



# WHITEPAPER

ARCHAEOLOGICAL BLOCKCHAIN

10 July 2017

[www.kapu.one](http://www.kapu.one)

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# Abstract

## introduction to the project, Kapu's purpose and innovations

The preservation of archaeological finds is legitimized by the uniqueness, rarity and also by their invaluable cultural value. They expound what we were, what we are and what we'll be.

Unfortunately, although well conserved, the preservation is constantly threatened by losses and alterations as well as by the time that implicate a progressive and inexorable decay of the find with inevitable loss of historical information.

The time influence can be solved thanks to digitizing the finds but problems like data loss and data modification remain, so how could we resolve these problems?

The KAPU project aims to make immutable the human history through the creation of the first world archaeological blockchain of the modern era and also aims to enhance it thanks to today's technology (multimedia, augmented reality, virtual reality, etc.).

Our history is today our greatest asset that future history can not afford to lose, so it's important preserve it for us and for our children, who are our future.

This is our purpose.



# Introduction

## History of the coin

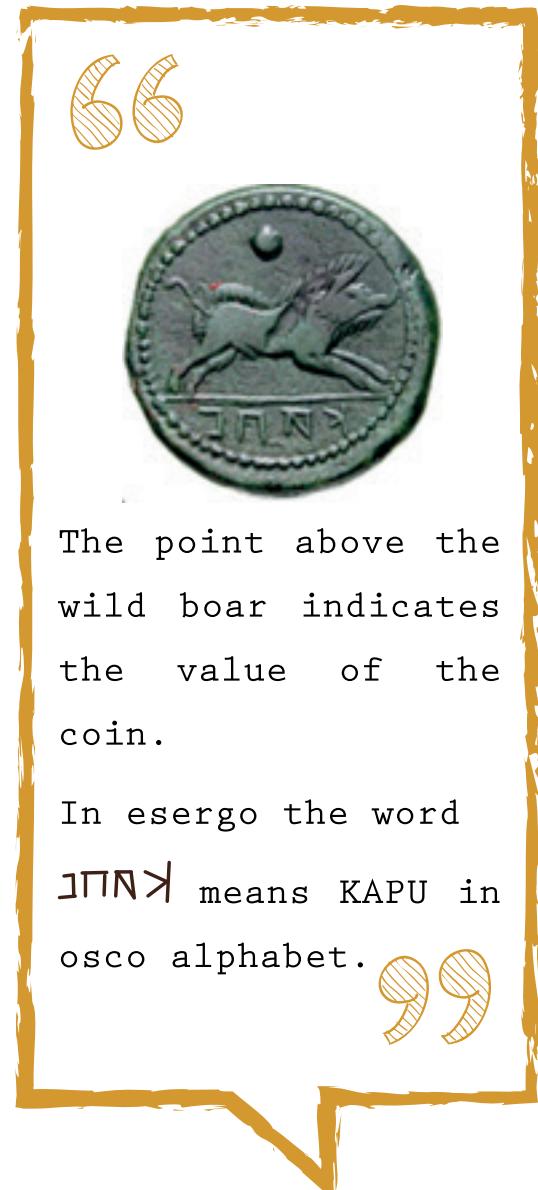
The Capua coins (KAPU in oscus alphabet) were forged during the Second Punic War (218 BC) in one of the few cities in Italy that decided to ally with Hannibal to fight Roman hegemony.

Capua had definitively interrupted relations with Rome and, in order to finance its expenses, forged and spread the coin along Atella and Calatia.

**Coins were forged with all three metals (bronze, silver, gold), but Capua was the only one of the three cities to issue precious metal coins.**

KAPU was also famous for its gladiatorial school that, along Rome and Pompei, represented the excellence of the empire's schools. There were solely gladiators with a great stature and strength and they were trained to give birth to bloody spectacles to entertain the people and aristocracy. During these spectacles the man who was defeated, not only lost the match, but also life.

It is precisely in this context that the imposing name of the gladiator Spartacus distinguished itself, who, forced to fight inside the Amphitheater Campano, he led the revolt of the slaves in 73 AD.



The point above the wild boar indicates the value of the coin.

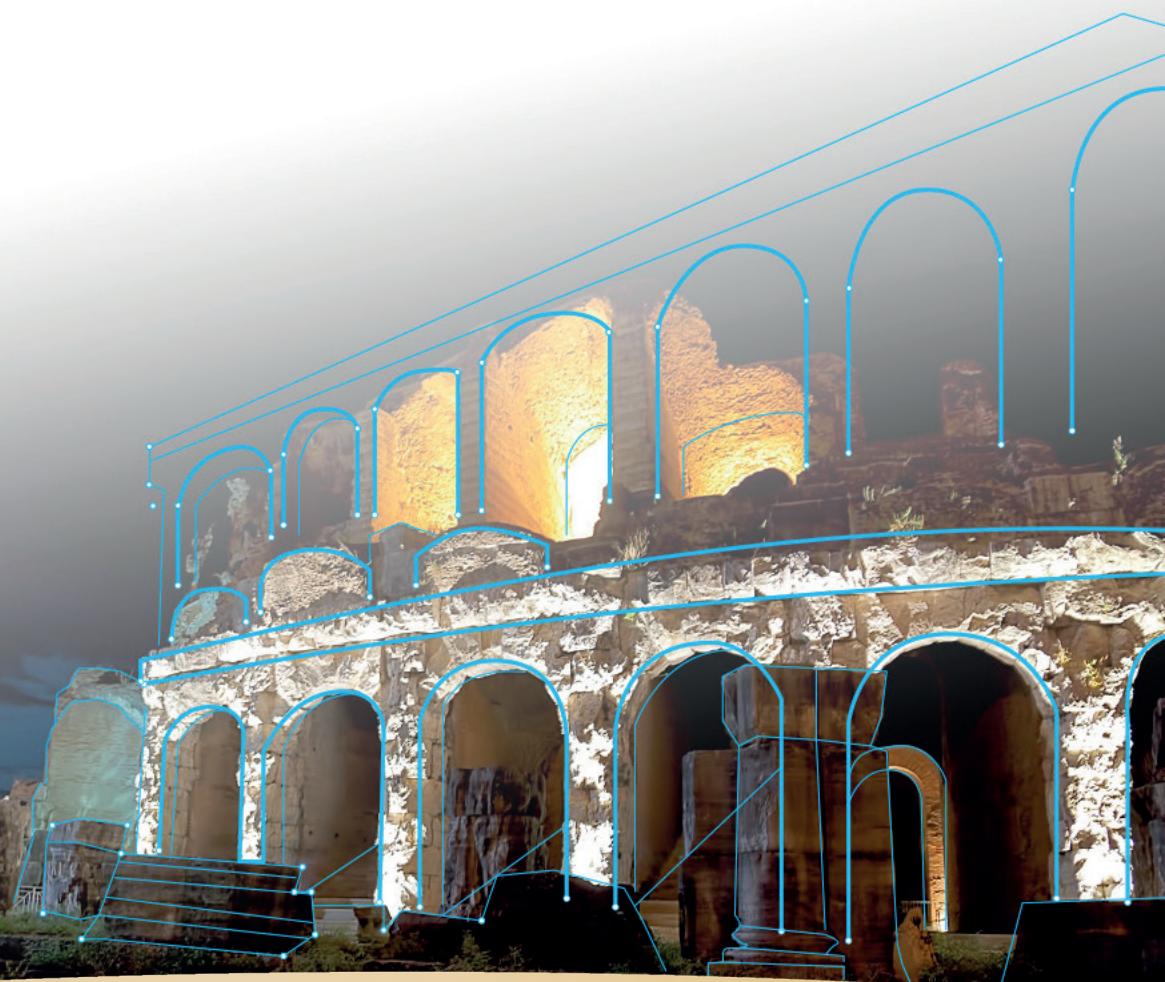
In esergo the word **ΚΑΠΥ** means KAPU in oscus alphabet.



Another peculiarity of the city was to make and maintain multiple copies of the city's popular records and to deploy them geographically at various places throughout the territory in order to preserve the integrity of the information.

Historically speaking, it might be unsuitable but we could say that the **first BlockChain of the world was born in Capua** and it's from this teaching that we can be inspired in order to preserve our history.

From this philosophy come out KAPU, which, as a cryptocurrency based on the DPOS system, aims to make the history trackable, reachable and accessible to anyone, so people can see everything that contributed to building and enhancing the history of humanity.



# How it works

Purposes, DPOS and chain explanation, coin etc.

Delegated Proof of Stake is a method for securing a cryptocurrency network, processing transactions and achieving a distributed consensus regarding the ownership of funds without the need for a central authority.

It is a variant of the Proof of Stake system, which itself was developed in order to reduce the cost and inefficient electricity usage associated with Proof of Work systems such as the one used by Bitcoin.

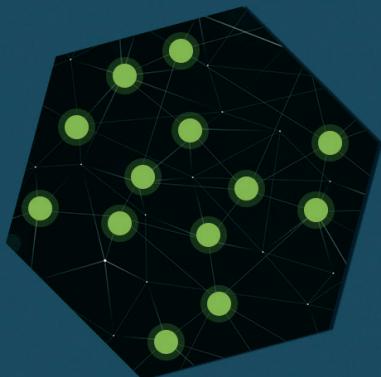
The DPOS method, developed by Daniel Larimer and implemented for the first time by the Bitshares blockchain, diverge from the POS system.

The difference between a POS system and a DPOS system is that **POS involves the participation of the entire network to validate a transaction whereas DPOS involves only a limit number of delegates**.

These delegates perform the function of validating transactions, maintaining the blockchain and take the transaction fees as profit.

Delegate proof-of-stake systems determine clock producer by stake-vote

With clever economic design, DACs can collect much higher fees by performing useful services.



Within this transaction validation system, each delegate receives a reward in KAPU token, in the form of transaction fee, in order to cover the operating costs needed to keep in efficiency conditions forgetting nodes (to which transaction verification is delegated) as well as maintaining the KAPU network in safe conditions.

If delegates should conduct their job incorrectly or take advantage of their own authority, the votes may be revoked by voters and assigned to a new delegate. This system can guarantee the security of the network within a representative democratic logic.

FEATURES	DPOS	POW	PPC POS
Less incentive to centralize	✓	✗	✗
Higher transaction volume	✓	✗	✗
Faster confirmation times	✓	✗	✗
Energy efficient	✓	✗	✓
Incentivizes development	✓	✗	✓

Unlike other DPOS systems, the KAPU network is composed of 51 delegates. The decision to assign the transaction validation to only 51 delegates was taken in order to allow us to guarantee a fast, efficient and stable network with an incredible time limit of 8 seconds per block.

**The KAPU DPOS based system is essential, safe and also compatible with energy saving.**

The KAPU project is also inspired by some innovators in this field like LISK, SHIFT, ARK in order to create the first archaeological blockchain and to gather information about history, finds, ancient artefacts and finally make them usable by the entire community.



# Network Security

## Technical details about DPoS

Information is defined as immutable when, after being written or stored, it remains unchanged and the condition of impossibility of modifying it by a user occurs.

For example, let's consider a database, we know that it contains information that are accessible to read by the normal users but can only be edited by the user who manage the database itself.

From the user side the database is immutable because he can not make any changes but it's not the same for the database administrator, who has the ability to modify content as it likes.

This problem is solved using blockchain technology.

**The blockchain is a distributed database that allows anyone to add information following presetted and approved rules.**

In the DPoS systems, of which KAPU is part, the addition of information into the blockchain (technically block validation), is made possible by delegates (or forgers, the equivalent of miners in POW systems) through a system of representative democracy of consensus, already covered within this document.



**SECURITY DPoS**  
ARCHAEOLOGICAL BLOCKCHAIN



By design, blockchains are inherently resistant to modification of the data. Once recorded, the data in any given block cannot be altered retroactively without the alteration of all subsequent blocks and a collusion of the network majority.

KAPU's blockchain guarantees high security and remain public, accessible and completely transparent to everyone.

The KAPU network uses 10 seed nodes installed on dedicated servers to support the network and keep it running without any slowdown even in the remote possibility that all 51 delegate nodes should go down simultaneously (ex. DDOS attack).

After the mainnet launch, the seed node number will be progressively increased.

The main seed node runs into a dedicated high performance server managed by an important European farm.

**In order to have an high security of the KAPU network we have decided to entrust the protection of our seed nodes to cloudflare  services that provide a complete protection against denial of service attacks (DDoS attacks).**

We're glad of having invested in the security of the KAPU network to offer the best services to our users.



# How to invest

## ICO details

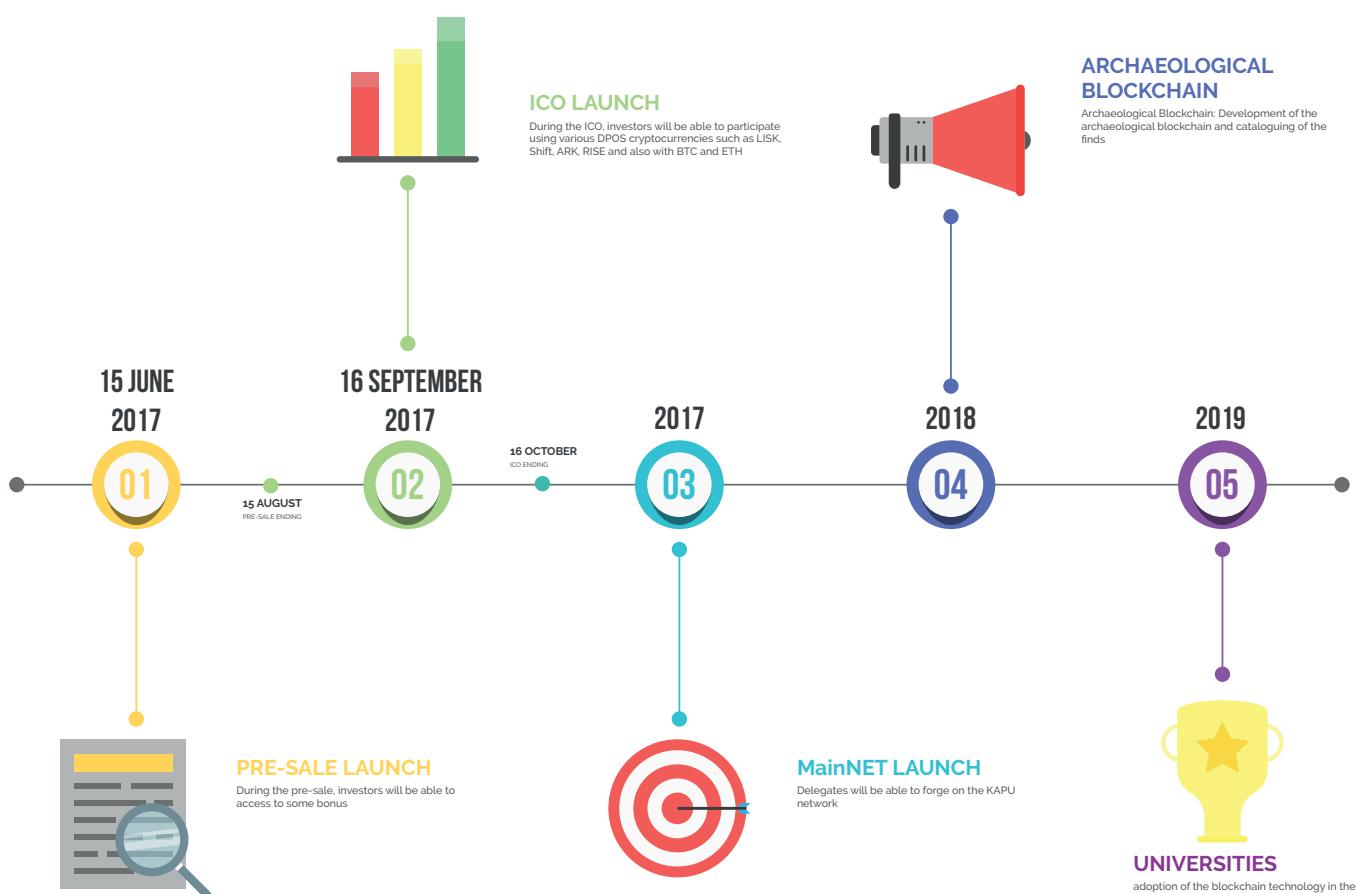
The KAPU's pre-sale began on 15 June and will end on 31 August 2017.

In order to have funds to develop this incredible project we decided to launch an ICO that will start on **16 September and will end on 16 October 2017**.

The ICO's goal will be to raise funds that will allow developers to make various implementation and improvements of the KAPU project. All ICO's details can be found on <https://kapu.one>

During the ICO, investors will be able to participate using various DPOS cryptocurrencies such as LISK, Shift, ARK, RISE and also with BTC and ETH.

## MainNET launch at 21 October 2017

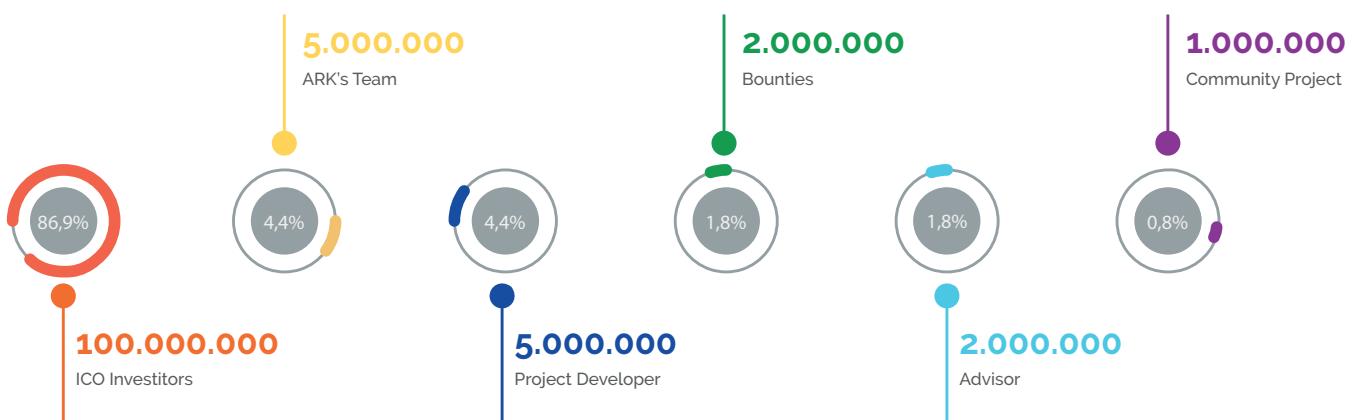


The KAPU's team had a long cooperation with the ARK's team and during this cooperation both teams matured a solid confidence and collaboration. Thanks to this cooperation we decided to entrust ARK the escrow's role of the ICO.

During the ICO will also available an online shop where users will be able to buy various gadgets such as mousepads, brooches, cups and the legendary KAPU's shirts!

### **The distribution of KAPU coins will be as follows:**

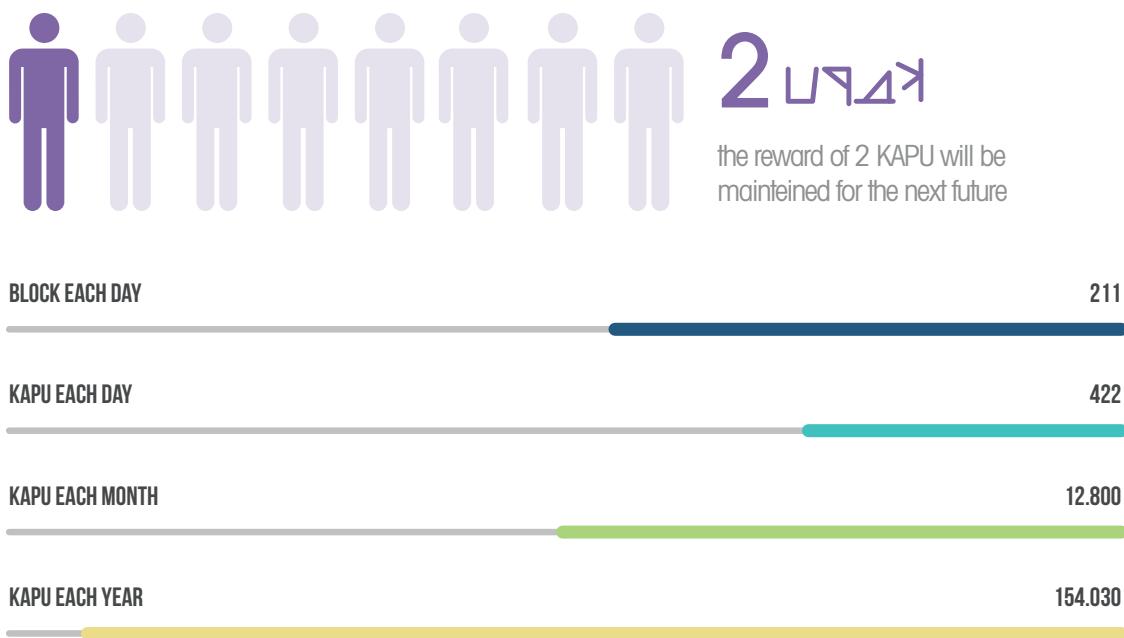
In total will be distributed 115,000,000 KAPU coins



# Reward system

Every day 10,800 blocks are forged by 51 active delegates.

- 1 active delegate proceeds on average 211 blocks each day
- 1 active delegate forge on average (it could be a bit more or a bit 'less depending on the missed blocks and the average block time):



- 422 KAPUs every day
- 12.800 KAPUs each month
- 154.030 KAPUs every year
- 51 active delegates will forge about 7,747,920 KAPUs every year

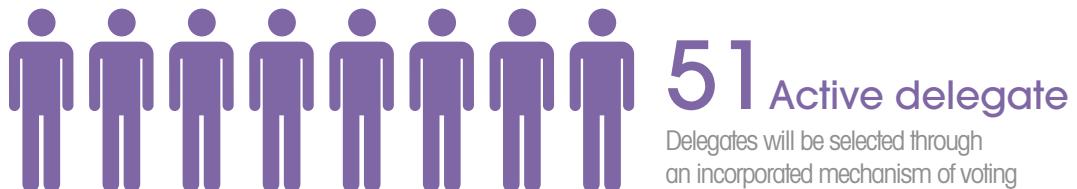
The reward of 2 KAPU will be maintained for the foreseeable future.

Unlike some other blocks, KAPU will not reduce forging prizes every year or simplify the size of a given block, but because of the same prize, inflation will drop each year.



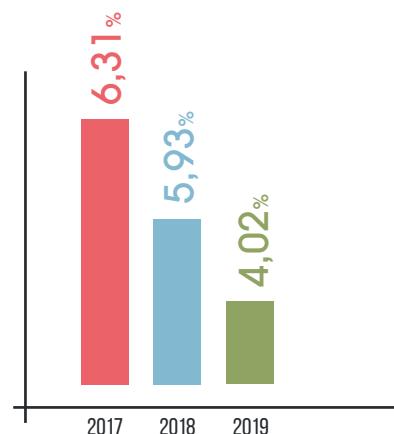
## The technical description of KAPU Blockchain is as follows

- DPoS (Delegated Proof of Stake)



BLOCK EACH DAY	10.800
KAPU FORGED EACH YEAR	7.747.920
SEEDED GENESIS BLOCK	110.000.000

- 51 active delegates
- Delegates chosen with the DPOS voting system
- 110.000.000 KAPUs - Seeded Genesis Block
- Multi-signature wallet
- Constant block reward
- Inflation (with 8 seconds per block)
  - 6,31% for the first year
  - 5,93% for the second year
  - 4,02% for the third year



Inflation rate over time

(Ethereum and Lisk for comparison)

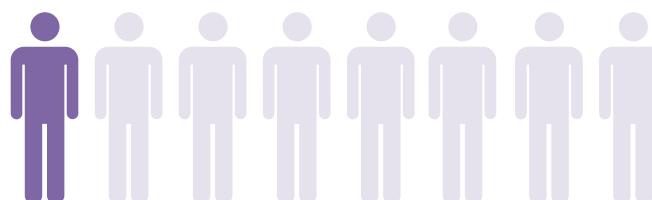
- 8 seconds for block
- Possible reduction of block time with future updates to the core.
- 25 transactions for block



## Fees

The fee for standard transactions is set at 0.1₮ but may be manually changed if needed. At mainnet launch, a fee structure is provided out of the box to forging.

Delegates with the following rules:



## Fees

All fees are paid to the forging node that processes the block containing those taxes



- Transaction 0.1₮
- Vote 1₮ (51 votes per transaction)
- Second passphrase 1₮
- Multi Signature 1₮ for signature + 1₮ for signing account
- Delegate registration 25₮.

All fees are paid to the forging node that processes the block containing those taxes



# Team and experience

Who are we?



Many of this people already work in the DPOS world and are renowned in the LISK, ARK and SHIFT community.

Some DEVs actively collaborate participating at KAPU's mission, sharing finality and dedicating their own professionalism to the development.

In this moment our Team consists predominantly of people who are gravitating within the Italian Community but the Team is open to new partnership with people from different countries as well.



# The blockchain in the archeological world

## The archeological blockchain

The blockchain isn't only the cryptocurrency. The virtual currencies are only one of his numerous and possible applications.

Thanks to a decentralized management the blockchain allow to send any data safely, without any middleman and permitting a data exchange without risks between two entities.

**And that's the kind of safety that with its characteristics of immutability excludes the need to use third party means such as an e-mail provider, a cloud computing service, external certifiers etc.**

**The innovative revolution and conceptual in the archeological sector, will be allowed thanks to the development of a universal decentralized index which will be free for University and Ministry**



For the development of the archeological blockchain data relating ancient artifacts through a shared system that will permit to different entities to share, in a fast and safe way, information about all artifacts.



Such information sharing mode will ensure a concrete support to those professional user that operates in the archeological world; at the same time it will be a useful aid also for Ministry, university, schools and museums but specially it will allow the creation of an 'ad hoc' service of which will benefit citizens to which will be offered the consultation service of a particular artifact and about all the relevant information with many tools like 3D viewers, augmented reality, 3D printing etc



# The technique of “Notarization”

The most important changes are happening right in the legal notary activity, a sector intended to be subject to a radical rethinking and of a substantial revision.

In the case of the Archeological blockchain, the technique of data notarization aims to exploit the security principles and immutability provided natively by the public blockchain to purpose to respond more effectively to the regulations required in Europe and America.

**Our TEAM has observed that the Approach of traditional notary services are basically based on trust in the counterparts and go through iter and complex process that involve both risks and high costs.**

Unlike above, the intrinsic logic of blockchain with the opentimesamps, can guarantee independence from any third part provider, as well as a higher level of security.



APPROVALS AND DIGITIZATION BY  
RECOGNIZED AND AUTHORIZED  
ENTITIES FOR AUTHENTICATION AND  
CERTIFICATION



# Final Conclusions

Our Archaeological Blockchain aims to give new life to the sector OF THE ARCHEOLOGY proposing a valid tool that would allow a natural evolution in qualitative terms.

And now that we are realizing that all the world around us is changing thanks to the Blockchain technology and that in the coming years, this process of change will envelop us at an ever-increasing pace supported by radically transforming our daily life into something Which will be more and more digital and that will also effect the abolition of many barriers often introduced by the public administration.

We are confident that cryptocurrencies are an opportunity for everyone though we believe that its benefits can only be tangible if everyone will have the correct information about its potentialities and logic that they undergo the operation.

**It is not about visionary ideas, but about a technological process of which we are already part, which is constantly evolving and is trying to give answers today to questions that will be asked tomorrow, in respect for a necessary balance of interests.**

This is just the beginning of the story!

**Now it is up to you to decide whether to enter as an actor to write the sequel, or stop as a spectator to look at the others who are going out to the future.**

