

How can we help the spirit of sharing Knowledge?



Physics Meets Block Chain
2nd Workshop, CERN,
July 11th 2018.

Pablo Garcia Tello
Markus Nordberg
Oday Darwich

The Ancient Library of Alexandria



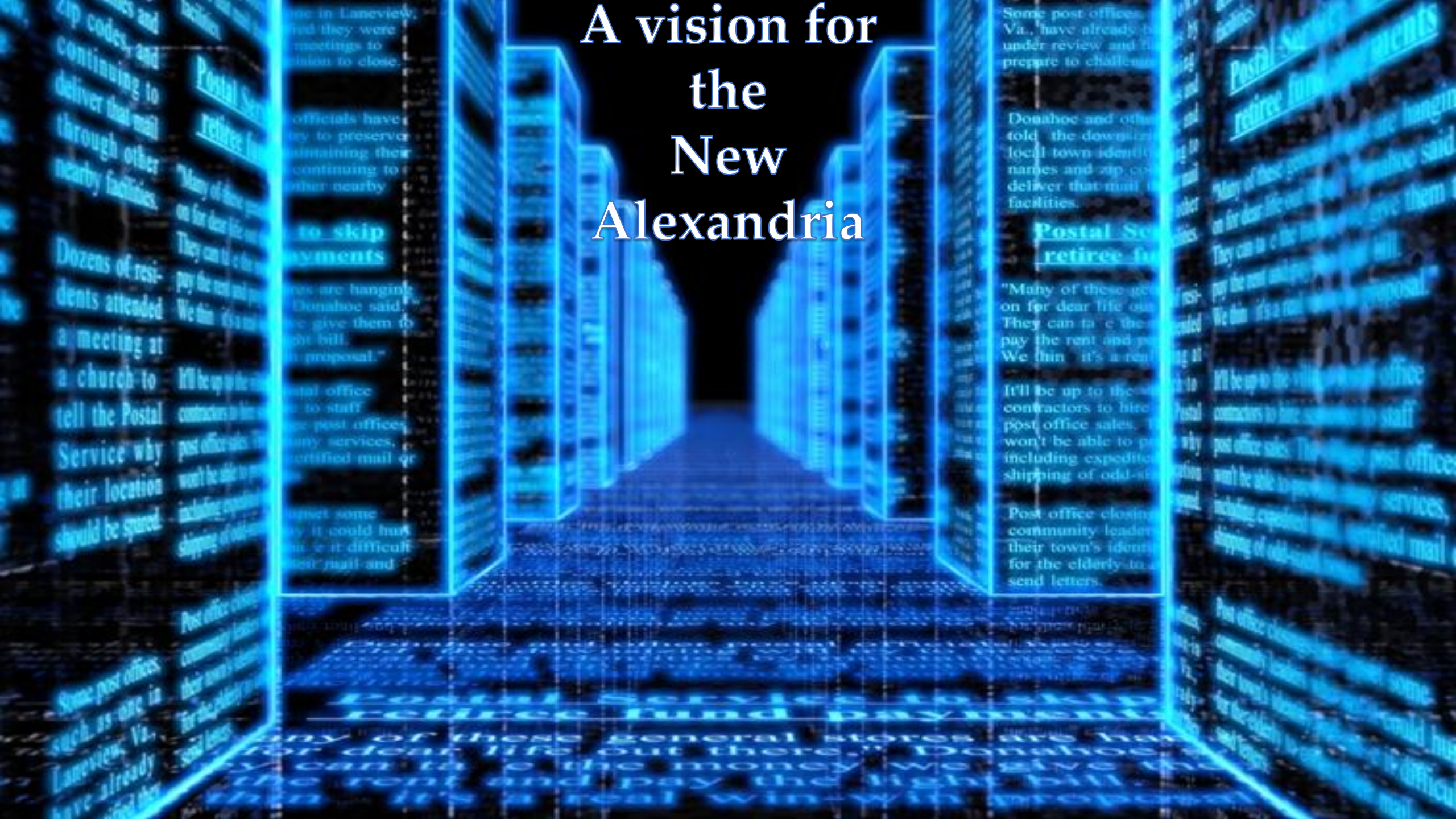


Believed to contain ~400000 scrolls

A symbol of the irretrievable loss of public knowledge



A vision for the New Alexandria



officials have
try to preserve
maintaining their
continuing to
other nearby

to skip payments

are hanging
Donahoe said,
we give them to
bill.
proposal."

postal office
to staff
post offices
many services,
certified mail or

unset some
it could hurt
it difficult
their mail and

Donahoe and other
told the downsizing
local town identity
names and zip codes
deliver that mail to
facilities.

Postal Service retiree fund

"Many of these gen
on for dear life out
They can take the
pay the rent and pay
We think it's a real

It'll be up to the
contractors to hire
post office sales. I
won't be able to pay
including expedited
shipping of odd-size

Post office closing
community leaders
their town's identity
for the elderly to
send letters.

Postal Services to skip retiree fund payments

any of these general stores are hang
for dear life out there," Donahoe
y can take the money we give them
the rent and pay the light bill
We think it's a real win-win proposal

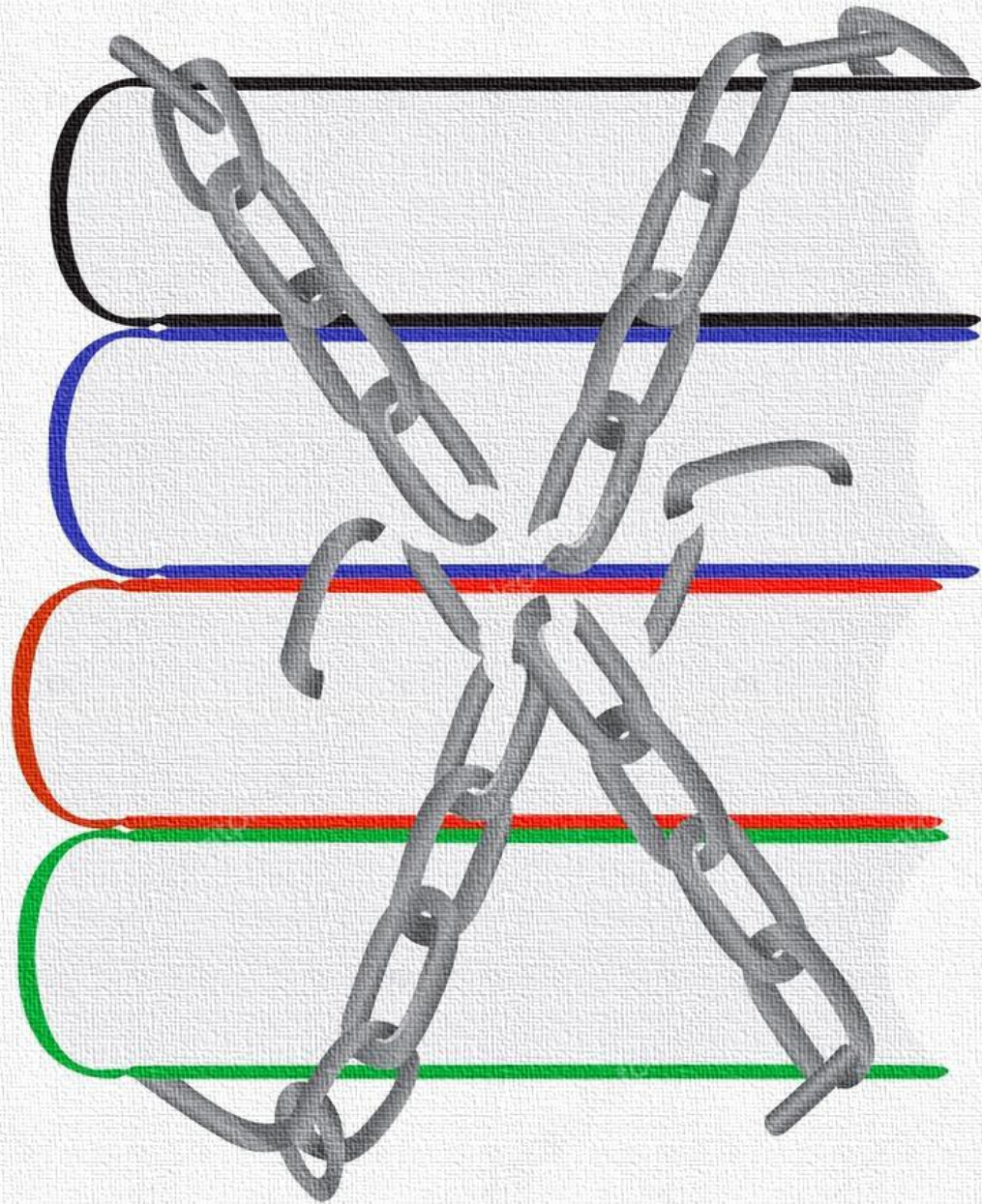
Postal Service retiree fund payments

"Many of these gen
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It'll be up to the
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Post office closing
community leaders
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Purpose:
Democratizing
Knowledge and
Innovation

...while giving
recognition to its
creators.

One single rule: you must give as much as you take



The Content of the New Alexandria

Not books, but Results from R&D&I
publically funded projects

Project Results is
the exchange
currency



We have a project launcher in place called ATTRACT



HDNCL



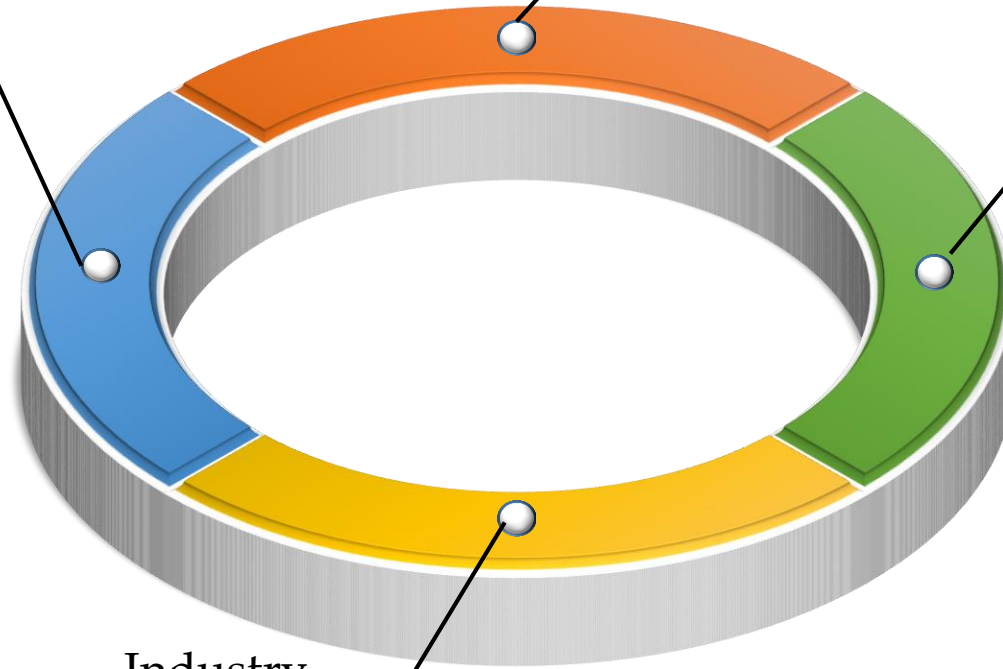
 **ATTRACT**

<https://www.attract-eu.org/>

Business & Innovation Experts



Research Infrastructures



Public Investment

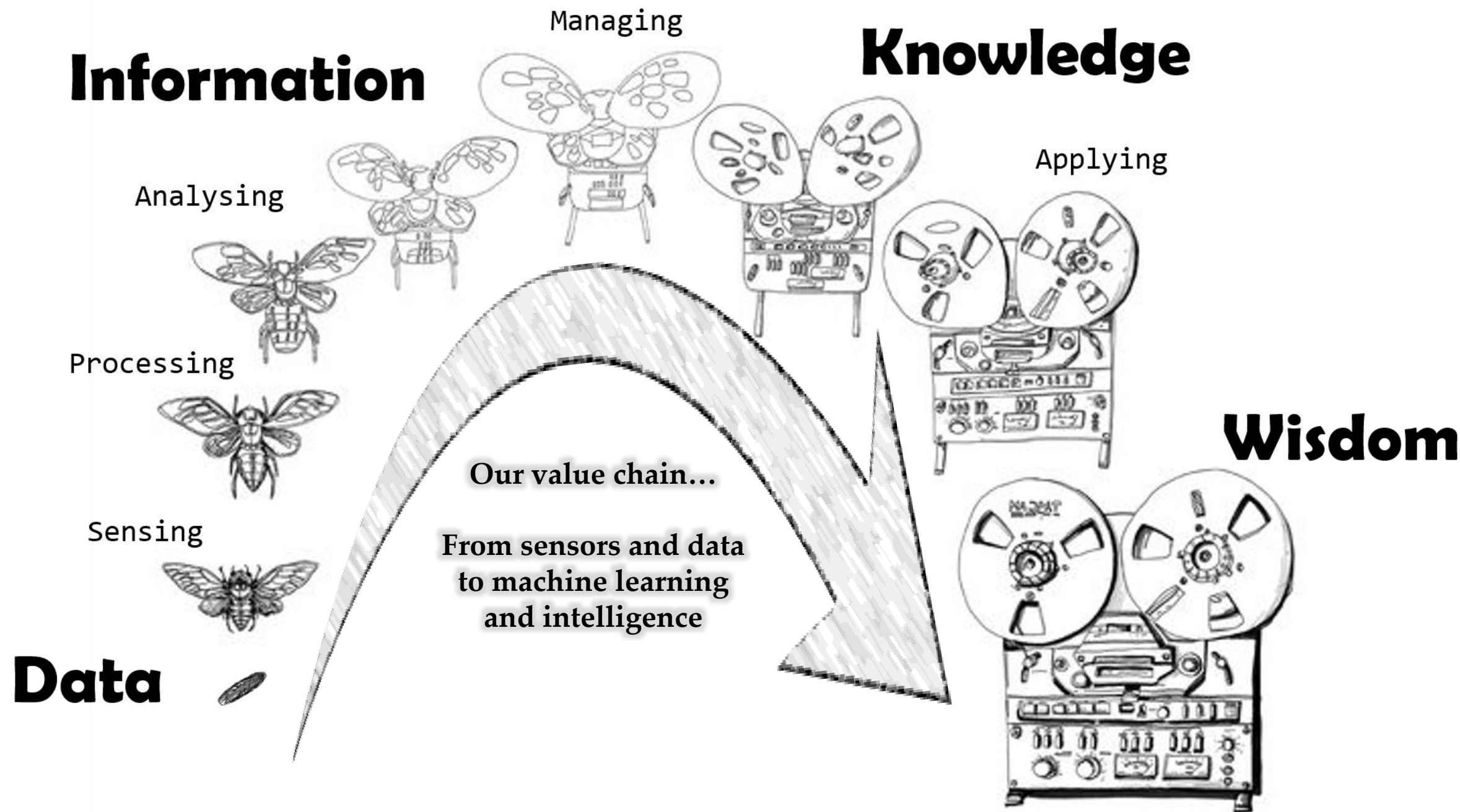


European Commission

Industry



From Breakthrough Technologies
expanding Fundamental Research
frontiers to Transformative Innovation
for Society



2018 (ATTRACT Phase 1)

Initial 20 M Euros EC fund.
Seed funding of 170 breakthrough projects (100 k Euros each).

1

2020 (ATTRACT Phase 2)

Scale EC funding (in place).
Select 6 to 7 projects of ATTRACT Phase 1.
Scale funding them with 4 to 6 M Euros.

2

2021 (Maxi-ATTRACT)

Sustainable Public-Private Capital Funding Model.
1 B Euros Public Funding.
Matching private funding ("investor club").
Repeat seed/scale funding cycles massively.
New Alexandria ready for test.

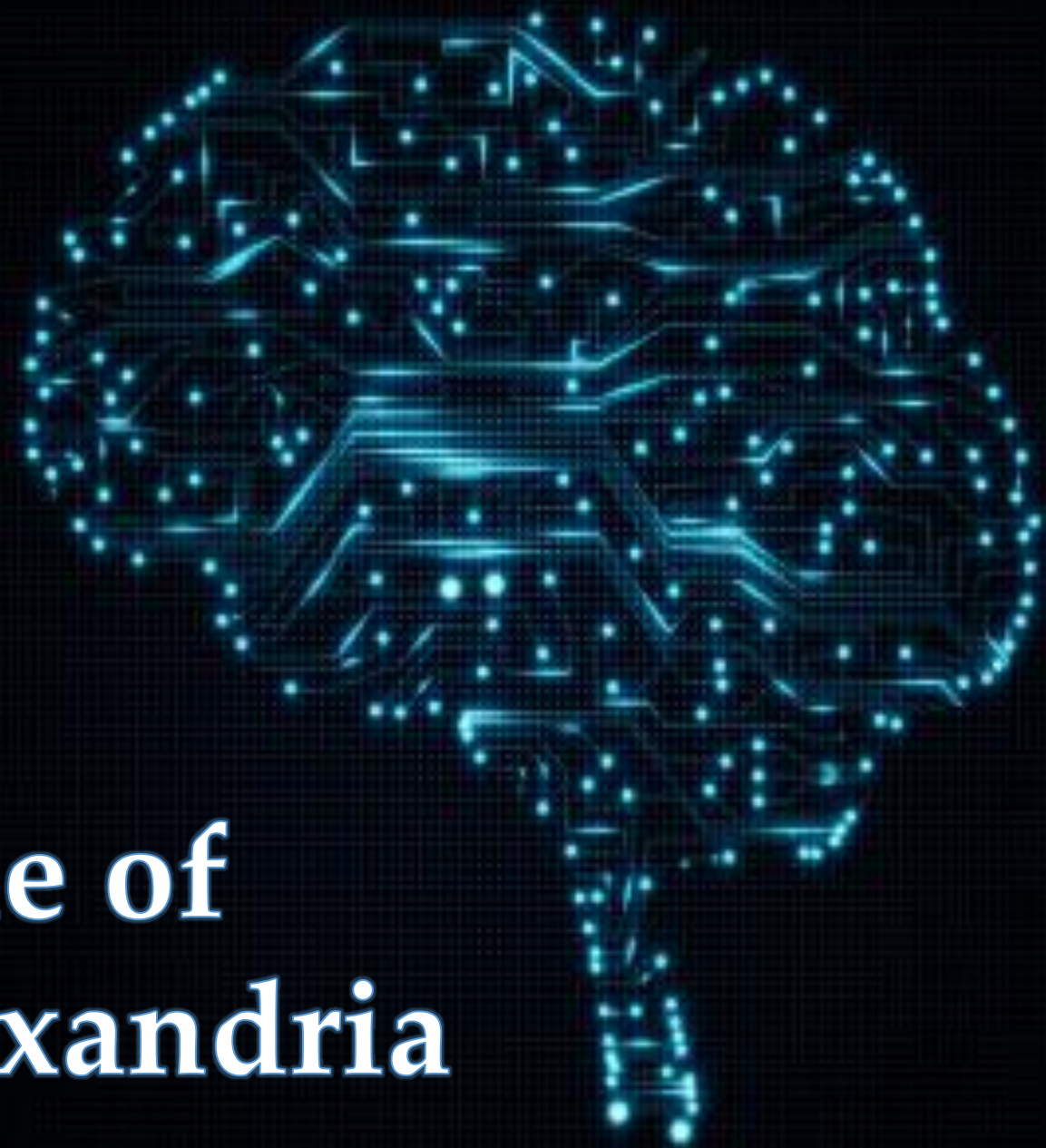
3

2025

Maxi-ATTRACT seed/scale funding
model fully deployed.
New Alexandria fully deployed.

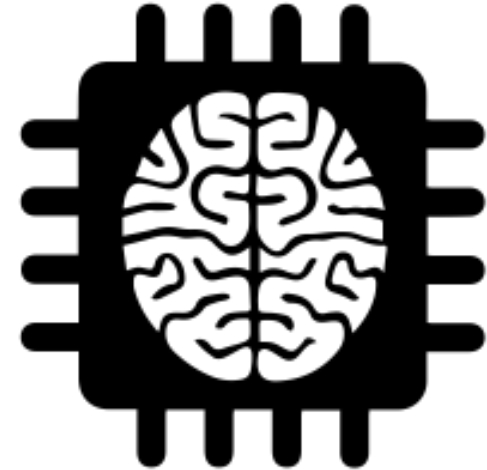
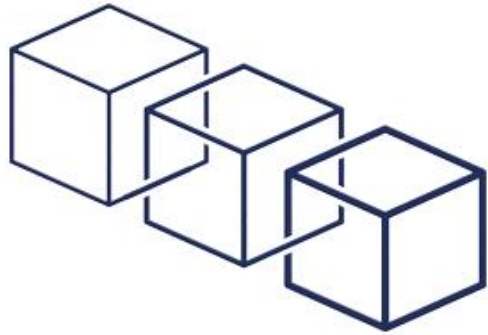
4

ATTRACT Roadmap



Inside of New Alexandria

Technology Building Blocks

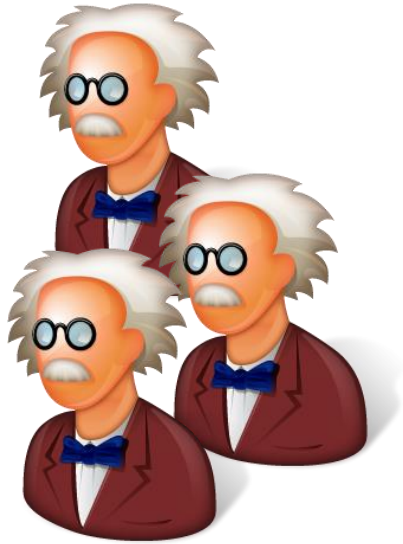


The combined power of Block Chain + Data Visualization + Machine Learning

Block Chain and New Alexandria



Codifying Knowledge



PROJECT SUMMARY FILE

Creator/Document Title

CERN/ New Silicon Photomultiplier

Project Acronym

Silicon4U

Project Summary

Novel silicon photomultiplier with x10 performance as compared to state of the art

Creation date/Project Update History

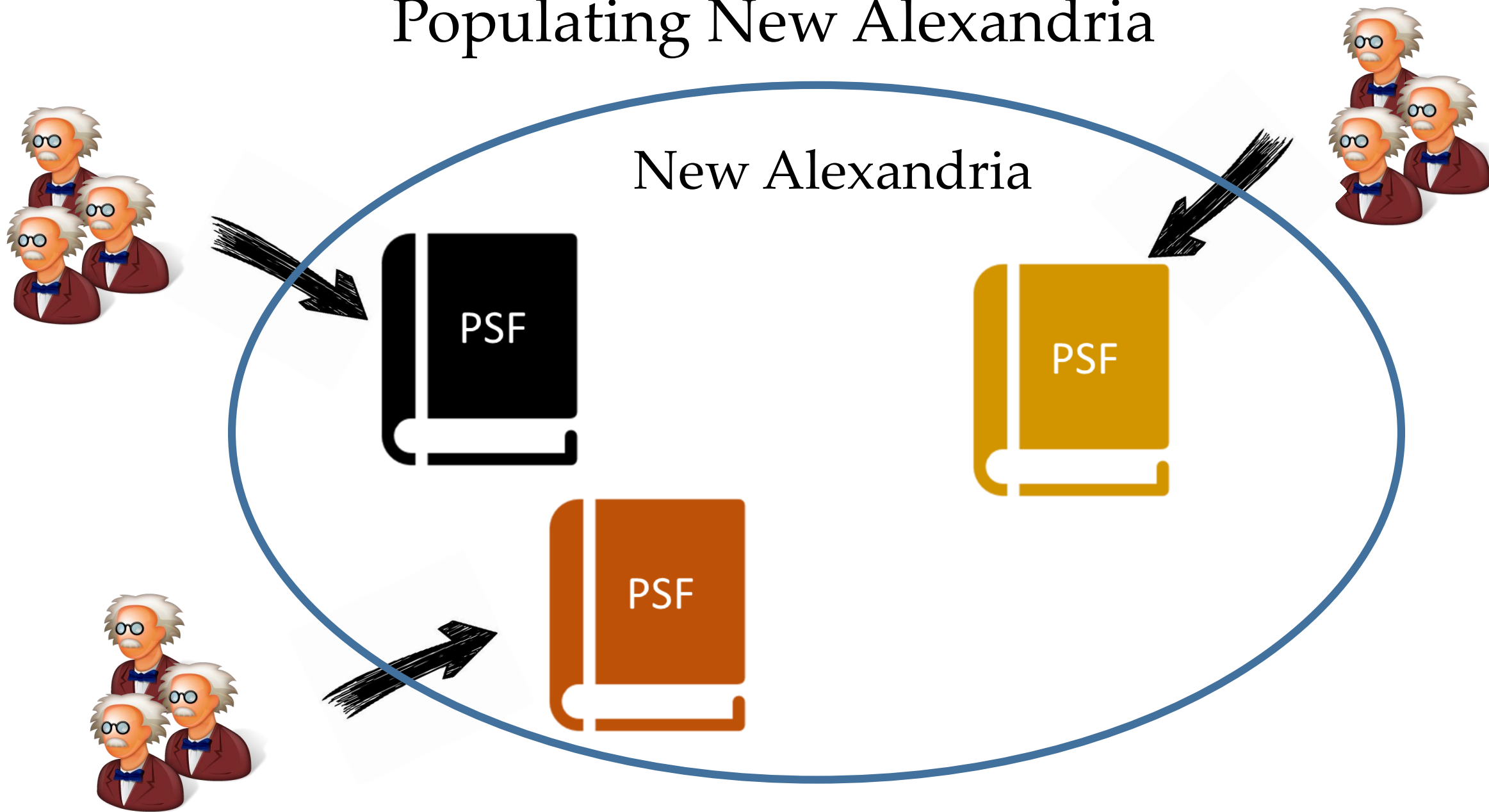
Feb, 23rd 2018

Annexes (Public)

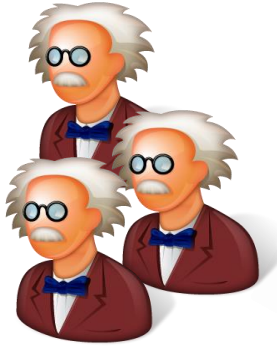
PDF File, Video, Data, etc

The results of each R&D&I project funded by ATTRACT are written in a standardized Project Summary File (PSF).

Populating New Alexandria



Populating New Alexandria



PROJECT SUMMARY FILE

Project Hash Code

8743b52063cd84097a65d1633f5c74f5

Creator/Document Title

CERN/ New Silicon Photomultiplier

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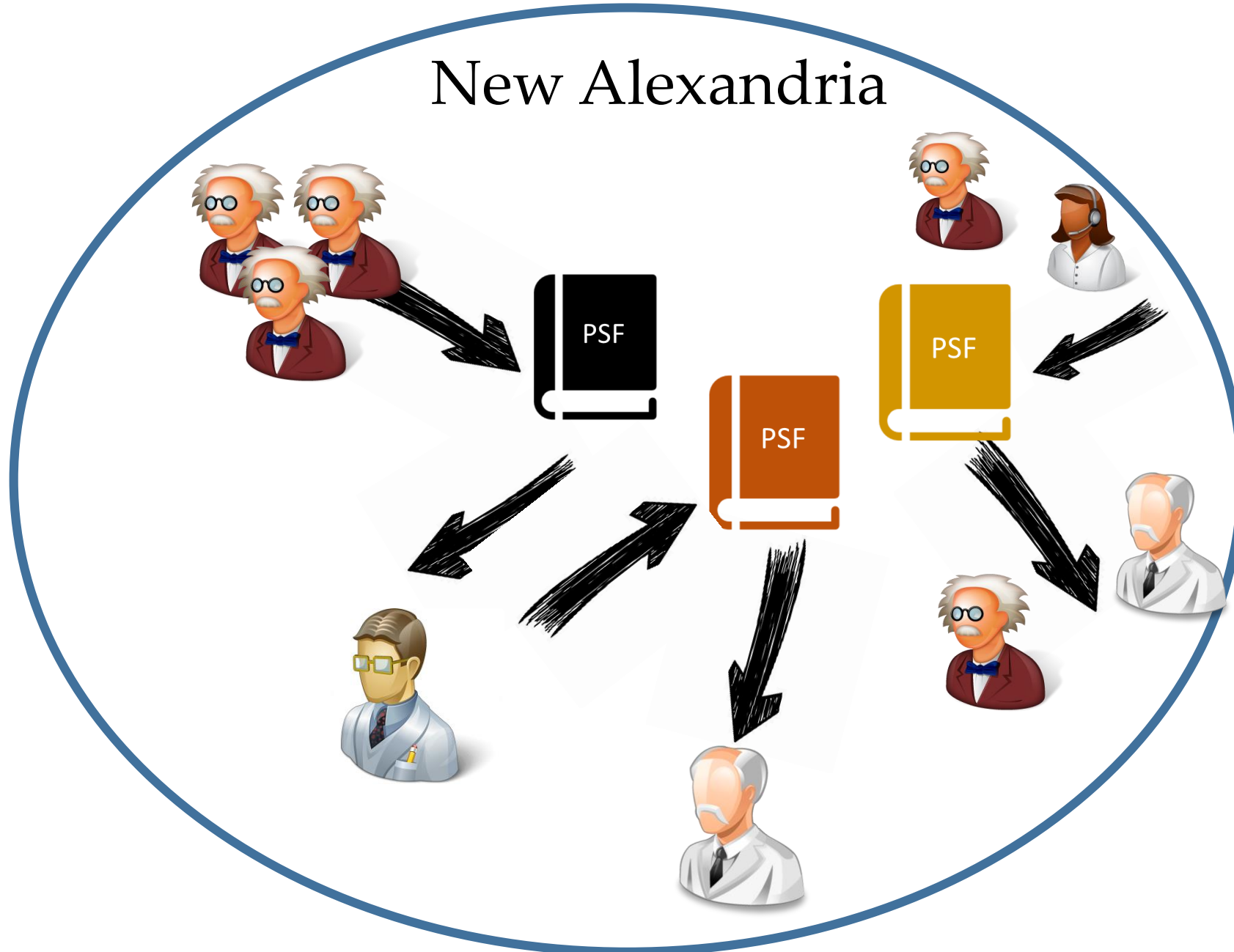
Annexes (Public)

PDF File, Video, Data, etc

- Every PSF uploaded gets a distinctive Hash Code.
- If the PSF is modified in time by the authors (e.g. with new project results) the PSF keeps the same Hash Code but the Project History is updated.

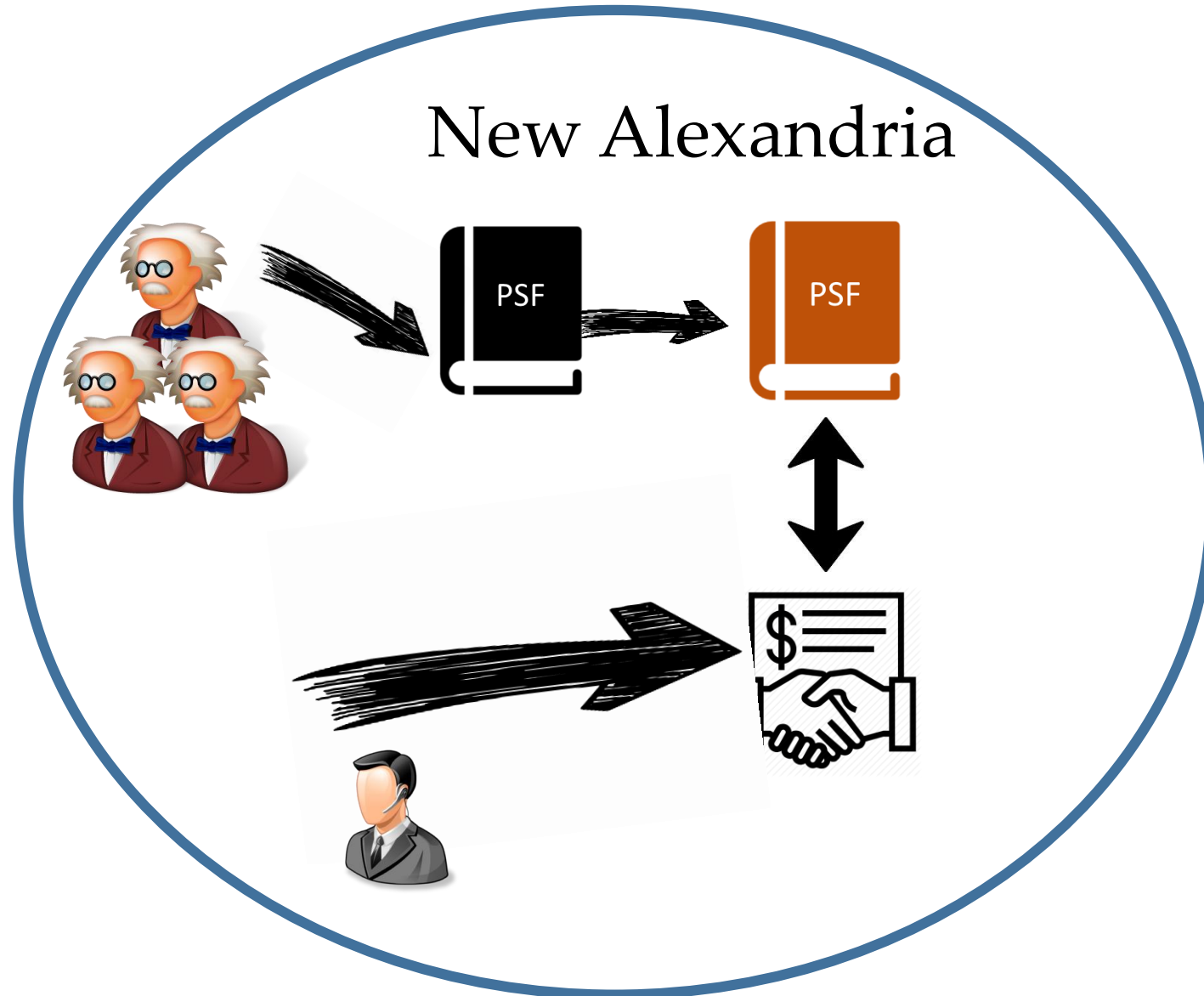
Transactions in New Alexandria

New Alexandria



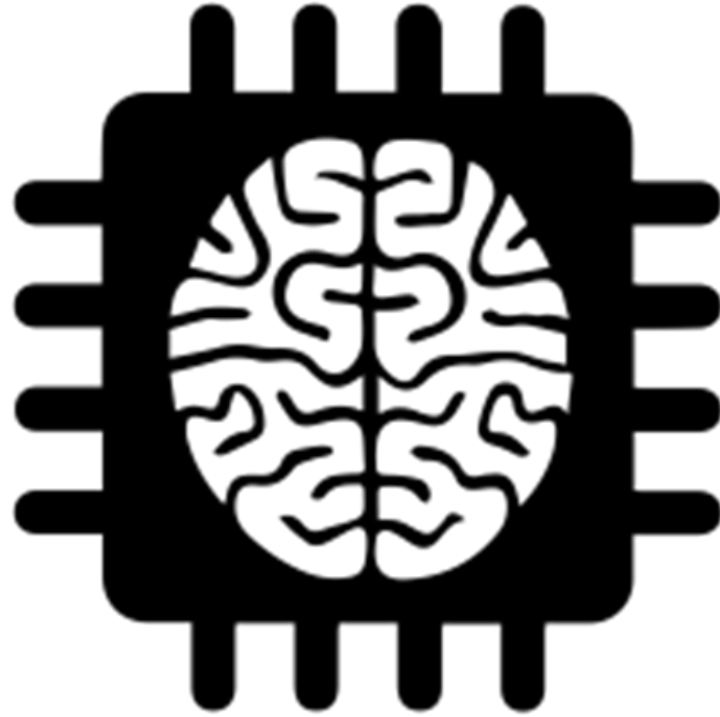
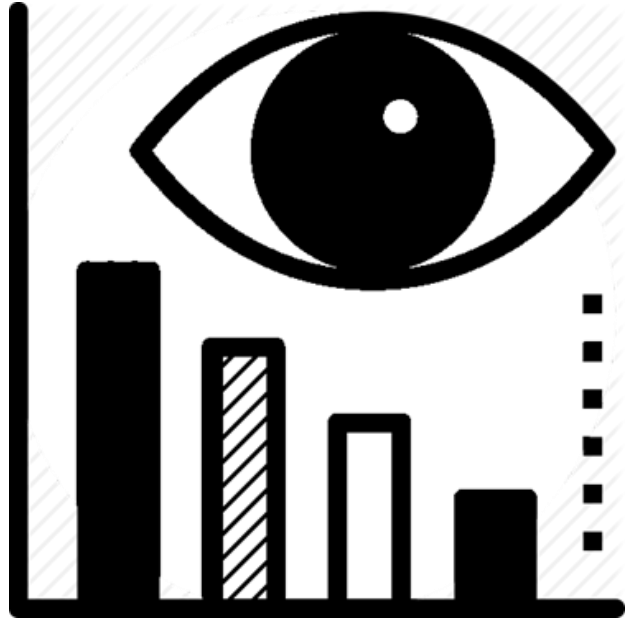
- New Alexandria is a repository of project results and a trading platform.
- All transactions in New Alexandria are recorded in a shared ledger.
- X number of verified transactions constitutes a block. New Alexandria users are incentivized to mine, since it is interesting to know who is “trading” with who and what.
- Through the ledger it is possible to check if someone breaks the golden rule: “You must give as much as you take”.

Investors and New Alexandria

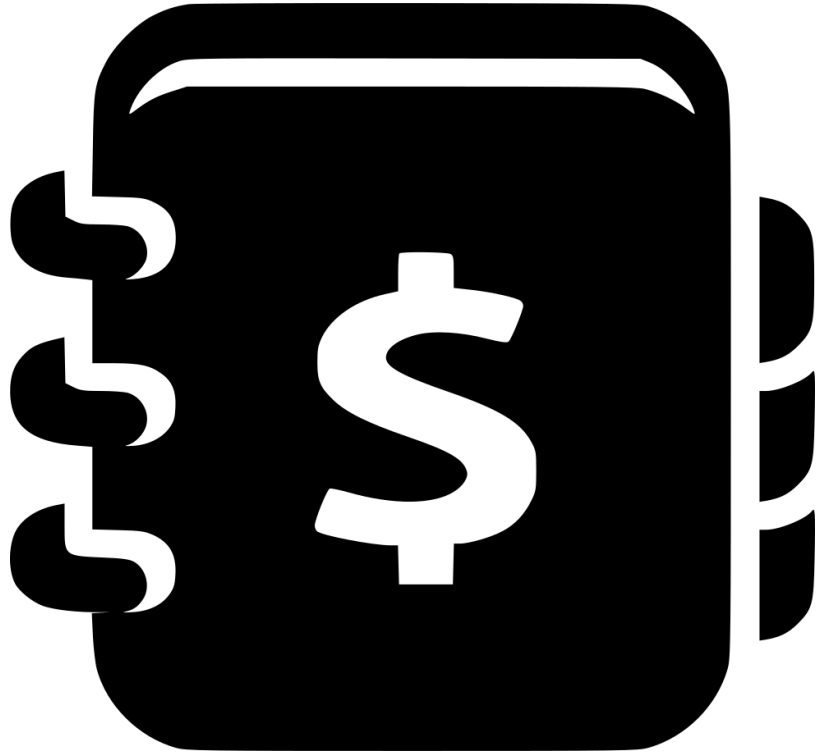


- Investors have access to the New Alexandria shared ledger so they will see the evolution of projects.
- They can link Smart Contracts to projects (e.g. under the condition of achieving certain milestone).

Data Visualization + Machine Learning and New Alexandria



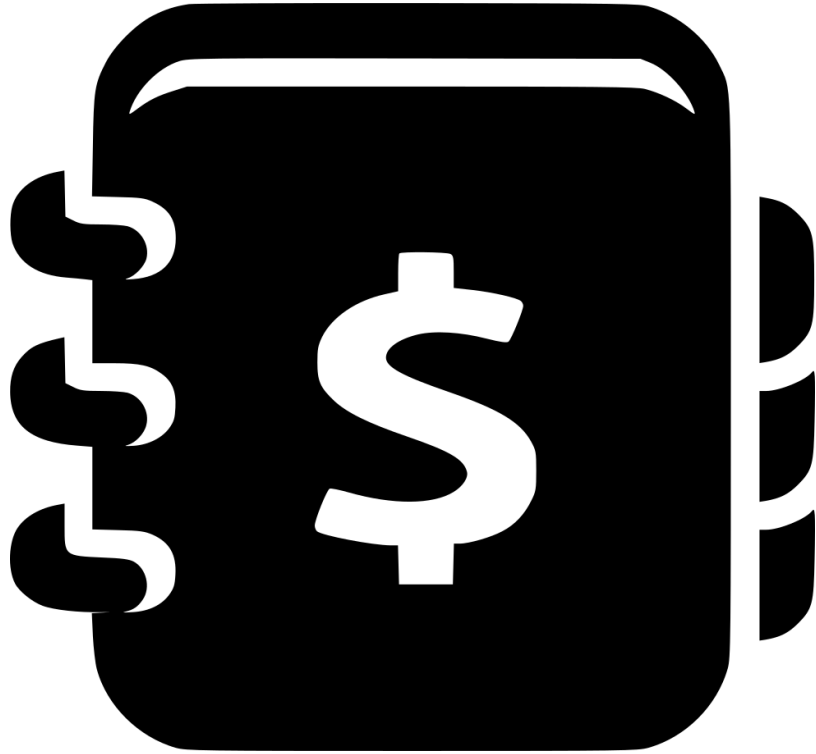
The Shared Ledger of New Alexandria (1)



An enormous database which can be used in two ways

1. Visualization
2. Forecasting

The Shared Ledger of New Alexandria (2)

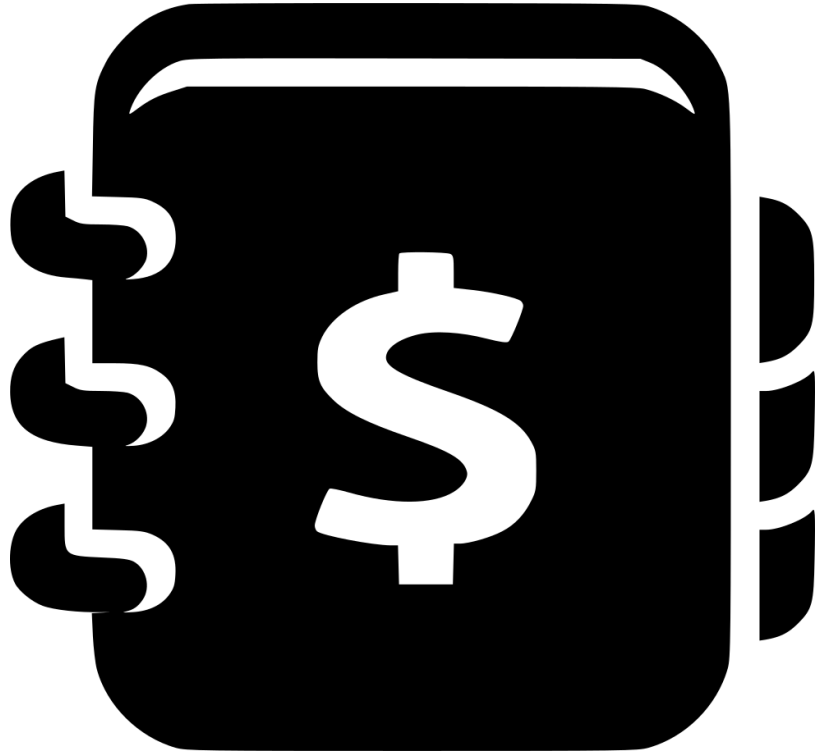


Visualization

- Who is transacting with who
- What is the most/less transacted technology
- Who is the fastest innovator

Etc...

The Shared Ledger of New Alexandria (3)



Forecasting

- What technologies will go faster to market
- How is the next big thing looking like
- In what area is likely to occur
- In what it is interesting to invest

Etc...

Finishing with some Food for Thought



What if New Alexandria

is fully virtualized?





New Alexandria is a vision to empower a future of shared Knowledge.

And it is also a way to discover what is ahead, as innovators.



Questions?