, which logs all transactions going on over CHANNEL 1.

CHANNEL 2

Represents the private channel where vehicle owners from AV Owners interact and get reports from autonomous vehicles in AV Pool. AV Owners commits peer P3 to the network and AV Pool has already committed P2. Peers can hold multiple channels and ledgers without compromising transaction privacy. P3 will hold ledger L3 and P2 will hold both a copy of ledger L2 and ledger L1.

CHANNEL 1 and CHANNEL 2 both have to validate each transaction with Ordering service O1, which will govern according to channel policies CP1 and CP2.

This setup keeps interactions and transfers of value and information between blockchain entities truly decentralized and provably fair, but not chaotic or anarchic, governing policies being enforced at all times by ordering services.

ATNMY has a relationship with all channels for business administration and has the role to validate all transactions in real time over every channel through NP1-O1.
Our Blockchain Technology

Hyperledger Fabric

MESH 1

MESH 2

MESH 3

MESH 4

GAS STATION

POLICE

CHANNEL
Our Blockchain Technology
An initial Ethereum ERC-20 ATNMY token will be created for funding platform development through an token generation event ("TGE"). This ERC-20 token will be exchangeable for the ATNMY-Fabric utility token that will fuel the Autonomy platform, once the project goes into production. On platform (production) launch, initial ERC-20 ATNMY token holders will be able to exchange their tokens for ATNMY-Fabric tokens at a fixed rate, benefiting from the cheapest possible rates for the transportation services available on our platform.

The ATNMY-Fabric utility token is mandatory for our project, as the Autonomy platform is a base for the exchange of services and data between vehicles, people and governing bodies. The use cases for an internal currency are many and range from instant repayment of vehicle owners and automatic recharging of vehicles to payment of road tax, fines if necessary and even pay-by-mile insurance.

ATNMY-Fabric tokens will also be used on the Autonomy App Marketplace, where third party developers and businesses will integrate their services on the blockchain platform, such as delivery services, shippers, movers, parking garages, etc.
Roadmap

2019

July

Public sale starts. Investors test the Autonomy app and remotely control an autonomous vehicle.

2019

September

Launch beta version of the mainnet for testing by Autonomy and others. Launch driverless delivery service in US.

2020

June

Launch public, stable mainnet. First rides paid with Autonomy tokens take place. New partners join.

2020

February

Car manufacturers test integration with Autonomy. Pilot programs with local authorities for smart city partnerships.

2020

July

Launch Autonomy public APIs, SDKs and private AppStore. Continue tests and partnerships. Grow. Quickly!

AUTONOMY

Planned milestones of the implementation
Roadmap

March 2018:
Started developing the Autonomy Blockchain, Autonomy Cloud and APIs for self-driving vehicles and mobile apps to be connected. The company is self funded at this stage.

July 2018:
We placed an order for a self-driving vehicle worth $350,000 to be built and delivered to our California office and we started to develop software for it would be delivered. The vehicle is crucial for understanding and proving to future partners how self-driving cars will connect to the Autonomy Cloud.

October 2018:
We received the autonomous research vehicle and started testing the software developed for it. Launched a proof of concept of a mobile app that can control a self driving vehicle remotely through the Autonomy Cloud.

November 2018:
Tested our autonomous vehicle on the private roads or car parks in California, connected to the mobile app and testing our future builds in contained environments. Starting to contact car manufacturers, consortiums, and local authorities to get them onboard as partners for Autonomy. Attended the following events with the team and the demo vehicle: Los Angeles Auto Show, Crypto Invest Summit, Automobility LA, LA Comotion and others.

December 2018:
Placed another order for a fully electric autonomous research vehicle custom made for delivery operations. The aim is to showcase Autonomy testnet, Autonomy mobile apps and the Autonomy Vehicle software to the courier and delivery industry to hopefully soon get trials and demos done in various states. We shipped our first autonomous research vehicle to Asia (South Korea, China, Japan) for demos with partners and investors.

January 2019:
Started the first phase of our private sale. Development the Autonomy chain continues.

February 2019:
Part of the team went to Asia for one month to demo the vehicle and meet with investors, exchanges and partners. We did demonstrations of the technology, we met with universities, car manufacturer and other important partners.

March - June 2019:
We will focus on fundraising efforts for the private sale. We are publishing our first Autonomy ride-hailing app for anyone to test. Work continues on the private alpha version of the Autonomy testnet.
Roadmap

**July 2019:**
Provide a way for investors and partners to test the Autonomy technology by logging in remotely from a PC or smartphone and giving commands to the autonomous research vehicle to move to different locations in a given perimeter. They will have access to cameras inside the car and outside to see in real time the movement of the vehicle as requested by the user.
Conduct a public token generation event (TGE) or initial exchange offering (IEO) if the private sale does not reach the hard cap for fundraising.

**September 2019:**
Launch a beta version of the mainnet for testing by Autonomy and other partners.
Launch a driverless test delivery service on the public roads of California, with full approval from the government. The service will deliver food from a few partner restaurants and will have a “safety driver” in the vehicle, but most of the driving will be done on its own. The customer will receive notifications through the Autonomy Delivers smartphone app and will pay with Autonomy tokens for the delivery service.

**December 2019:**
Opening test versions of APIs and SDKs for the Autonomy App Store for third party developers. Increase the fleet of delivery vehicles.

**February 2020:**
Car manufacturers are able to integrate the Autonomy Chain into their self-driving vehicles.
Local authorities start seeing the first results and benefits of pilot programs for Autonomy.
Initiate discussions with smart-city officials, car manufacturers and

**June 2020:**
Launch the public, stable version of the mainnet for Autonomy blockchain, Cloud and APIs SDKs publicly available for third party developers. The Autonomy App Store is privately available and accepts application submissions. First rides paid through the Autonomy token are taking place.

**July 2020 - onwards:**
Sign up as many partners and car manufacturers as possible to the Autonomy ecosystem to have autonomous vehicles roll out the factory floor already connected to the Autonomy network. We will also provide a seamless way for anyone buying an autonomous vehicle to register it on the Autonomy network even after the purchase.

We will scale the network, the number of apps available and the number of partners in the network, focusing on acquiring market share and becoming the secure internet network for autonomous vehicles.
Events

Below are some pictures from events where we presented the Autonomy vehicle:
# Token supply and distribution

AUTONOMY will issue an Ethereum ERC-20 token in order to raise funds for the development and promotion of the Autonomy Chain.

AUTONOMY will create a total of 4,500,000,000 (4.5 bn) ERC-20 tokens. 20% will be available for purchase throughout the steps outlined below. 28% will be available for community development & airdrops, partnerships with car manufacturers and other industry leaders, other private or public sales. 30% will be kept as a reserve by the company. 12% will be allocated to the development team and founders, with 1 year vesting schedules. 10% will represent the cost of marketing for the Token Generation Event, including advisors and legal structure. The ATNMY token will be listed for trading on all major exchanges after the TGE or IEO.

<table>
<thead>
<tr>
<th>%</th>
<th># of tokens</th>
<th>Allocated to</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.22%</td>
<td>100,000,000</td>
<td>Initial Private Sale amount</td>
</tr>
<tr>
<td>6.67%</td>
<td>300,000,000</td>
<td>Pre-TGE / IEO phase 1 (over a 8 week period)</td>
</tr>
<tr>
<td>11.11%</td>
<td>500,000,000</td>
<td>Initial Exchange Offerings IEOs or Public Sales</td>
</tr>
<tr>
<td>28%</td>
<td>1,260,000,000</td>
<td>Community Development Partnerships &amp; other Sales</td>
</tr>
<tr>
<td>12%</td>
<td>540,000,000</td>
<td>Development team including founders</td>
</tr>
<tr>
<td>10%</td>
<td>450,000,000</td>
<td>IEO Marketing, Legal, Listing &amp; other costs</td>
</tr>
<tr>
<td>30%</td>
<td>1,350,000,000</td>
<td>Company Reserves</td>
</tr>
<tr>
<td>100%</td>
<td>4,500,000,000</td>
<td>TOTAL</td>
</tr>
</tbody>
</table>
Autonomy “ATNMY” Token price

We aim to price the ATNMY token between USD $0.10 (10 cents) when the token generation event (TGE) or the initial exchange offering (IEO) begin.

Soft Cap is set at $5,000,000 USD.
Hard Cap is set at $35,000,000 USD.

Both ETH and Bitcoin can be used to purchase tokens in the private sale. For the public sale we aim to only accept ETH. The actual exchange rate between ETH and ATNMY token will be available at the time of the token generation event.

All tokens allocated for the public sale which are not sold during the TGE or IEO. Tokens from the private sale which are not sold will be allocated for community development, airdrops and other methods of getting user adoption for Autonomy. Team members will receive their tokens monthly with a vesting period of 12 months.

Use of Autonomy token (ATNMY)

<table>
<thead>
<tr>
<th>How to acquire AUTONOMY tokens</th>
<th>How to spend AUTONOMY tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase at the Token Generation Event</td>
<td>Sell at an exchange after being listed</td>
</tr>
<tr>
<td>Purchase at an exchange after being listed</td>
<td>Pay transactions fees for transportation or other services</td>
</tr>
<tr>
<td>Provide data or transportation services on AUTONOMY</td>
<td>Purchase apps from AUTONOMY app store</td>
</tr>
<tr>
<td></td>
<td>Acquire anonymised data for analysis by local authorities</td>
</tr>
</tbody>
</table>
Use of funds

The funds collected will be distributed as follows:

Software development: 60% - This will cover direct expenses including developer and consultants salaries and technical infrastructure expenses.

PR and marketing: 20% - The funds allocated for PR and marketing is used to bring awareness to stakeholders.

Operational expenses: 15% - This will cover the rent, utilities, office supplies, etc. in addition to executive team salaries.

Legal Fees: 5% - AUTONOMY has hired an external legal firm whose costs will be covered by this allocation.
Autonomy Team

GEORGE GRAMA
CEO Founder
Serial Entrepreneur. $4M+ raised from investors previously.
Two exits in the transportation industry.
Passionate about autonomous vehicles & blockchain.
https://www.linkedin.com/in/georgegrama/

FLORIN P.
Chief Operating Officer

MAIA MAIRONI
Chief Marketing Officer

MIHAI G.
Chief Strategy Officer

https://www.linkedin.com/in/georgegrama/
Autonomy Team

ALEXANDRU G.
Lead Autonomous Vehicle Developer

ADRIAN B.
Quality Assurance

RADU U.
Lead iOS Developer

GABRIEL R.
Lead Android Developer
Autonomy Team

MIRCEA L.
Lead Blockchain Developer

NICOLETA C.
Android Developer

MIHAI C.
Database & Web Developer

MARIUS G.
Python Developer
Autonomy Team

RADU C.
Business Development

BOGDAN M.
Cybersecurity Expert

CATALIN S.
5G Connection Specialist

TUDOR Z.
Blockchain Developer
Autonomy Team

ROBERT C.
Python Developer

EVEN BEDELL
Advisor
Senior finance and investment professional. Completed $15 billion in capital raising and advisory assignments as a boutique investment bank principal founder and previously with Lehman Brothers and KPMG.
https://www.linkedin.com/in/evanbedellcfa/

GEORGE POPESCU
Advisor
Seasoned Entrepreneur. 3 Master’s Degrees (MIT). 10 publications & patents. Blockchain enthusiast and expert. Online lending. Hedge funds. ICO advisor
https://www.linkedin.com/in/gapopescu

MICHAEL CREADON
Advisor
His mission statement is to provide honest, reliable, unbiased information about global cryptocurrency markets. He sees an enormous information gap and wants to play a positive part in giving investors critical information for them to make decisions.
https://www.linkedin.com/in/michael-creadon
Autonomy Team

CHERIE AIMÉE
Advisor
She is the former Director of Communications at ShipChain. She ranked #6 Top 100 Most Influential Women in Blockchain and voted Female Leader of the Year.
https://www.linkedin.com/in/cherieaimee/

NINA KAPLAN
Advisor
She is a business entrepreneur with a proven track record of growing early-stage companies from the ground up. Her successes have landed her on the cover of major publications, including NEWSWEEK, AMERICAN METAL MARKET, PLATT’S and METAL BULLETIN.
https://www.linkedin.com/in/nina-a-kaplan
Above: our office lobby and entrance in Romania.

Below: A few other events we attended, including Crypto Invest Summit where Autonomy founder George Grama presented on the main stage.
Competition

Autonomy is a revolutionary idea that combines two current trends in technology: blockchain and autonomous vehicles. Both are revolutionising the world we live in and Autonomy has identified a need felt by all car manufacturers, local authorities and a potential for businesses and consumers to have access to very affordable transportation solutions.

Autonomy is the natural evolution of what is currently happening in the autonomous vehicle industry. There are a few very recent initiatives to build something similar, both on the blockchain and using traditional technologies, however, there is no direct head-to-head competition for Autonomy with regards to our vision and mission.

Ford’s Transportation Mobility Cloud in partnership with Qualcomm is one of them. This is a cloud platform that can manage information flow and transactions among different components in the transportation ecosystems such as service providers, personal vehicles, pedestrians, mass transit systems, and city infrastructure.

Ford's system is exclusive to Ford or to personally owned vehicles —Conversely, AUTONOMY is building the Transportation Mobility Cloud for everyone, for the entire transportation operating system, including other automakers.

Hyundai Big Data Center
This is a project by Hyundai with a similar motive to Ford’s. It aims at gaining leadership in Connected Mobility solutions. It is developing a Self-developed Connected Car Operating System (ccOS) and Connected Car Service Platform (ccSP) to accelerate introduction of connected car services. Similar to Ford, this is also an isolated project with a view to gain a benefit for a particular automotive brand.

Savari
A San Francisco, CA startup recently raised $12 million to build a solution for cars to communicate with traffic lights and our smartphone.

SAP Vehicle Network
This is an effort by SAP to provide a cloud communication solution for autonomous vehicles. It does not reside on the blockchain, it is completely opaque and it has not made any progress in the past 2 years.
Crypto Competition

There are few competitors in the crypto space taking similar approaches to Autonomy. While we think competition is good because it proves the need which we are addressing, the entire industry is in its infancy and no business has any strategic advantage at this stage. None of them have a working product or have launched transportation related applications to a fraction of the size and scale that Autonomy has. Below is a quick, unbiased mention of these competitors:

DAV - www.dav.network
“DAV is an open source software platform allowing consumers to buy/sell autonomous, decentralised transportation services. DAV integrates into any autonomous vehicle (car, drone, ship), enabling those vehicles to discover, communicate and transact with one another using the DAV token. DAV will be a protocol that connects vehicles and consumers creating a decentralised transportation market.” - source: www.DAV.network -> ICO starting on April 30th until May 14th, 2018; fundraising target: $38 million.

CUBE - www.cubeint.io
Cube believes that the solution for vehicle-to-vehicle communication is a cube hardware box integrated into the car. They have experience with telematics and have a successful business in that sector. They are likely very capable of building a hardware box but adoption could be slow. They have a good team and some partnerships with smart city initiatives. Autonomy focuses more on the software side, connecting cars irrespective of their hardware. Through our efforts in researching the self-driving car technology available today, this is very much possible and the hardware component would not be needed in our case. Cube’s market cap is a strong $90 million. We regard them as a good competitor which, together with Autonomy, can push the industry forward.

DOVU - www.dovu.io
Dovu aimed to raise 85k ETH but ended up raising 20k ETH. It is more like a token for data transfer in the mobility ecosystem and only fulfilling one of the use cases of how the AUTONOMY token will be utilised. Their market cap is now less than $10 million.

TSio Protocol - www.tsioprotocol.com
They are aiming to build a universal, secure, and scalable travel account for connected people. It is interoperable across all transport modes, regional borders, competing transport providers, and existing smart ticketing systems. ICO has not yet started. Their focus is on consumer centric travel wearables and travel tokens, not so much un connecting self-driving cars together.
Crypto Competition

Differences from Autonomy:

Focus on the intangible goals: the DAV team specifically seems to have a lot of experience in aerospace technologies, with plenty of advisors from NASA. Autonomy does not focus on anything space related at the moment and we don’t consider the airspace industry a priority or anything that’s tangible to focus over the next 20 years.

No product launched: None of these companies have a working product, blockchain testnet or traditional mobile app. DAV, for example are currently working on a mobile app for ride-hailing. In our experience, the development of Uber like mobile apps takes up to 18 months for a team of 12-18 developers if they have a clear plan and path of development along with some industry experienced project managers.

No prior self-driving car experience: No company has been accepted into a self-driving car accelerator, like AUTONOMY has with NVIDIA. Our competition have no experience and have not studied the software and hardware of self driving cars. They do not plan to even test them, yet they pretend to want to build the underlying layer of connecting them. We have had more than 16 months of studying NVIDIA’s self driving car technology and we are very familiar with the cutting edge technology in this space.

No relations to local authorities or smart cities: these companies do not have any tangible initiatives regarding collaborations with smart cities or local governments for emergency services, a very important use case of a platform aiming to connect self driving vehicles.

Different technology views: DAV chose the Ethereum blockchain to process the transactions for the services it aims to provide. We chose Hyperledger Fabric because of its clear advantages in terms of already having real-world live applications, its scalability (which is a must) and speed of transactions. Last but not least, Hyperledger has the privacy layer that we need to keep data private to a level that everyone is comfortable with.

Our solutions can easily scale to millions of users and we aim to achieve that fairly quickly. Our apps that we launched and marketed ourselves got over 2 million downloads, which, combined with our clients’ downloads have reached over 4 million downloads. We know it’s not easy to scale a technology and choosing the right infrastructure makes the difference between wasting years of development and success.
Disclaimer

Legal governance and compliance

AUTONOMY is a project developed by Autonomy International Business Pte Ltd, a Singapore based company registered in 2019, fully compliant with this country's laws regarding crypto tokens. AUTONOMY will conduct strict KYC and AML and may prevent citizens of certain countries from participating in the token generation event. AUTONOMY tokens are utility tokens and not securities, as certified by an opinion letter signed by a prominent law firm from Singapore (this can be made available upon request). The whitepaper is for information purposes only and is not an offer or a call to sell stocks or securities of Softbit Technologies Inc. or Autonomy International Business Pte Ltd, in any company or a project, or that of any other related or associated companies.

AUTONOMY tokens are not securities

User acknowledges, understands, and agrees that AUTONOMY tokens are not securities and are not registered with any government entity as a security; and shall not be considered as such. User acknowledges, understands, and agrees that ownership of AUTONOMY tokens does not grant the user the right to receive profits, income, or other payments or returns. AUTONOMY tokens do not represent an ownership interest in Softbit Technologies Inc. or AUTONOMY as a project or any other entity.

No guarantees of value

There is no guarantee that AUTONOMY tokens will be tradeable on any exchange. There is no guarantee of the value of AUTONOMY tokens or whether that value will change over time. Unforeseen events, events in which the developers have no control, or force majeure circumstances may cause the value of AUTONOMY tokens to be extremely volatile. Users who acquire AUTONOMY tokens further acknowledge and represent that there may be no exchange that will accept AUTONOMY tokens in exchange for goods, services, cash, or other cryptocurrencies. As future values and acquisitions of cryptocurrencies and alternative coins cannot be guaranteed, it is recommended that each participant consider all risks associated with participation in the AUTONOMY token crowdsale.
Disclaimer

Risks associated with Ethereum

AUTONOMY tokens will be issued on the Ethereum blockchain. Therefore, any failure or malfunctioning of the Ethereum protocol may lead to the trading network of fragmented AUTONOMY tokens.

Regulatory uncertainty

Blockchain technologies are subject to supervision and control by various regulatory bodies. AUTONOMY may fall under one or more request or action on their part, including but not limited to restrictions imposed on the use or possession of digital tokens such as AUTONOMY tokens, possibly limiting the functionality or repurchase of AUTONOMY tokens in the future.

AUTONOMY tokens are not an investment

AUTONOMY tokens are not legally binding investments. In the case of unforeseen circumstances, the objectives stated in this document may be changed. Despite the fact that AUTONOMY intends to reach all goals described in this document, all persons and parties involved in the purchase of AUTONOMY tokens do so at their own risk.

Risks of using new technologies

AUTONOMY protocol is new and relatively untested technology. Therefore, there can be additional unforeseen risks associated with this product.
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Blockchain Cloud for Autonomous Vehicles