



Faculty of Design

2016

Understanding bitcoin currency and blockchain technology as a media system

Peter, Kimberley and Schaus, Michael

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Understanding

Bitcoin Currency & Blockchain Technology

as a Media System

Kimberley Peter and Michael Schaus
Strategic Foresight + Innovation
OCAD University

October 13-15, 2016

RSD⁵
SYMPOSIUM
systemic design for social complexity

{ is not }

an in-depth lesson
on, nor prediction
about, Bitcoin or
blockchain; nor is it
advocating adoption

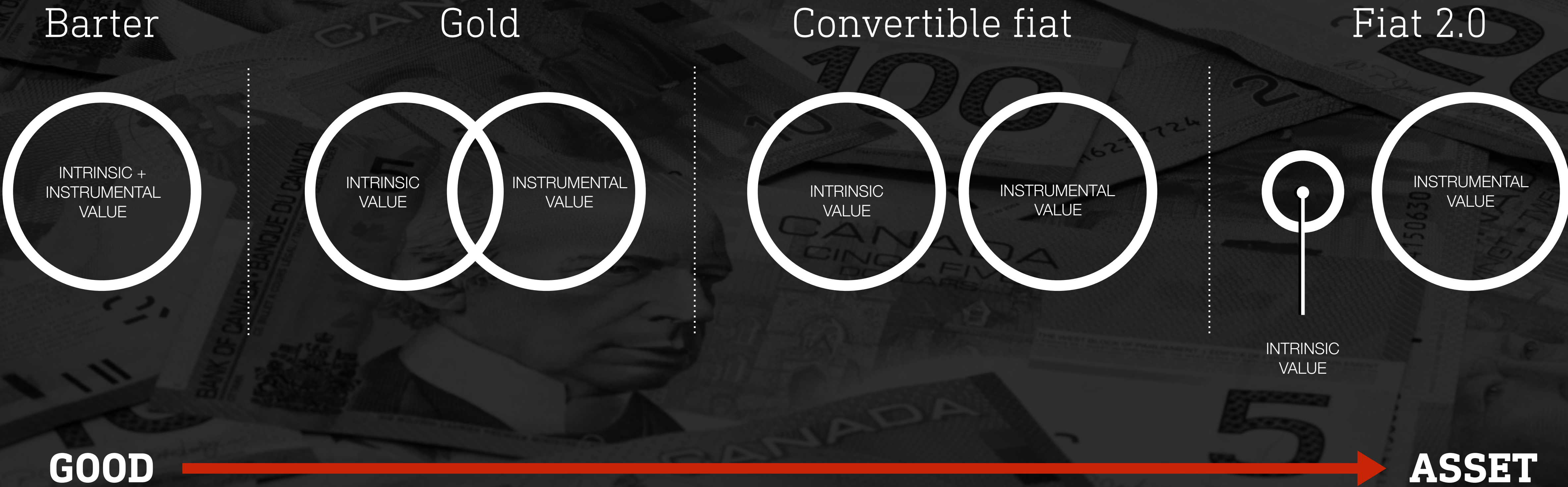


{ is }

a set of insights
from research and
application of an
integrated model to
seed scenarios

CONCEPTS

1. Money as technology



“

*Scrooges big sin was to freeze his money; for **money**, as all students of it recognize, **is of use only when it's moving, since it derives its value entirely from whatever it can translate itself into.***

— Margaret Atwood, *Payback*

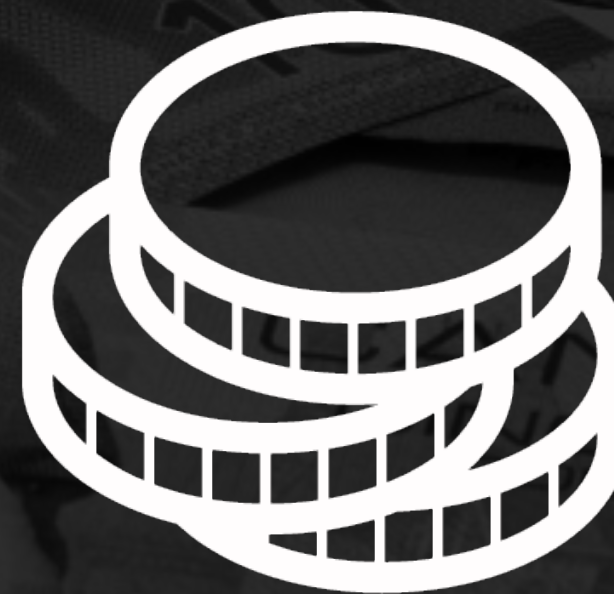
2. Complementary currencies

Fureai Kippu



Sectoral Currency

Bristol Pound



Local Currency

Bitcoin



Cryptocurrency

RESEARCH



Toronto community



Global network



Understanding context + concepts



**REVIEWED
LITERATURE**



**ANALYZED +
INTERPRETED**



**ENGAGED
SIX EXPERTS**

Understanding context + concepts

Development of a research framework



**REVIEWED
LITERATURE**



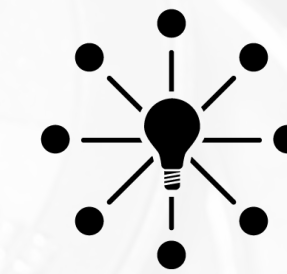
**ANALYZED +
INTERPRETED**



**ENGAGED
SIX EXPERTS**



**CONSIDERED IDEAS +
MAPPED AS MEDIA ON TETRAD**



**SHARING +
GATHERING INPUT**



**EXPLORED WITHIN SYSTEM OVER
TIME USING PANARCHY MODEL**

INSIGHT #1

Technology as leading innovation, hits up against the **slowness** of policy innovation.

INSIGHT #2

Some people and groups are early adopters out of **necessity**, e.g., remittance payments.



IDEAS

**Financial services
shouldering the risk
of bitcoin-related
transactions**

BLACK = Bitcoin
BROWN = Blockchain
.....

**Merchant commerce (B2B/B2C) -
Reduced friction and cost, with
immediacy of transaction**

**Currency without
borders**

**Knowledge of money and
where it comes from**

An interesting case study along
trajectory of earlier digital currencies
(Liberty Dollar, Chaumian eCash,
Szabo's Bitgold)

**Online shopping
and trade**
**Control over and
access to funds**

Ownership of money

**Safety of storing and
transacting in bitcoin over
being tied to central banking
systems (applies to individual,
businesses and governments)**

**Asset (value store) only used as 'flight to
safety' and not as a good (medium of
exchange)**

Definitive settlement
of transactions

**Safety of value store in
the face of unknown
deflationary decline**

Blind following of 'heat' of bitcoin
in exchanges, like fiat exchanges
(e.g., terrorist initiated 'puts')

**Banking for everyone
(including criminals)**

Tangibility of cash

**Traditional centralized
stock exchanges**

Transaction reversal

**Bricks & Mortar
stores**

**Current regulations and
compliance policies for
existing B2B interactions**

US Treasury Bills
as a safety net

Management of balance of
medium of exchange and holder
of value (slows velocity)

**Forms of digital payment that support
centralized banking structures
(e.g., Paypal, Apple Pay, Google Wallet)**

Monoculture/
monocurrency



RESEARCH PROCESS — IDEAS

Decentralized activism
(on the blockchain)

IDEAS

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Trust for access

Business/data
monopolization by big
Internet companies

Online shopping
and trade

Control over and
access to funds

Ownership of money

Decentralized power
of issuance

Definitive settlement
of transactions

Transactional trust
(math as contract)

Innovation
(and accelerates it)

Safety of value store in
the face of unknown
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Asset (value store) only used as 'flight to
safety' and not as a good (medium of
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Seeking 'Breach
opportunities' (Increased
incentive to destabilize reliability,
stability, pseudonymity afforded
by blockchain)

Banking for everyone
(including criminals)

Evolution of the Internet
(birth of IoT, new business
models, access and usage/
citizens of the Internet)

P2P Exchange
(removes third party
intermediaries)

Tangibility of cash

Anonymity
(pseudonymity)
of transactions

Thinking through the
incentive dynamics
unique to any system

Transaction reversal

Middlemen

Traditional centralized
stock exchanges

Upside of barter (robust sense of
shared value in the moment +
open opportunities of digital
market

Opportunism tipping the balance
away from real value to empty or
misguided messaging and products

Current regulations and
compliance policies for
existing B2B interactions

Need for 3rd party in
transactional
relationships

Bricks & Mortar
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Tangibility of risk
(materiality in the area of
investment)

Maxxing out utility
of investment

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Monoculture/
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Intimacy of transactions

Policy and freedom of pre-Internet
Web 1.0 days

Innovative potential in
value-yielding businesses
and products

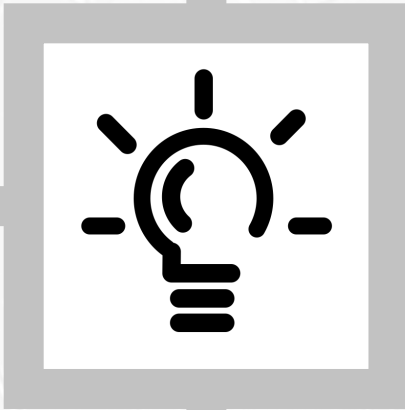
Obsessive security

Face-to-face social
engagement



Media Tetrad

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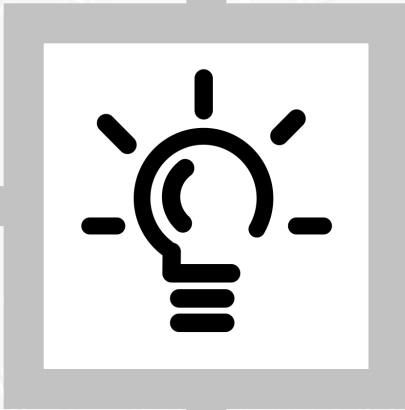




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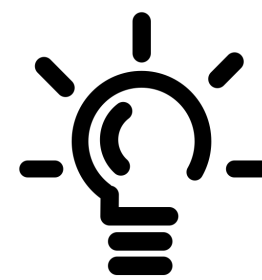
*What does the
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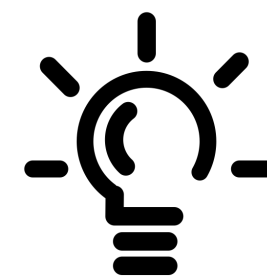
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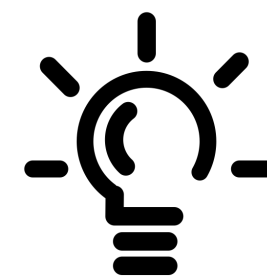
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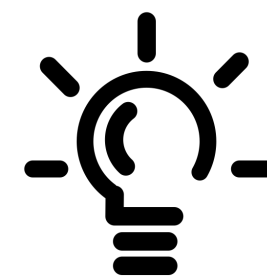
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◀ **FIGURE**

GROUND ▶

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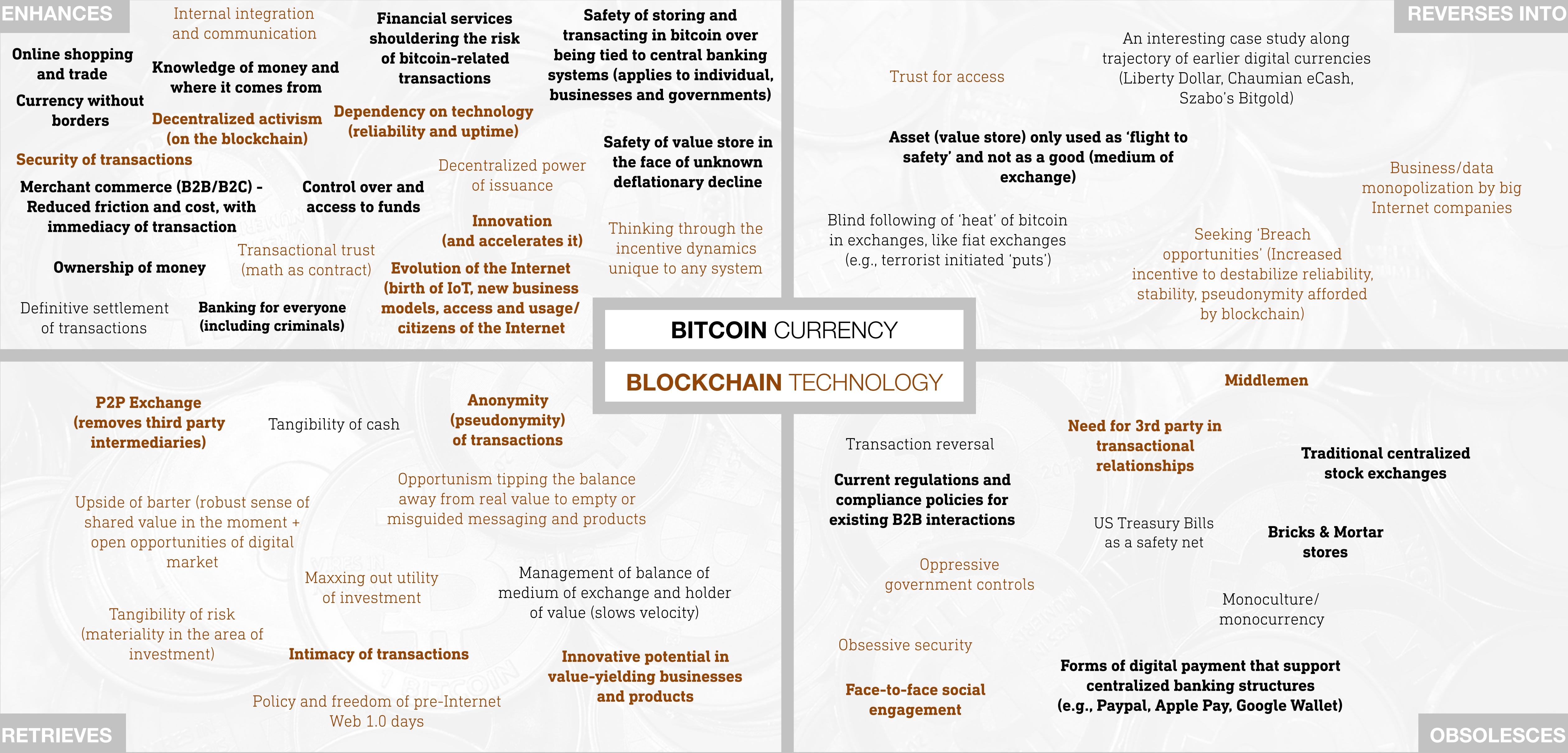
Monoculture/
monocurrency

**Traditional centralized
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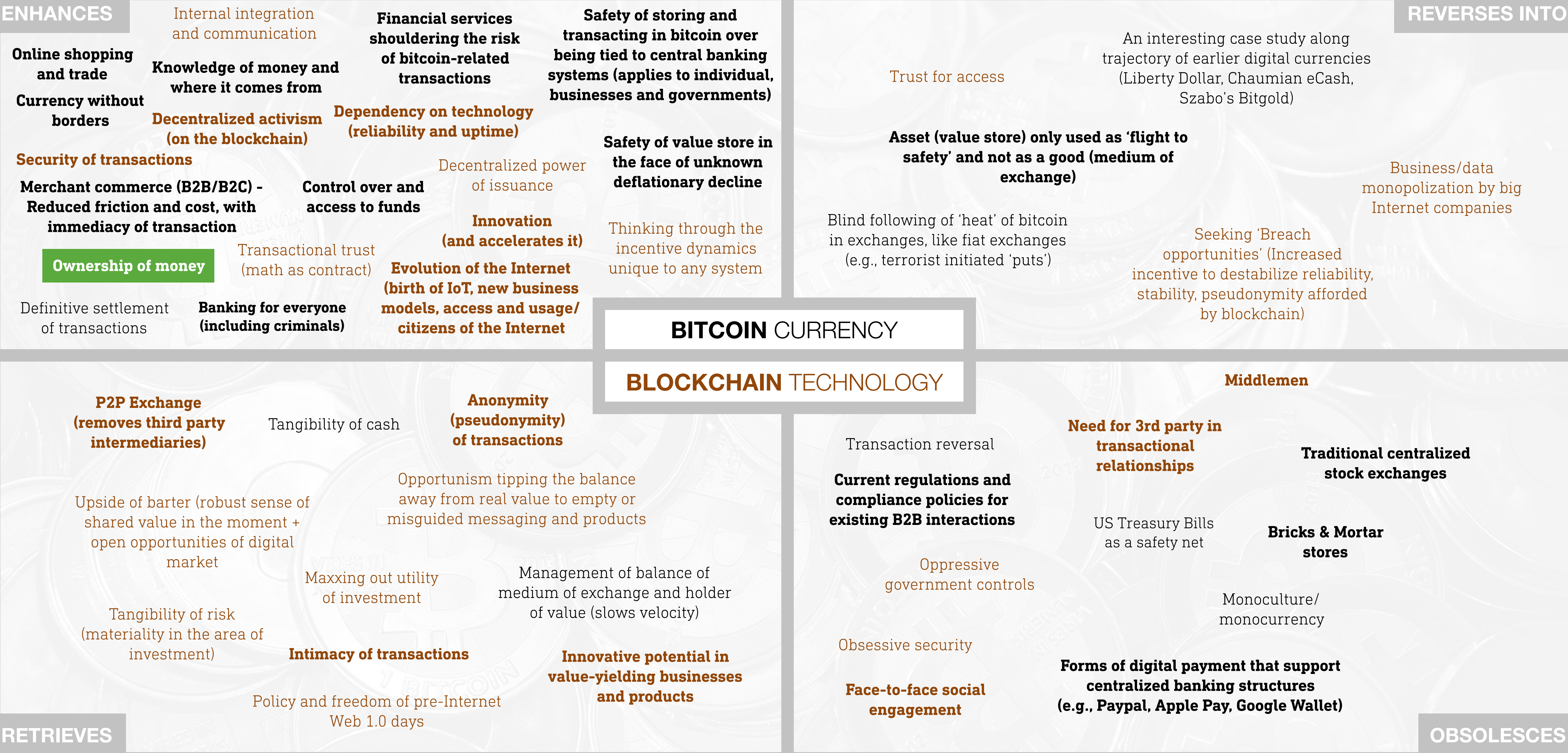
IDEAS Mapped on Media Tetrad

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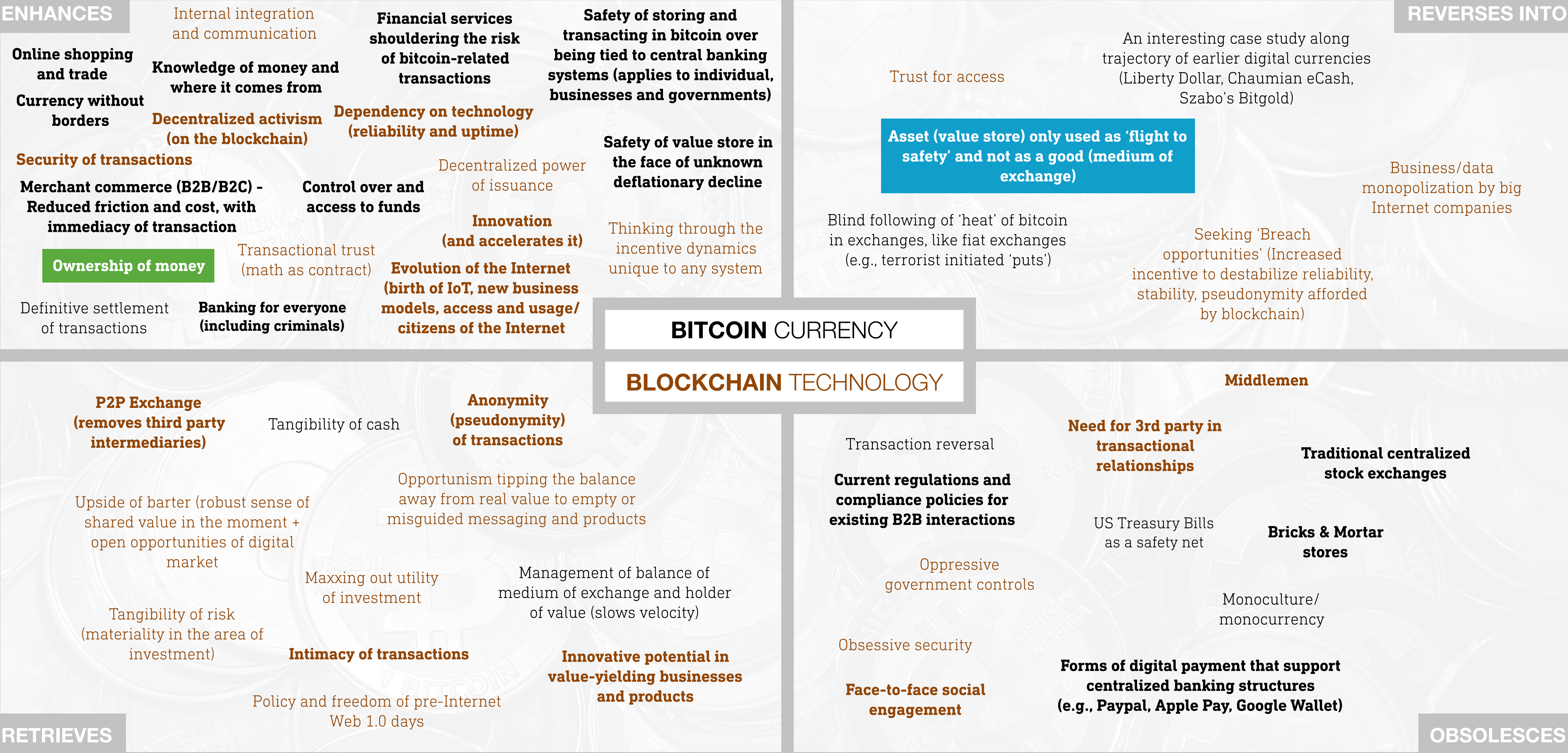
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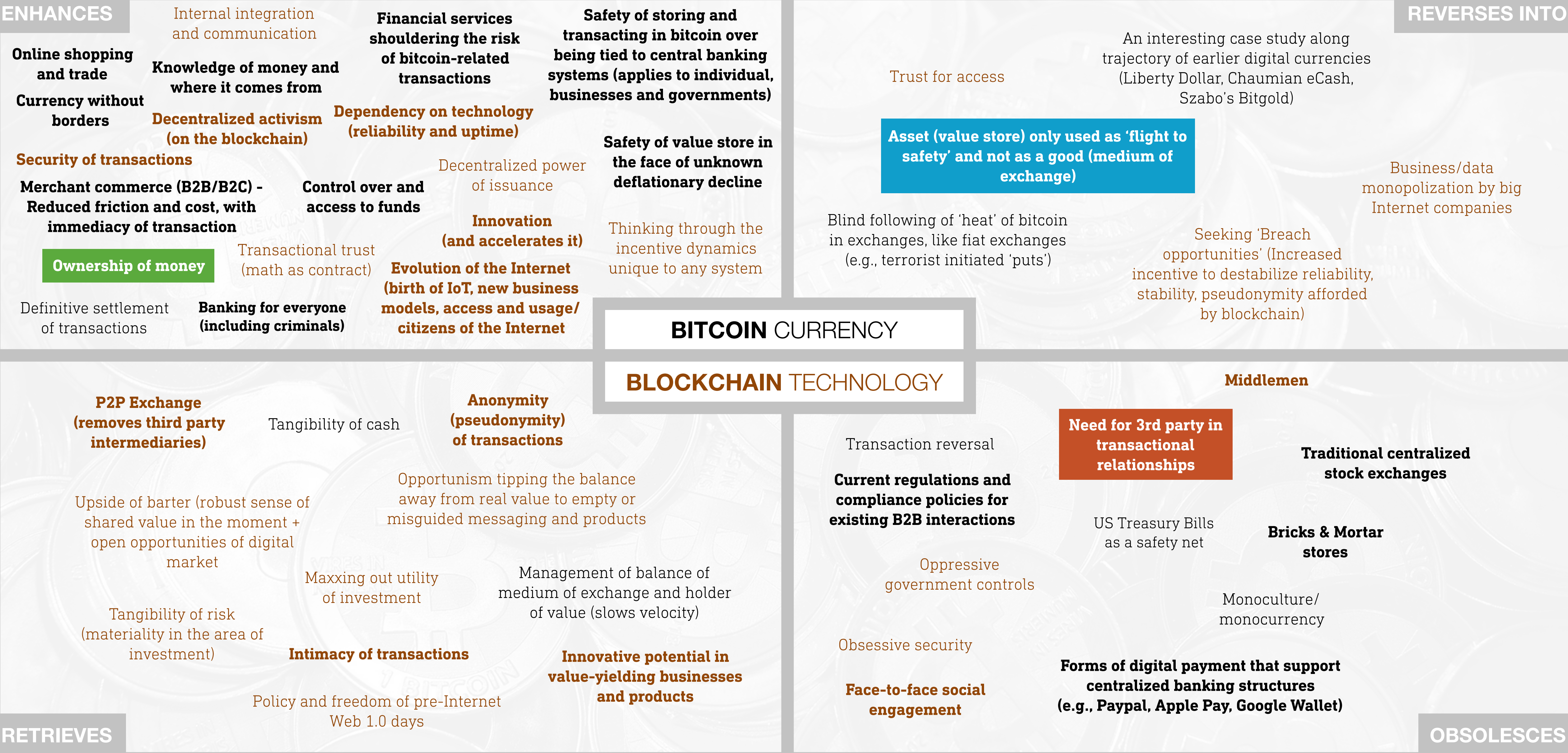
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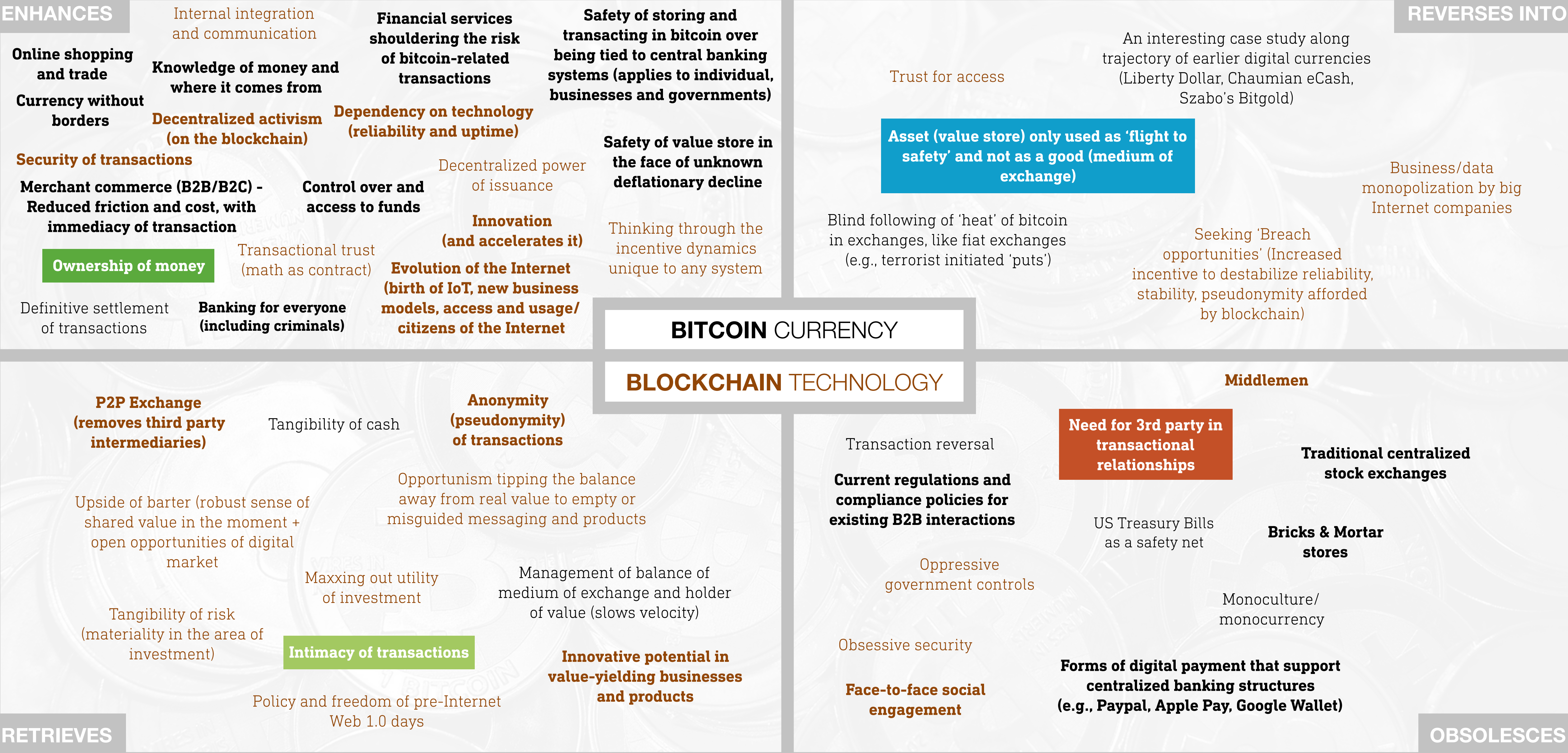


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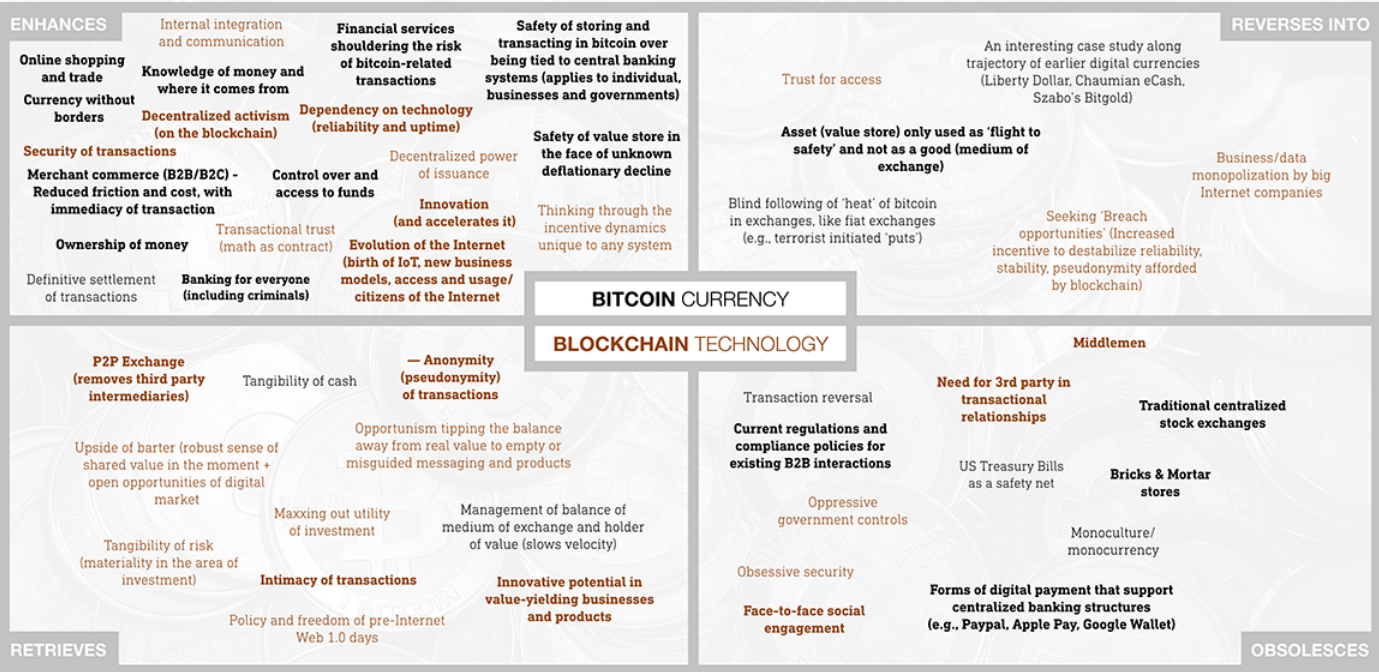
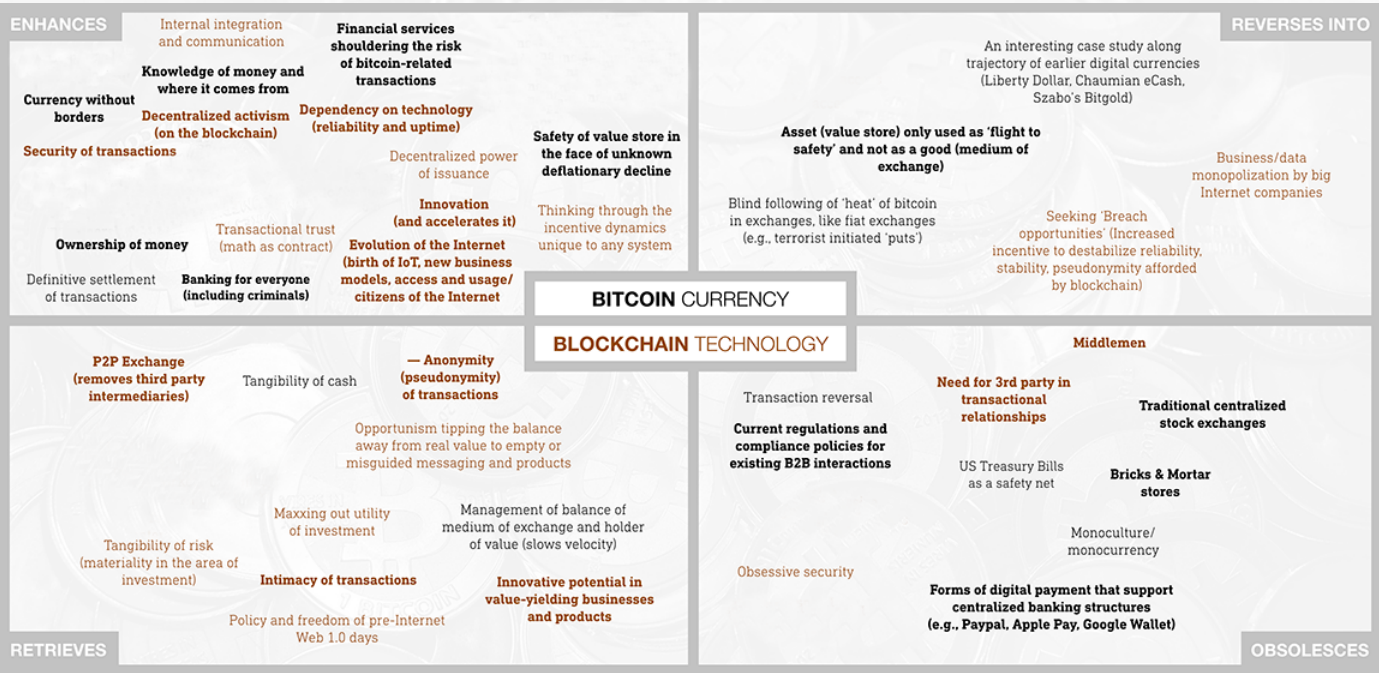
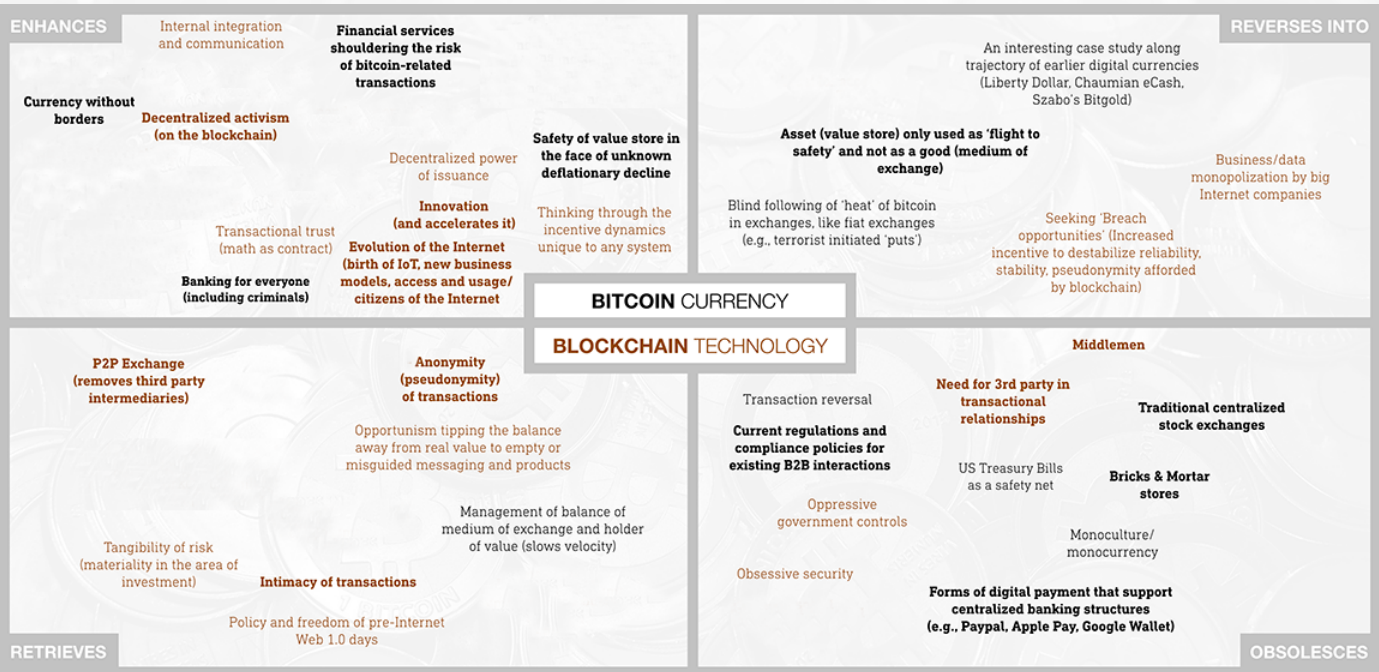


Media Tetrad at Three Levels of Economy

MACRO LEVEL
National Currency / Policy

MESO LEVEL
Financial Services

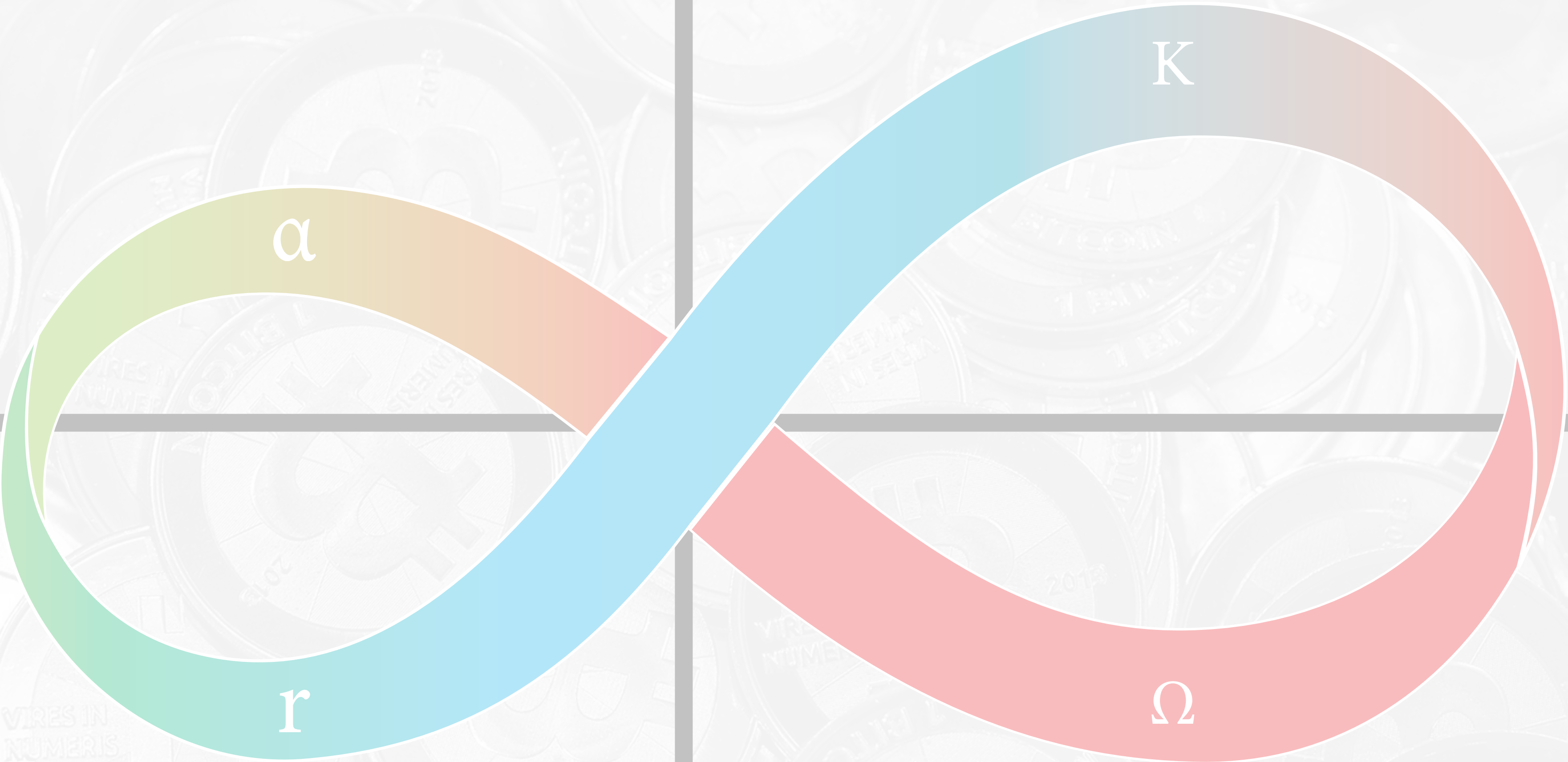
MICRO LEVEL
Real Economy



What might the impact be over time?

Panarchy Model

Gunderson, L. H. and Holling, C. S. (eds). (2001).
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CONSERVATION (K)

“Slow accumulation and storage of energy and material—the sustained plateau or maximum population”

GROWTH (r)

“Rapid colonization of recently disturbed area—the instantaneous rate of growth of a population”

α

r

Ω

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“Tightly bound accumulation of biomass becomes increasingly overconnected until suddenly released—the ultimate limit”

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“Rapid colonization of recently disturbed area—the instantaneous rate of growth of a population”

α

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REORGANIZATION (α)

“Appearance or expansion of organisms that begin to capture opportunity—the pioneer species”

CONSERVATION (K)

“Slow accumulation and storage of energy and material—the sustained plateau or maximum population”

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“Tightly bound accumulation of biomass becomes increasingly overconnected until suddenly released—the ultimate limit”



SPRING

REORGANIZATION (α)

“Appearance or expansion of organisms that begin to capture opportunity—the pioneer species”

GROWTH (r)

“Rapid colonization of recently disturbed area—the instantaneous rate of growth of a population”



SUMMER



AUTUMN

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“Slow accumulation and storage of energy and material—the sustained plateau or maximum population”

CREATIVE DESTRUCTION (Ω)

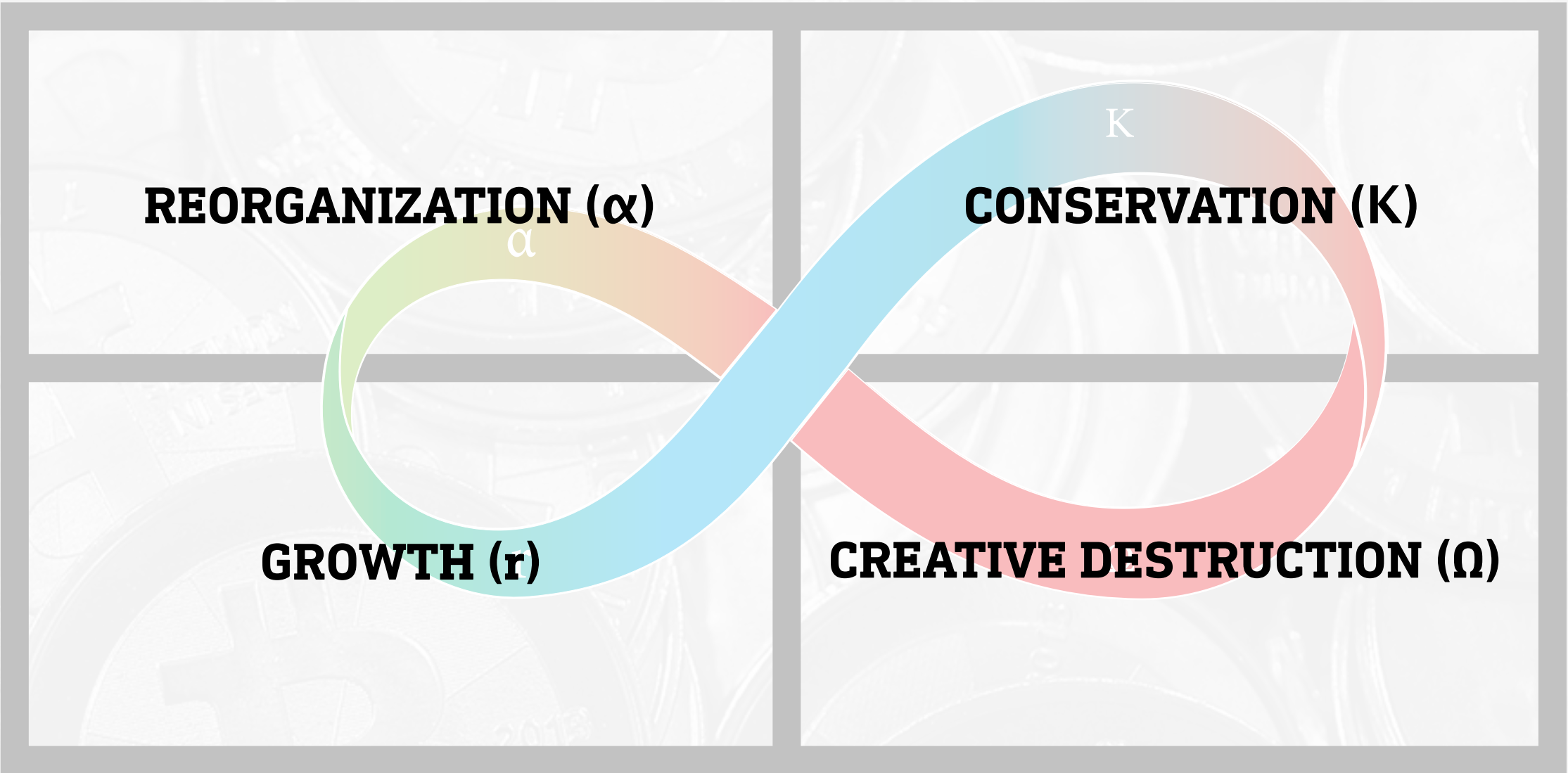
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WINTER



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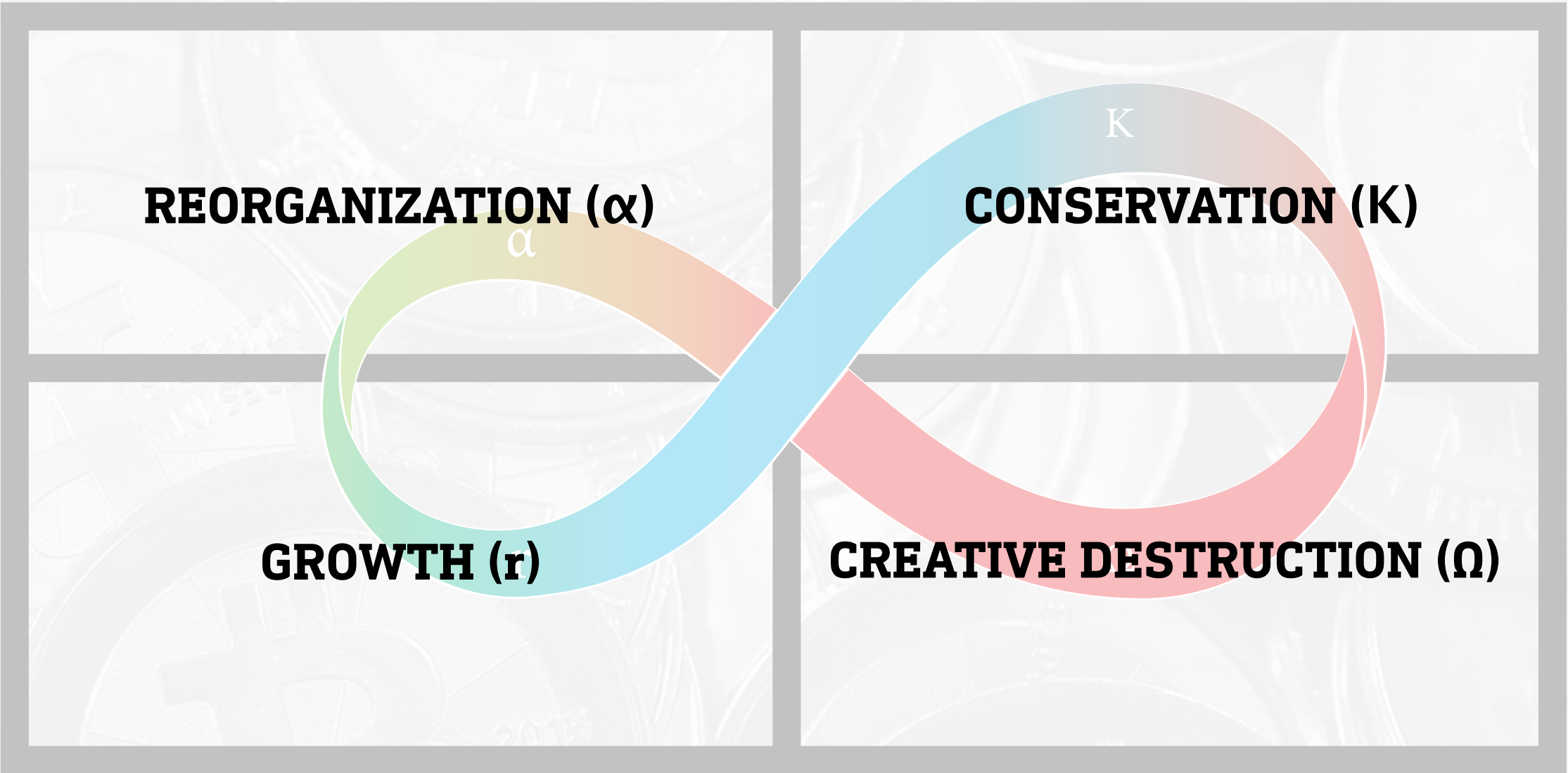




Tetrad Nested in Panarchy

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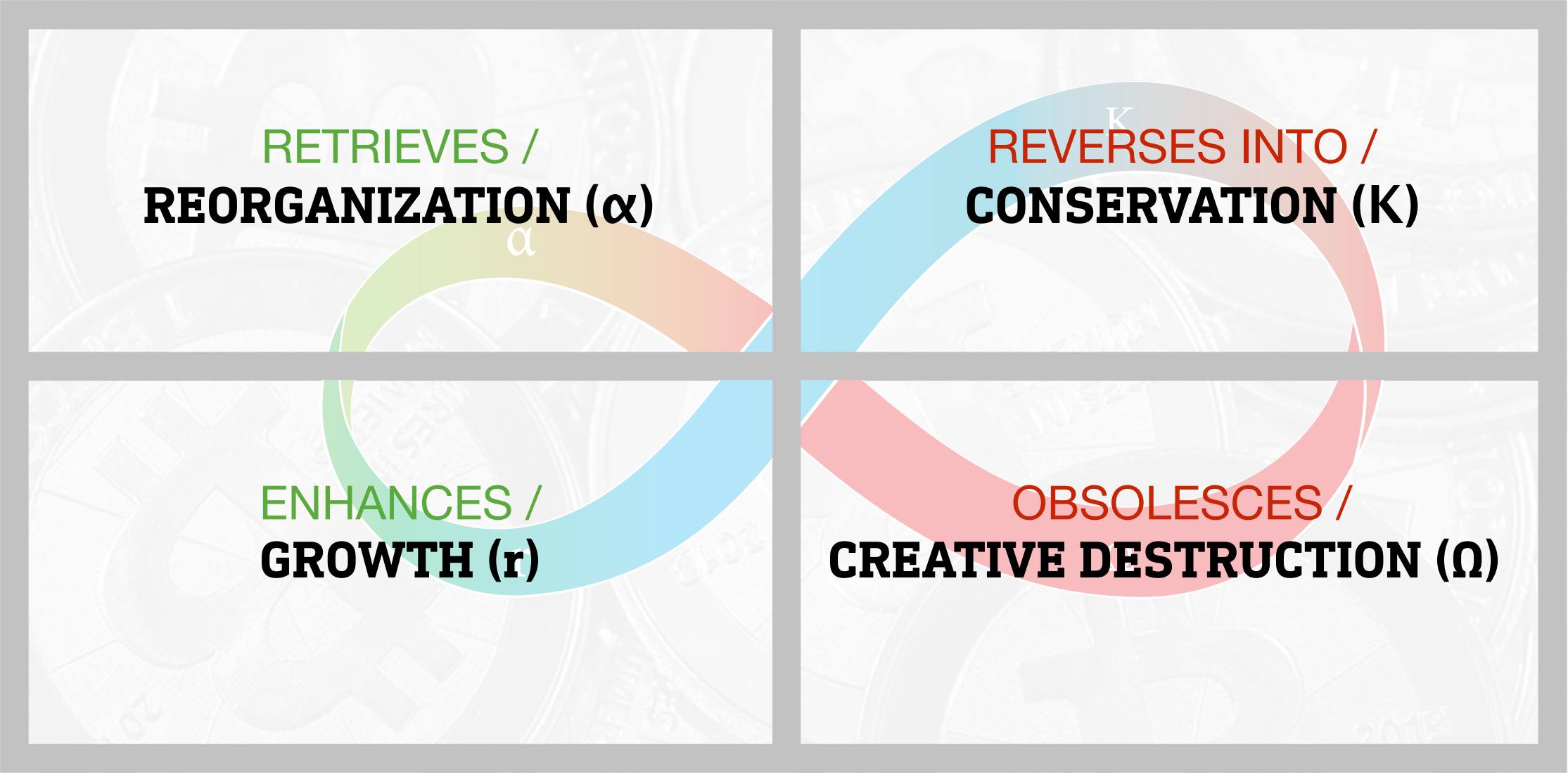
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 SPRING

AUTUMN 

RETRIEVES /
REORGANIZATION (α)

**REVERSES INTO /
CONSERVATION (K)**

ENHANCES /
GROWTH (r)

**OBSOLESCE /
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WINTER 

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ENHANCES /
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OBSOLESCE /
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SUMMER

WINTER

FIGURE / GOOD

GROUND / ASSET



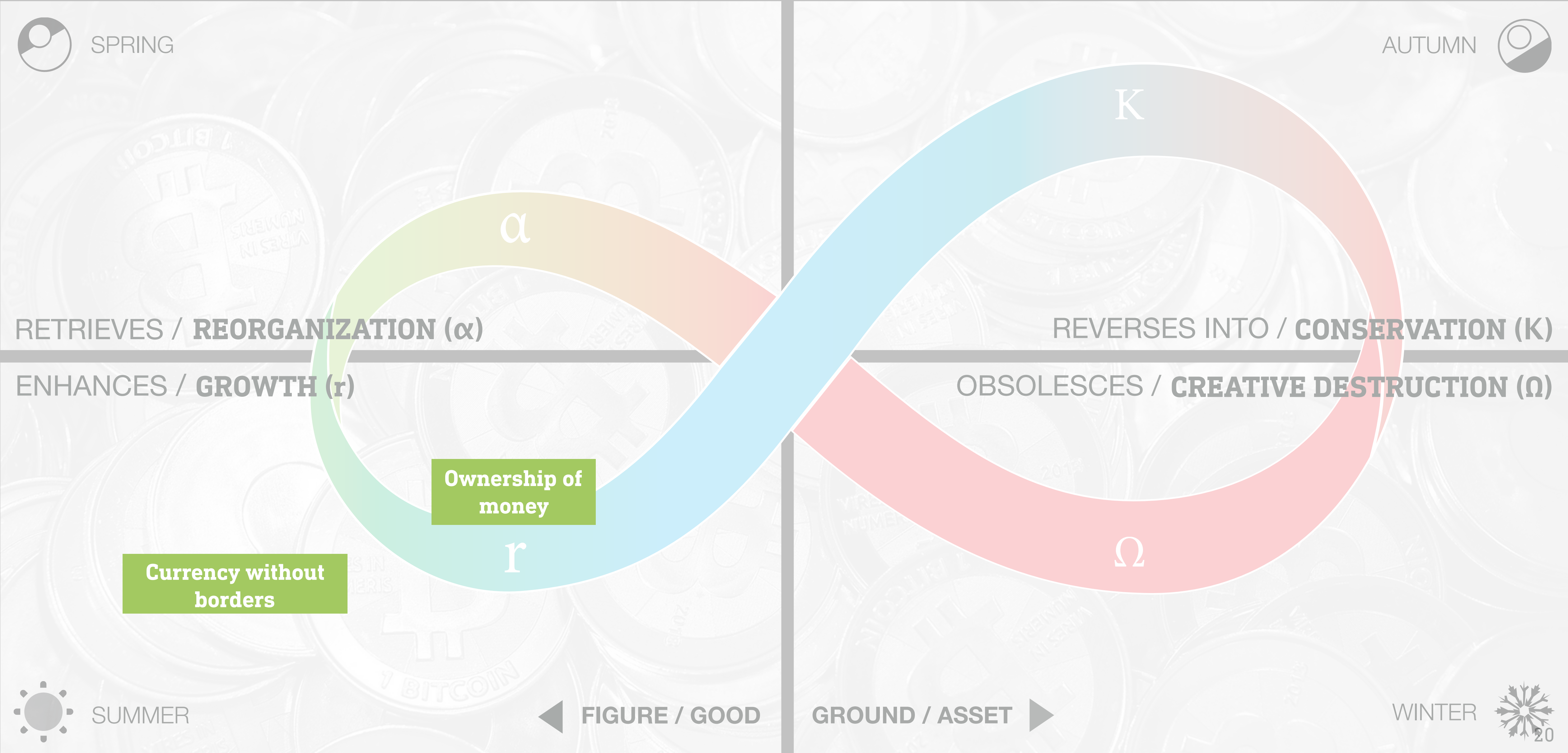
Narrative: Remittance at Real Economy Level



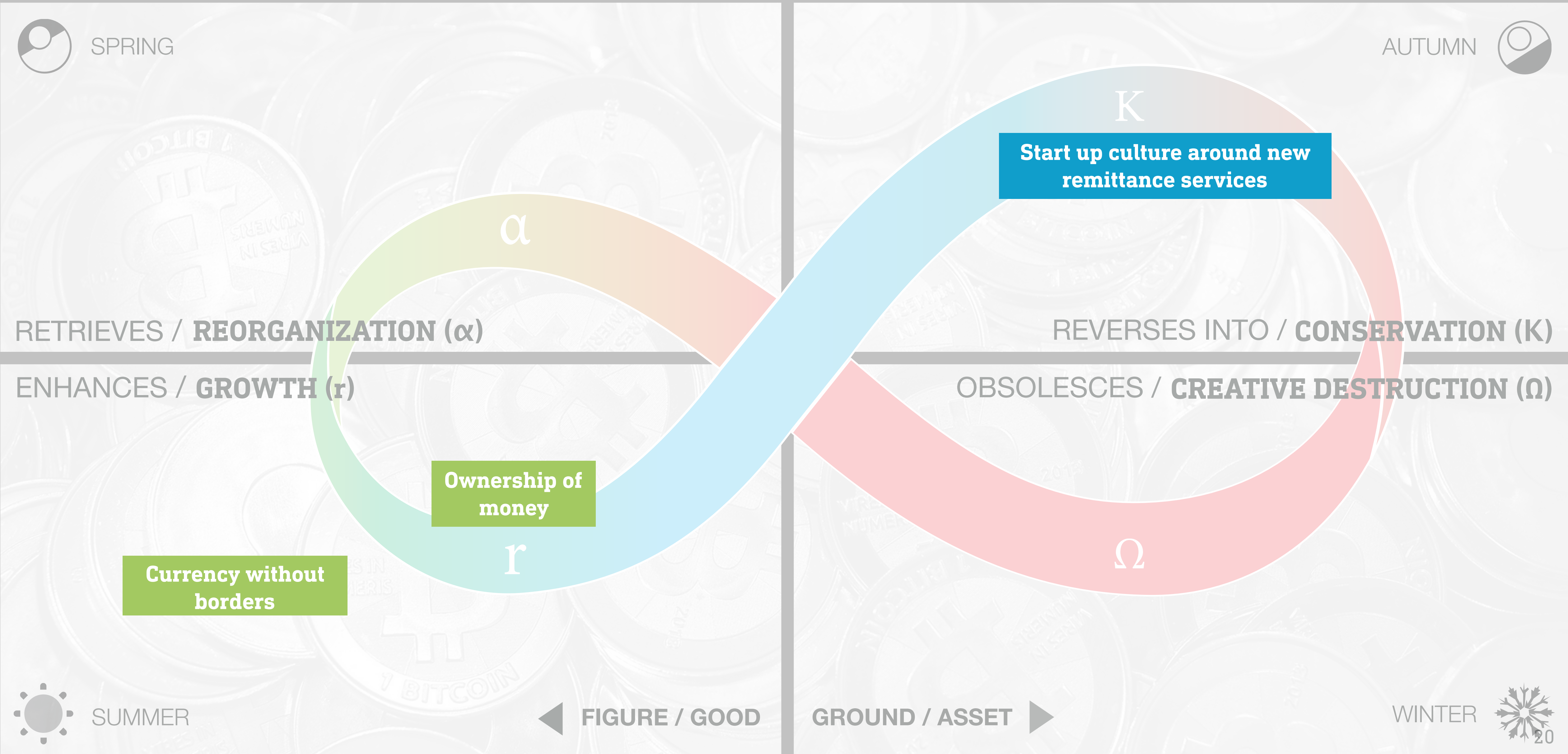
Narrative: Remittance at Real Economy Level



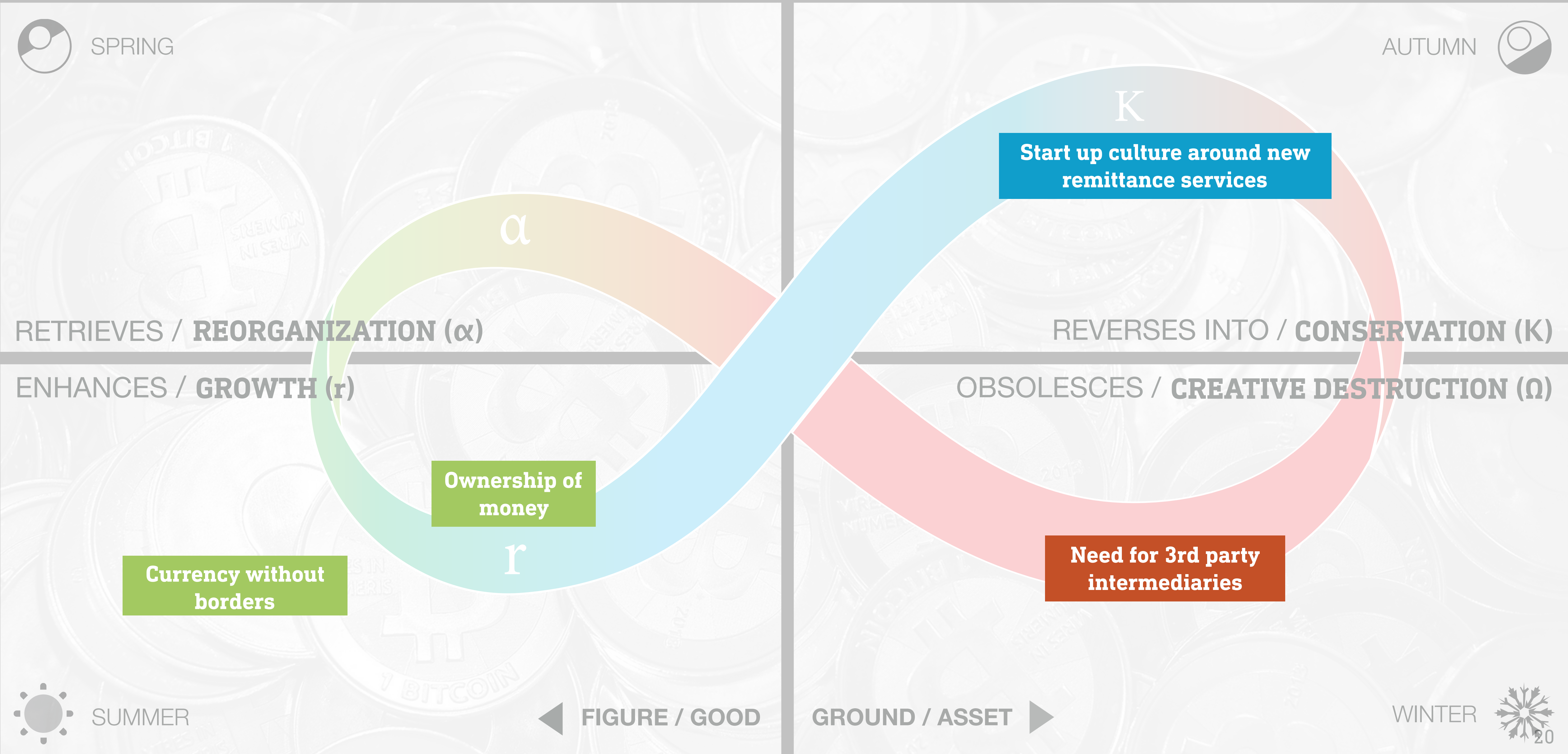
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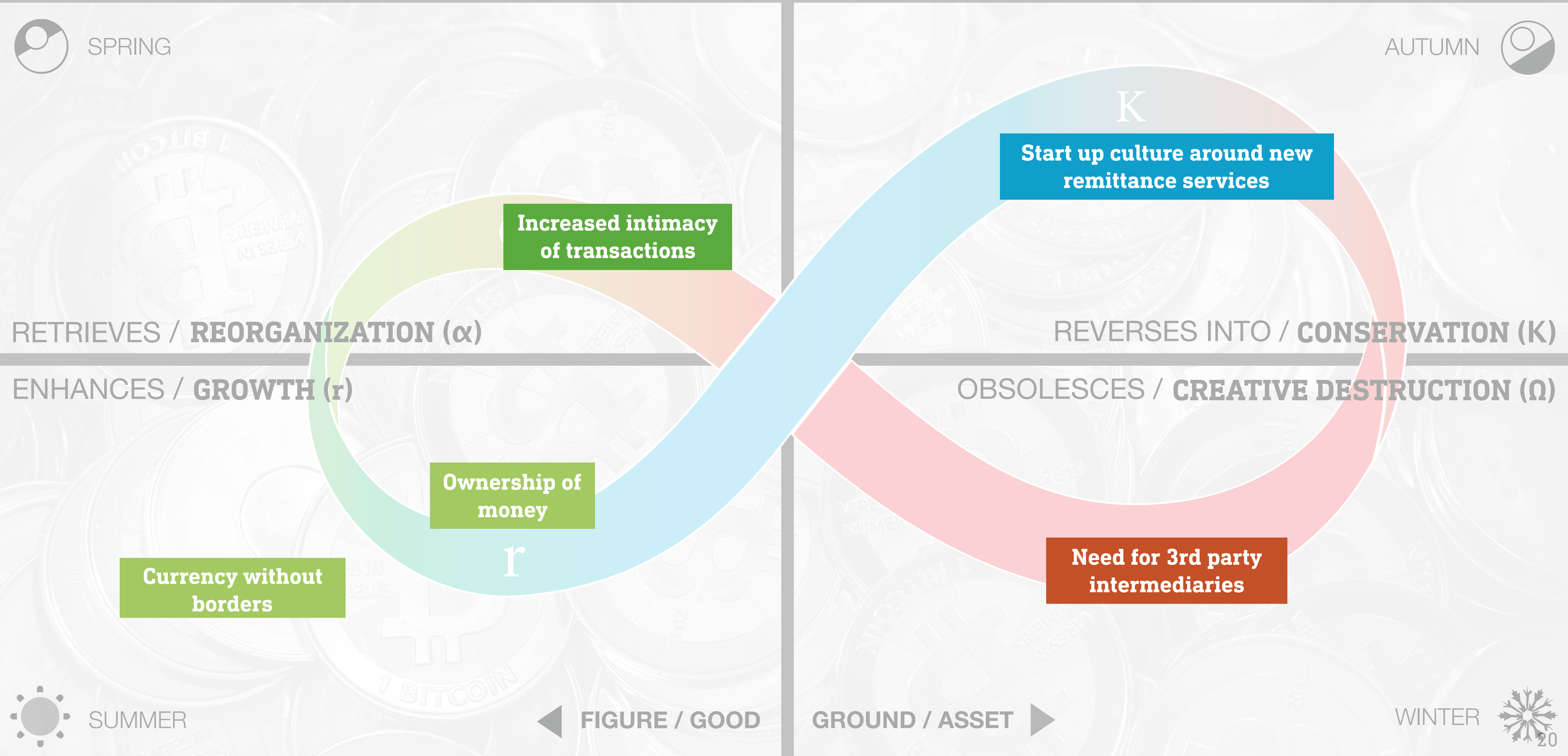
Narrative: Remittance at Real Economy Level



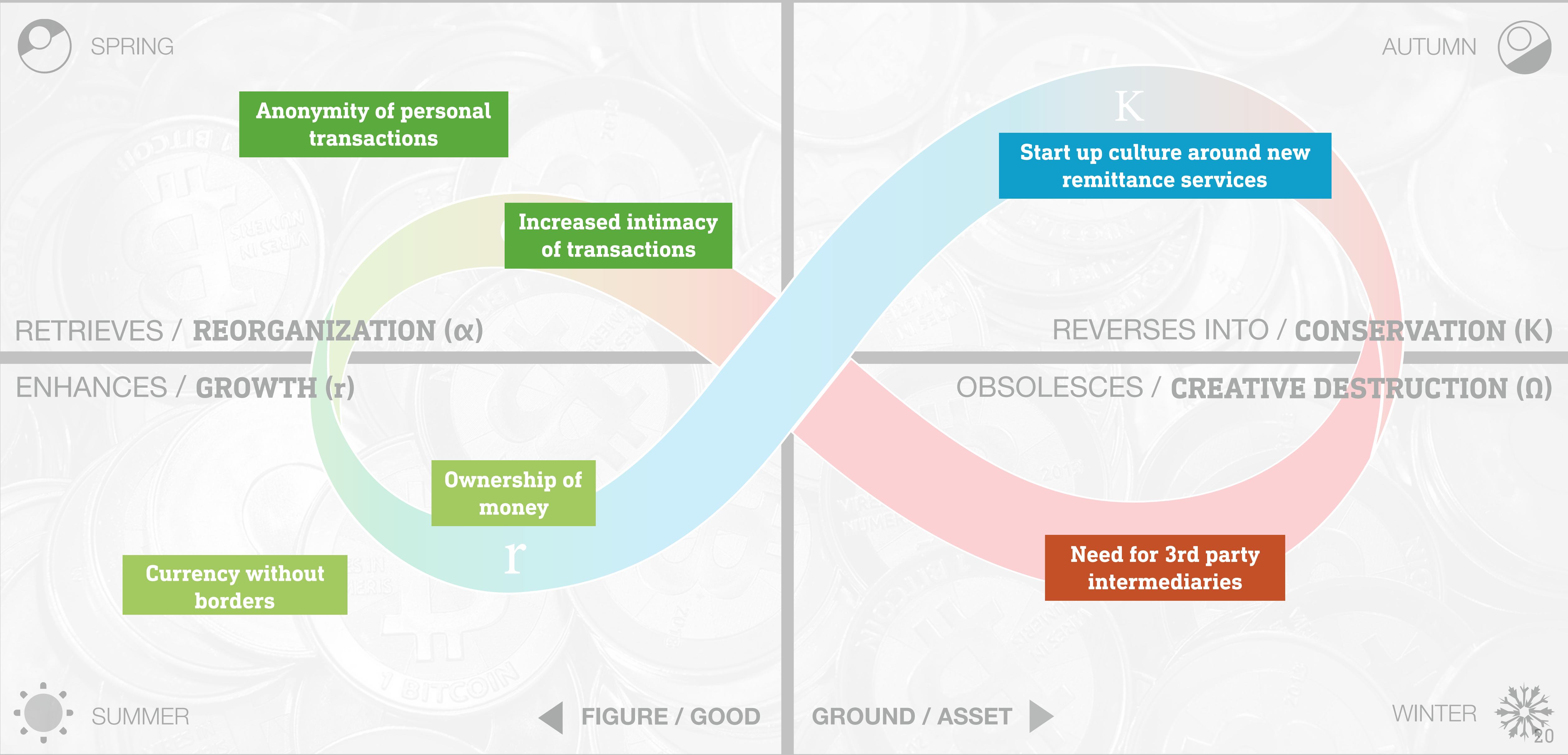
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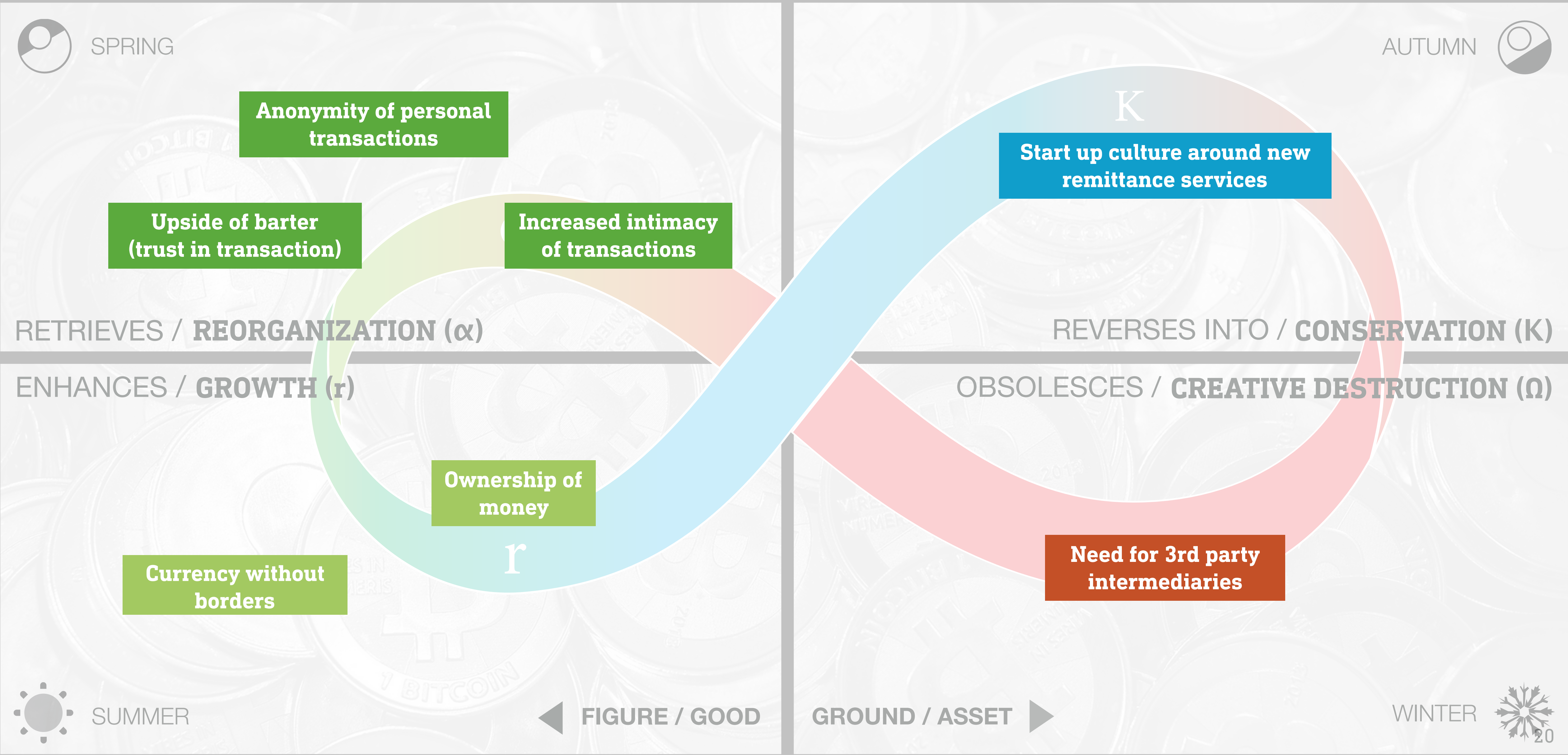
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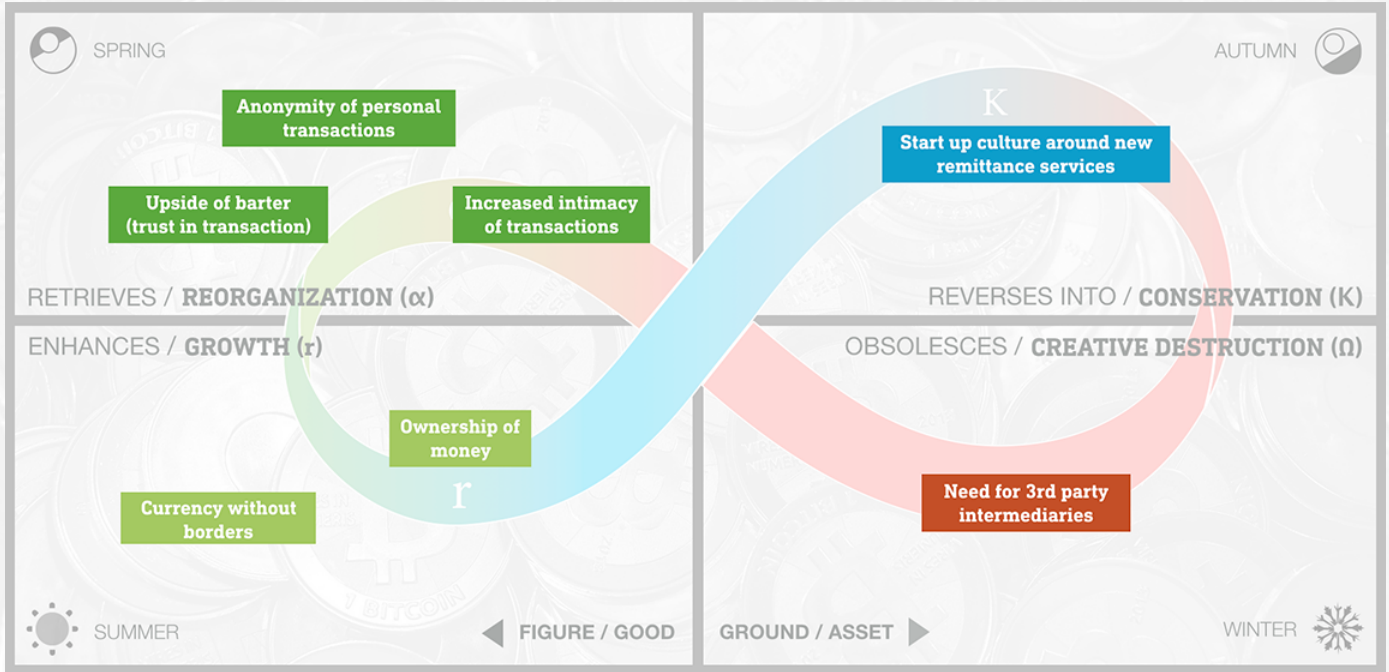
Narrative: Remittance at Real Economy Level



***How might this play out through levels
of the financial system?***

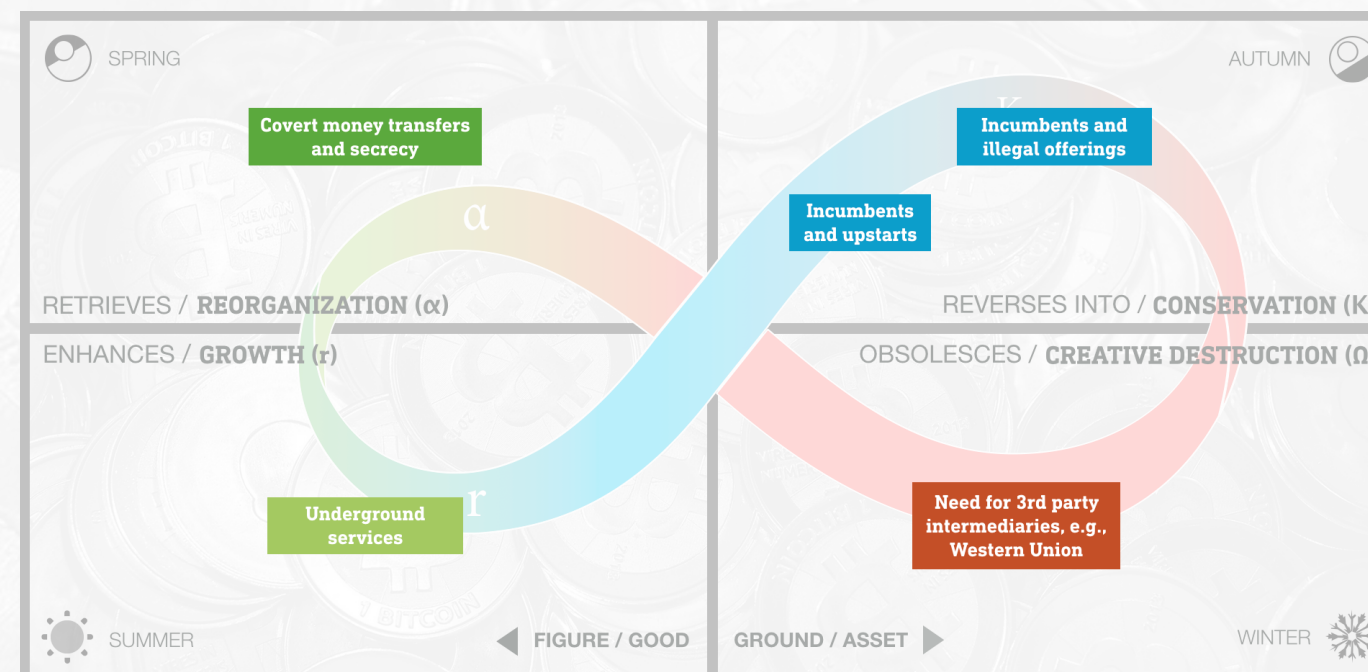
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MICRO LEVEL
Real Economy Level

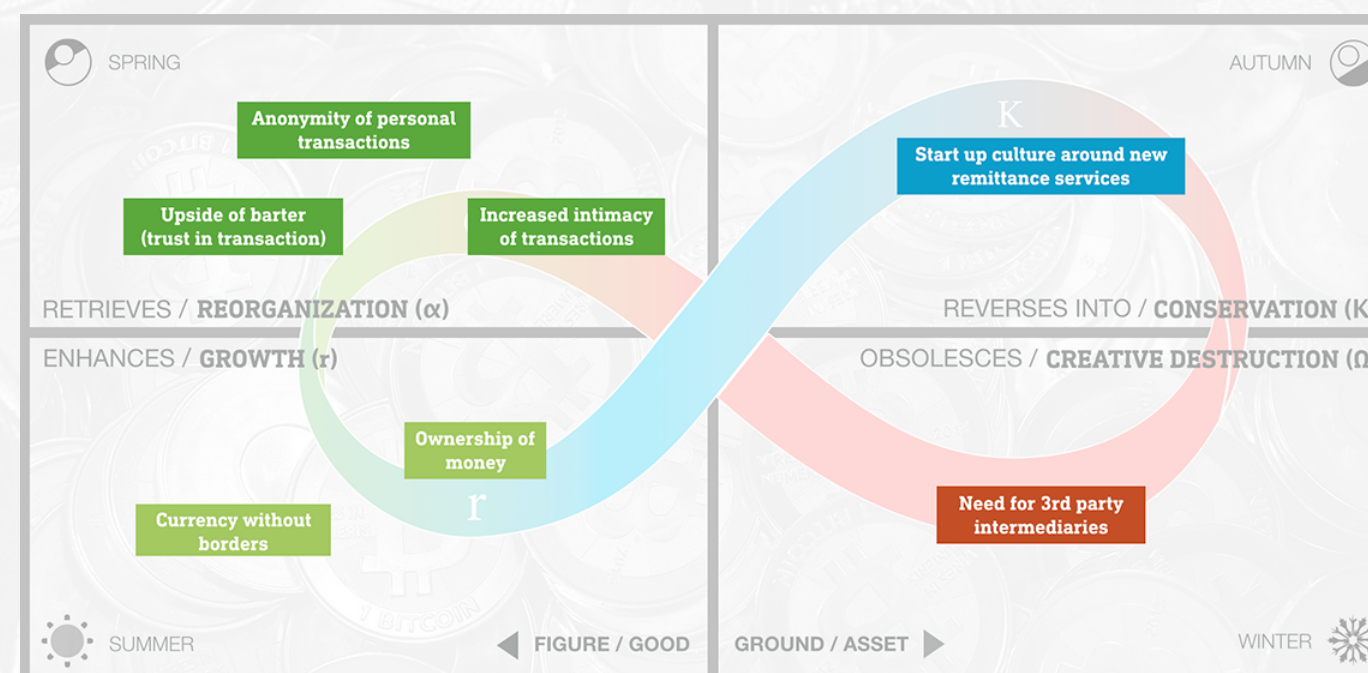


Narrative: Remittance at Three Levels of System

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Financial Services



MICRO LEVEL
Real Economy Level

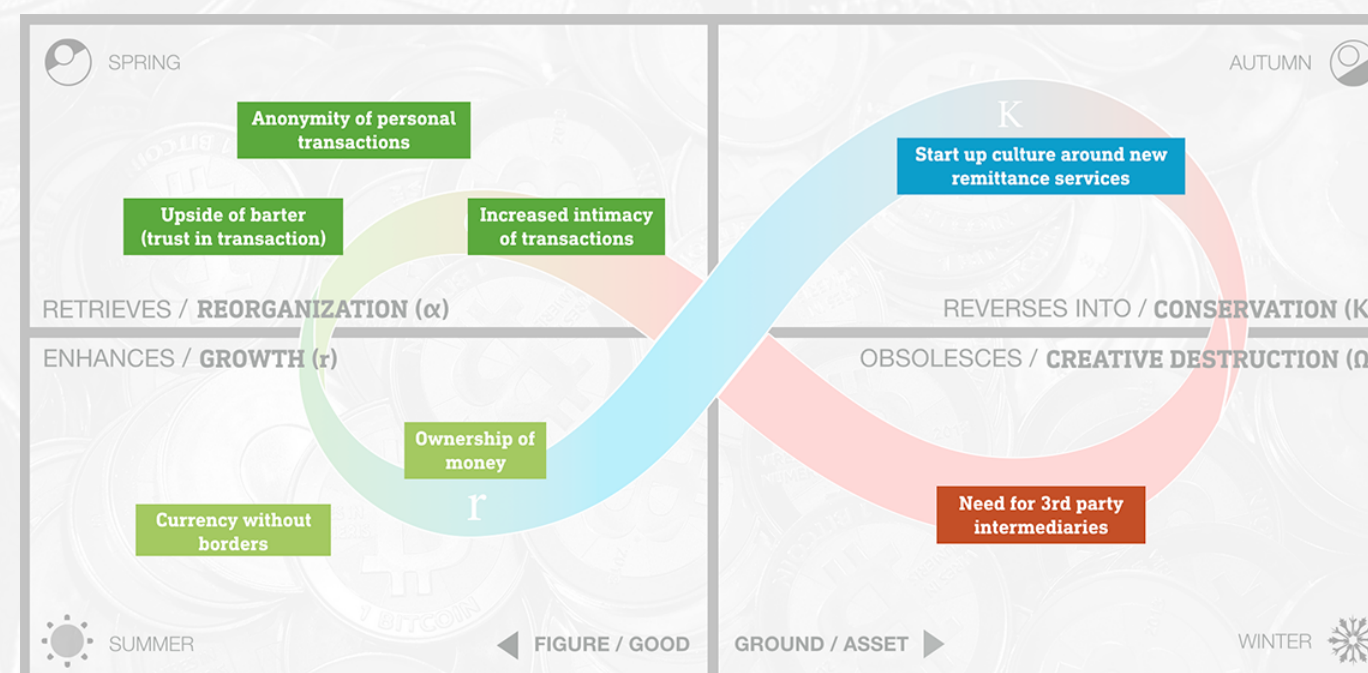
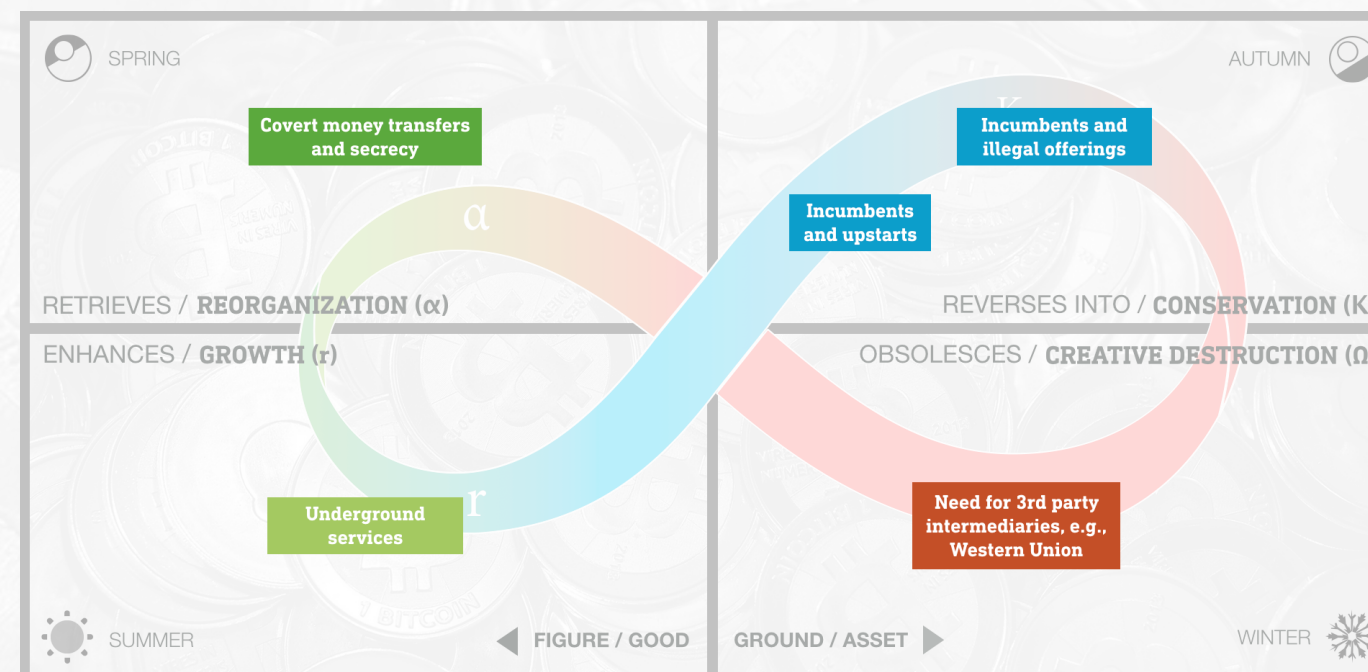
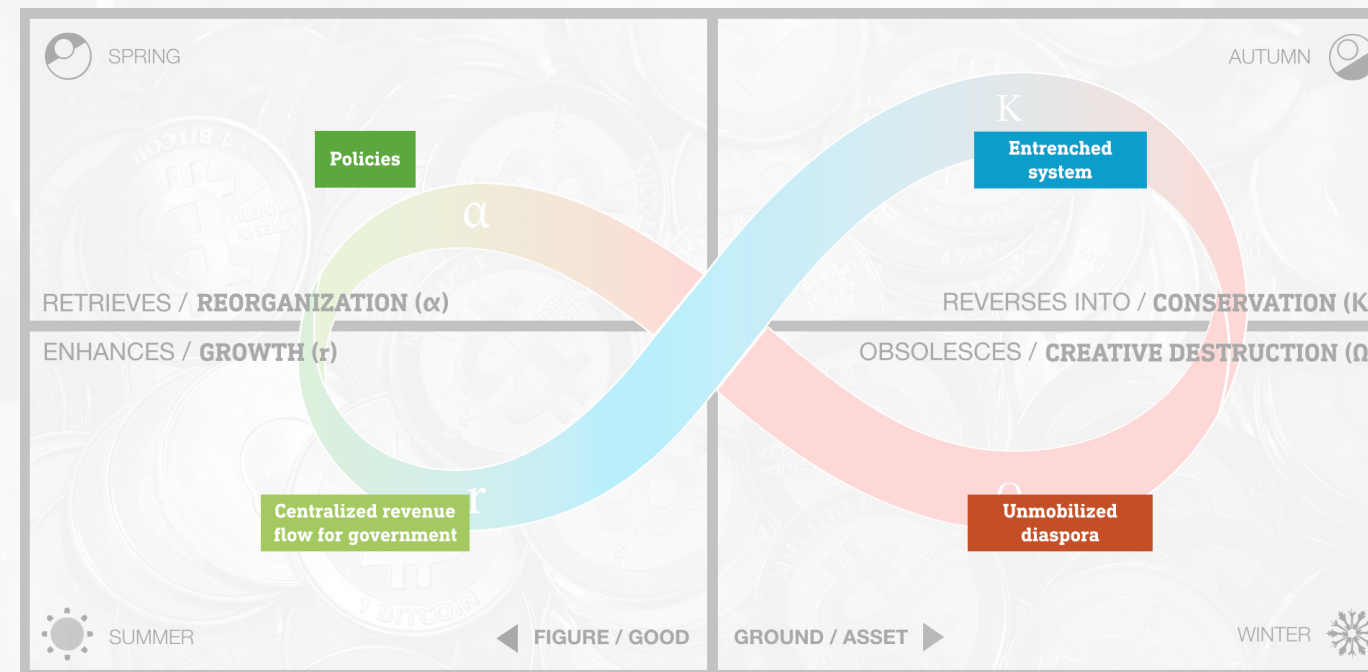


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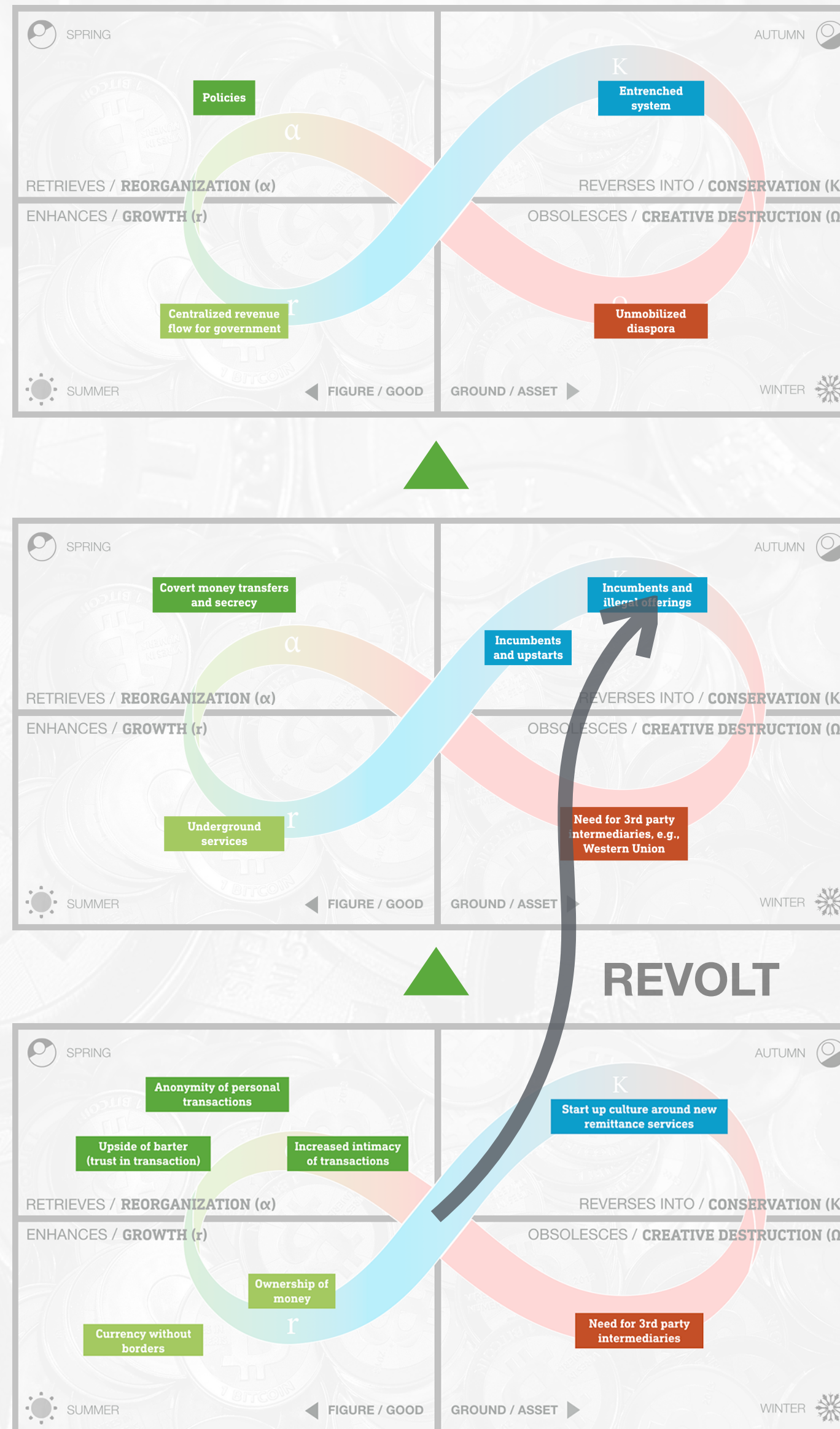


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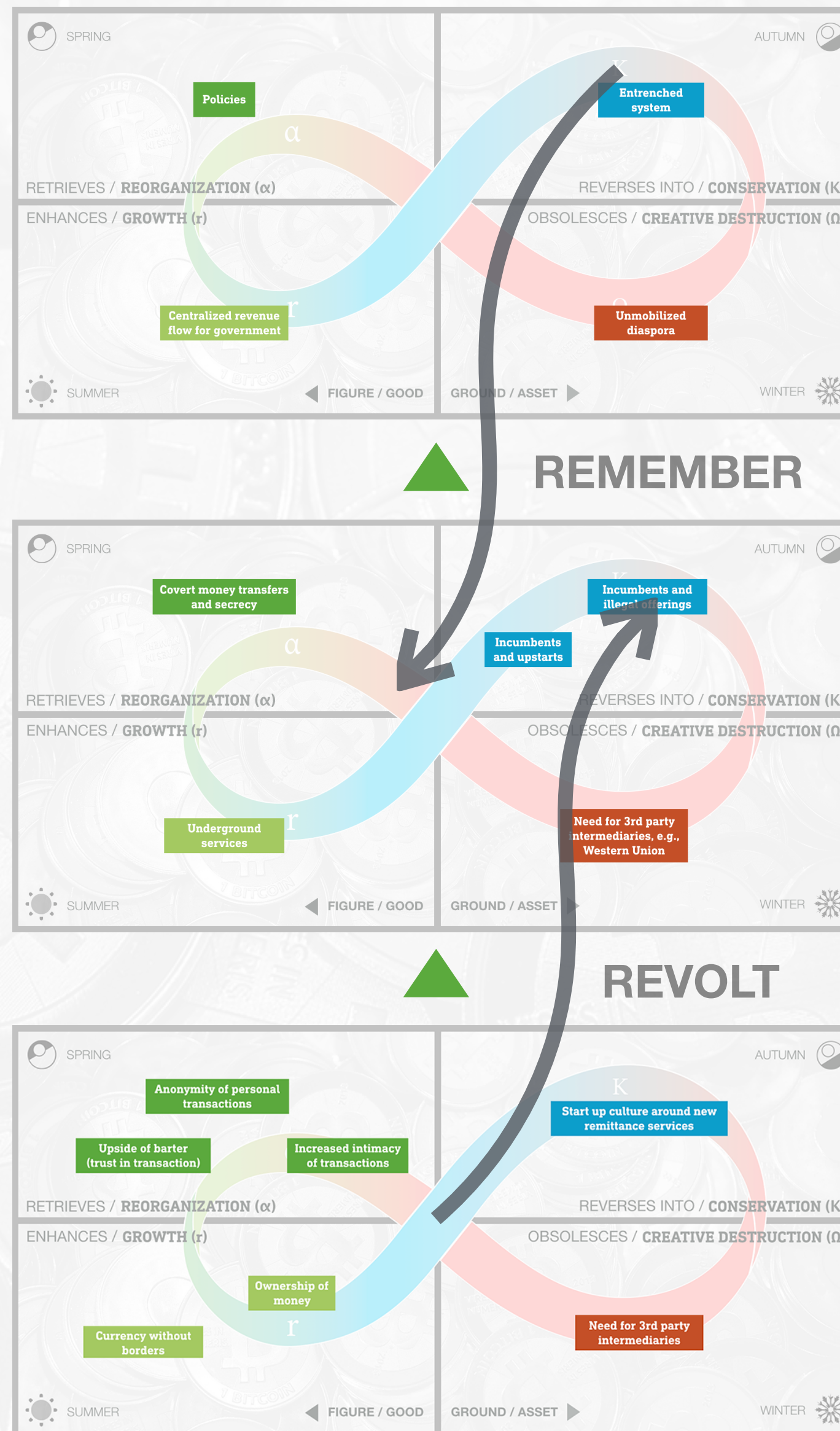


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***How might remittance be an entry point
for Bitcoin's potential to bank the
unbanked towards the emergence of a
“digital middle class”?***

FUTURE WORK

Media Tetrad

Aggregate emergence —
within and across quadrants
and at levels of system

Panarchy Model

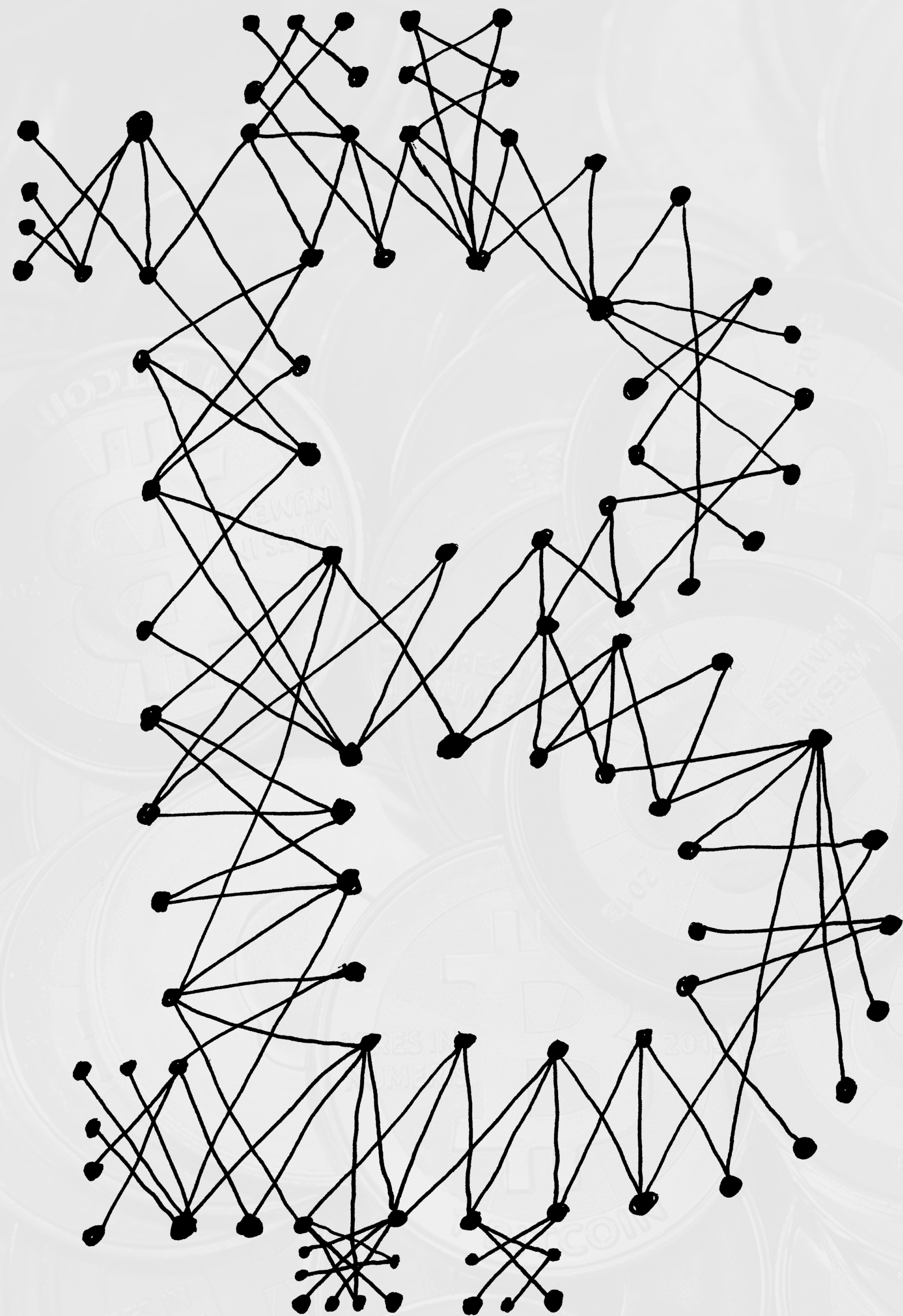
Taking emergent ideas
through time and narrative
— both *horizontally and*
vertically

Integrated Model

Its usefulness as a scenario-seeding tool needs further exploration

More applications of the models together are needed

What applications of this integrated model can you imagine?



THANKS!

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RSD⁵
SYMPOSIUM
systemic design for social complexity