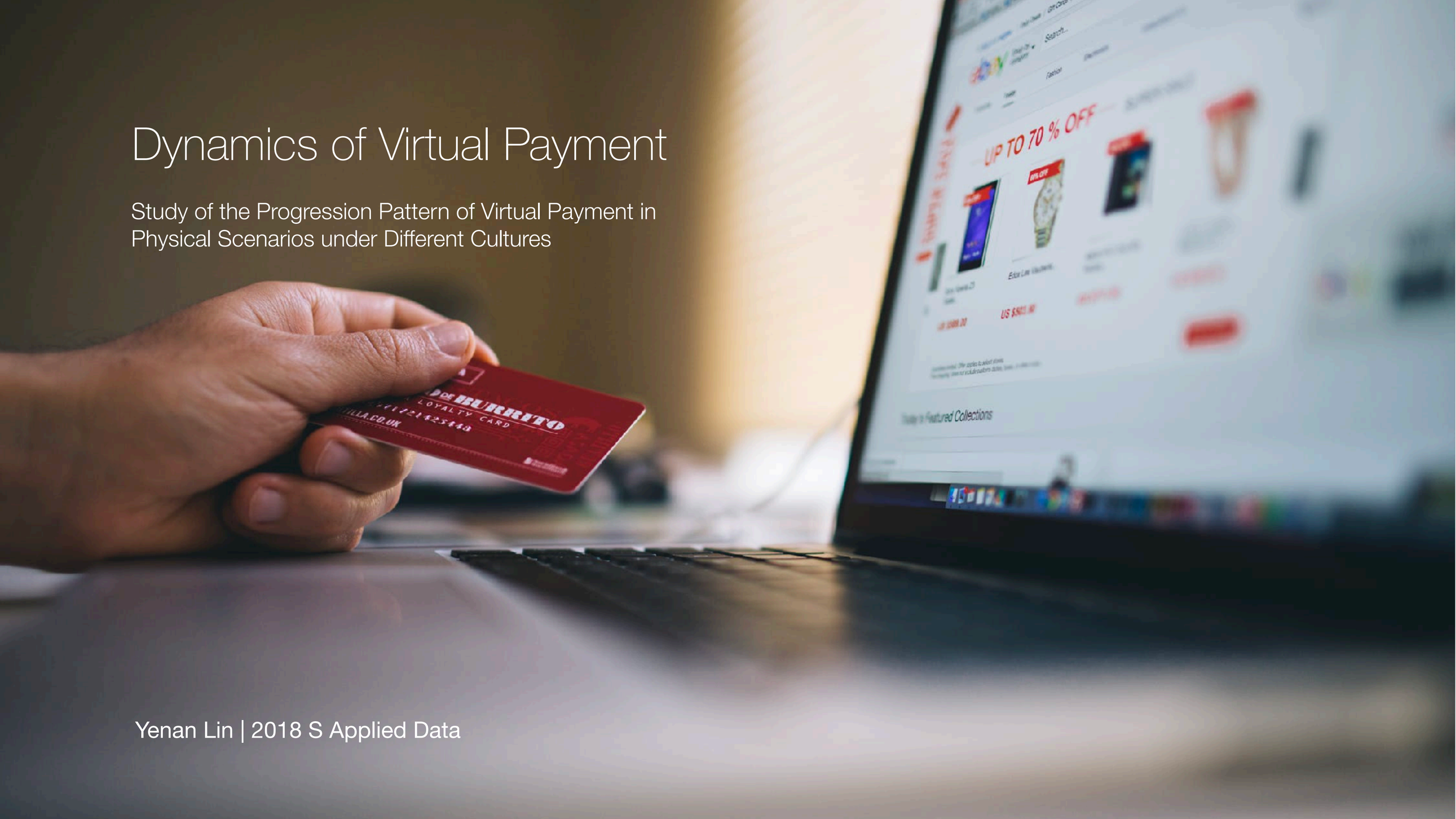
Dynamics of Virtual Payment

Study of the Progression Pattern of Virtual Payment in Physical Scenarios under Different Cultures



Yenan Lin | 2018 S Applied Data

PROJECT OUTLINE

Problem Definition

To better understand people's acceptance of emerging payment methods like Apple Pay and Ali Pay. Learn about the frictions happening when virtual payment meets with physical scenarios. And to explore a just, sensible, and viable future for smart payment system.

Objectives/Goals

To explore a just, sensible, and viable future for smart payment system based on answering:

- What does a just, sensible, and viable future of payment mean for people?
- How can virtual payment make benefit for various stakeholders?

EVOLUTION OF MONEY

BARTER	**Trading valuable commodity**	**Imprecise value exchange**	**Human elements involved**	**Slow and off-the-record**
COWRY SHELL TO COINS				
PAPER MONEY				
GOLD STANDARD				
E-MONEY, CREDIT CARD, DIGITAL CURRENCY	**Math of digital numbers**	**Precise value exchange**	**Computer and algorithm controlled**	**Efficient and transparent**

EVOLUTION OF MONEY

BARTER

COWRY SHELL TO COINS

PAPER MONEY

GOLD STANDARD

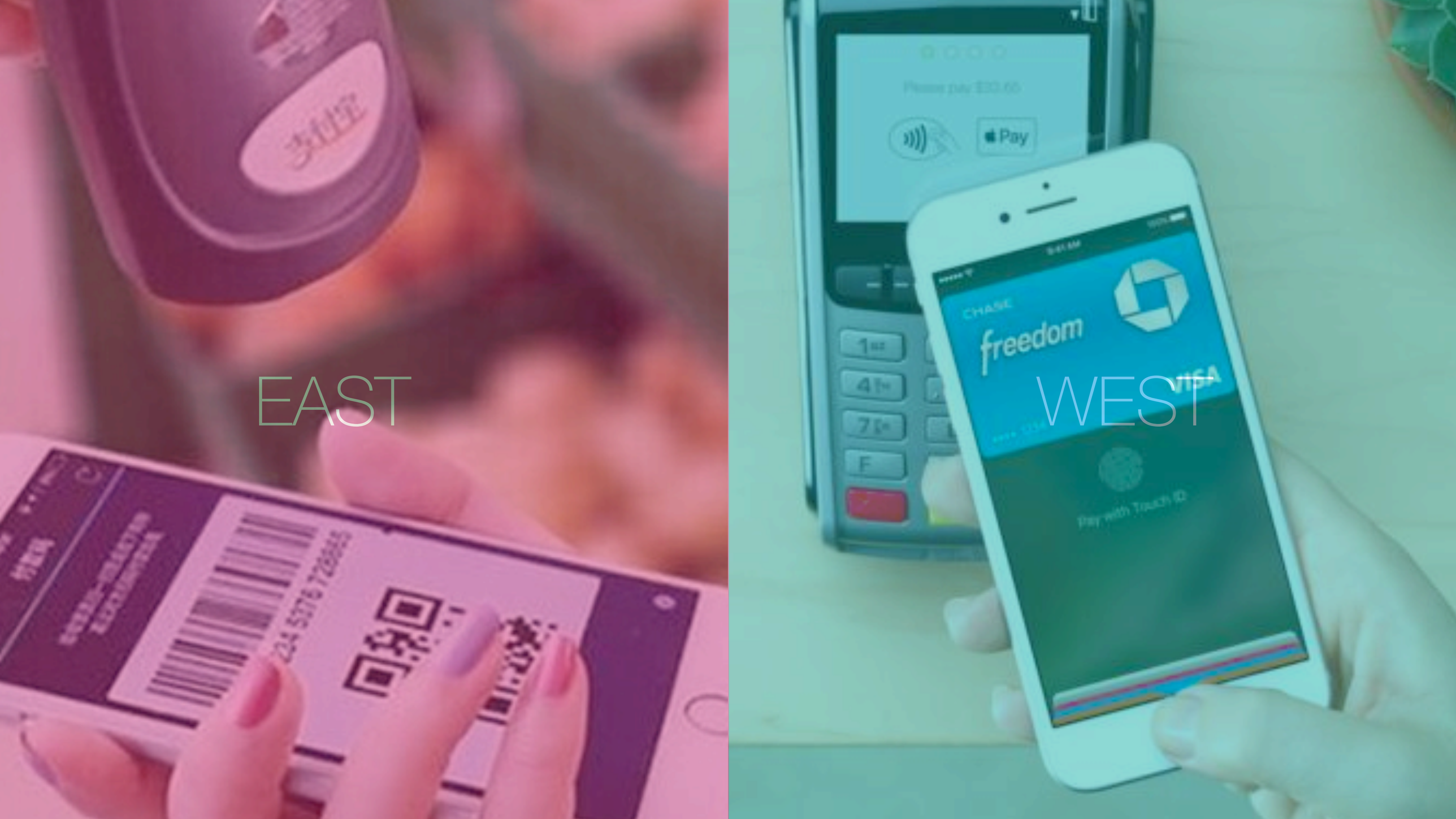
E-MONEY, CREDIT CARD,
DIGITAL CURRENCY

	LESS	CONSTANT	MORE
	Intrinsic value Association of making of money and making of things	Ruinous effects on human culture and society	Immaterial in forms and in means of acquisition Intangible and powerful

CONSEQUENCES OF VIRTUAL PAYMENT

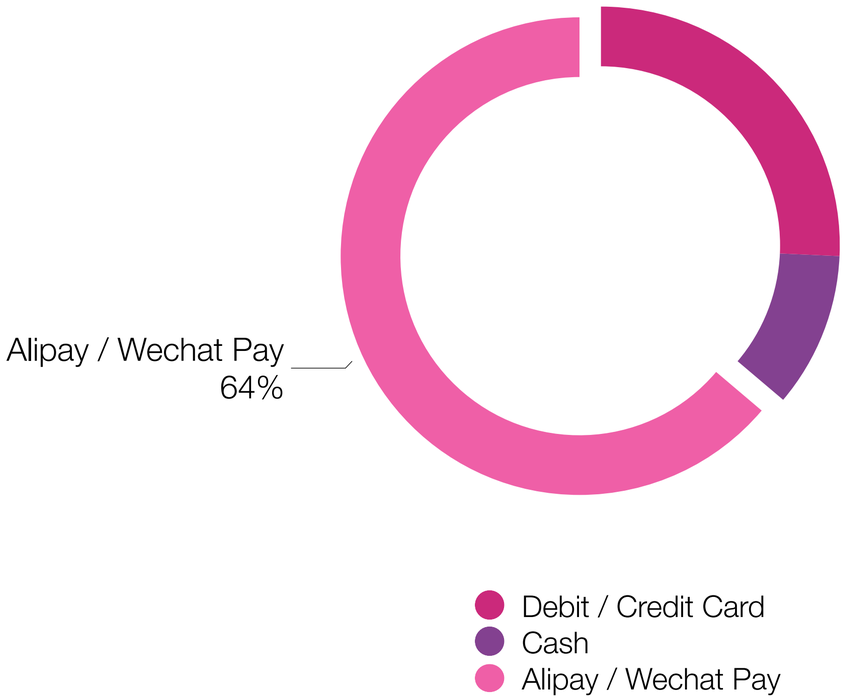
UNADDRESSED	**Lack of physical interaction** between two parties (who pays and who collects). Relationship between people might become weaker and the trust between people need to be addressed through other methods
UNINTENDED	**Elevated threshold** for modern transaction. Smart phone or other devices will be needed as a necessity of using virtual payment. Those who do not have access to the device will be left out. The gap between the rich and the poor will be magnified.
UNEXPECTED	People would have different understanding over money. **New pattern of consumption** will be generated.
UNFORESEEN	**Data of transactions** will be collected and might be used for various reasons.
UNFORESEEABLE	**Absolute transparency** of transactions might brought some unforeseeable consequences.

MATERIAL **SOCIAL**

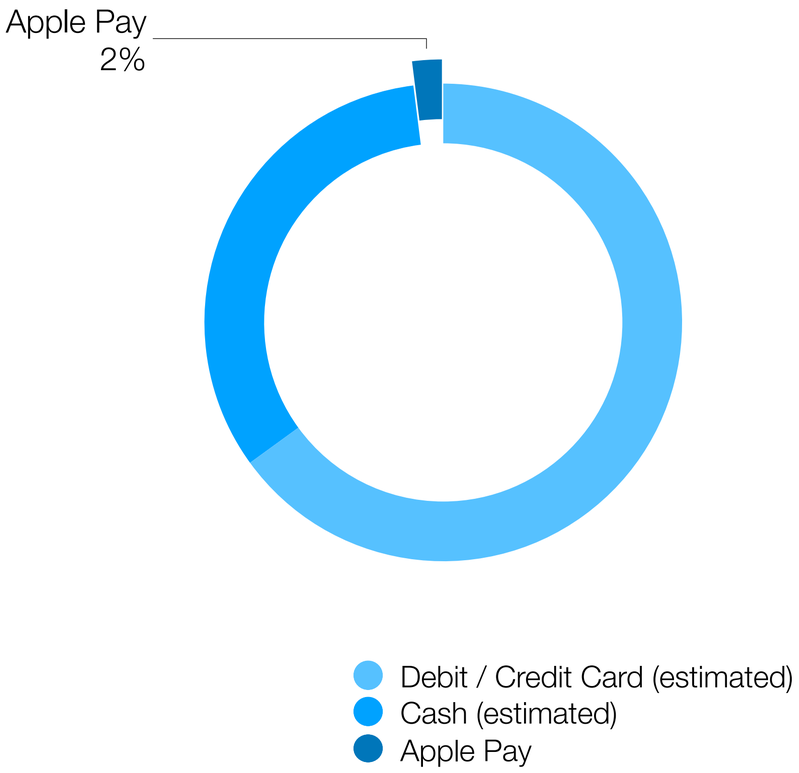

EAST
WEST
Pay
CHASE
freedom
VISA
Pay with Touch ID

VIRTUAL PAYMENT IN PHYSICAL STORES

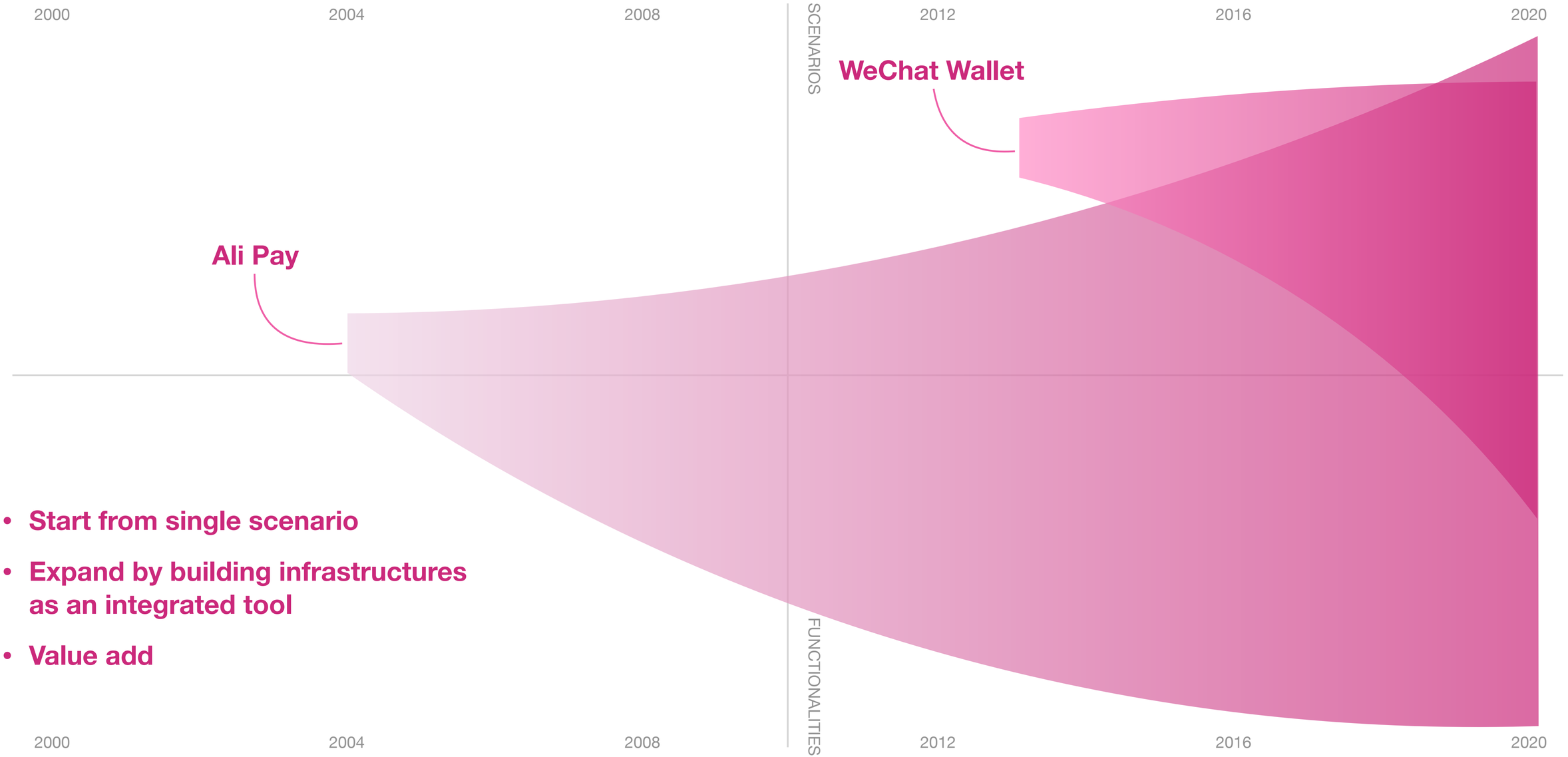
EAST



WEST

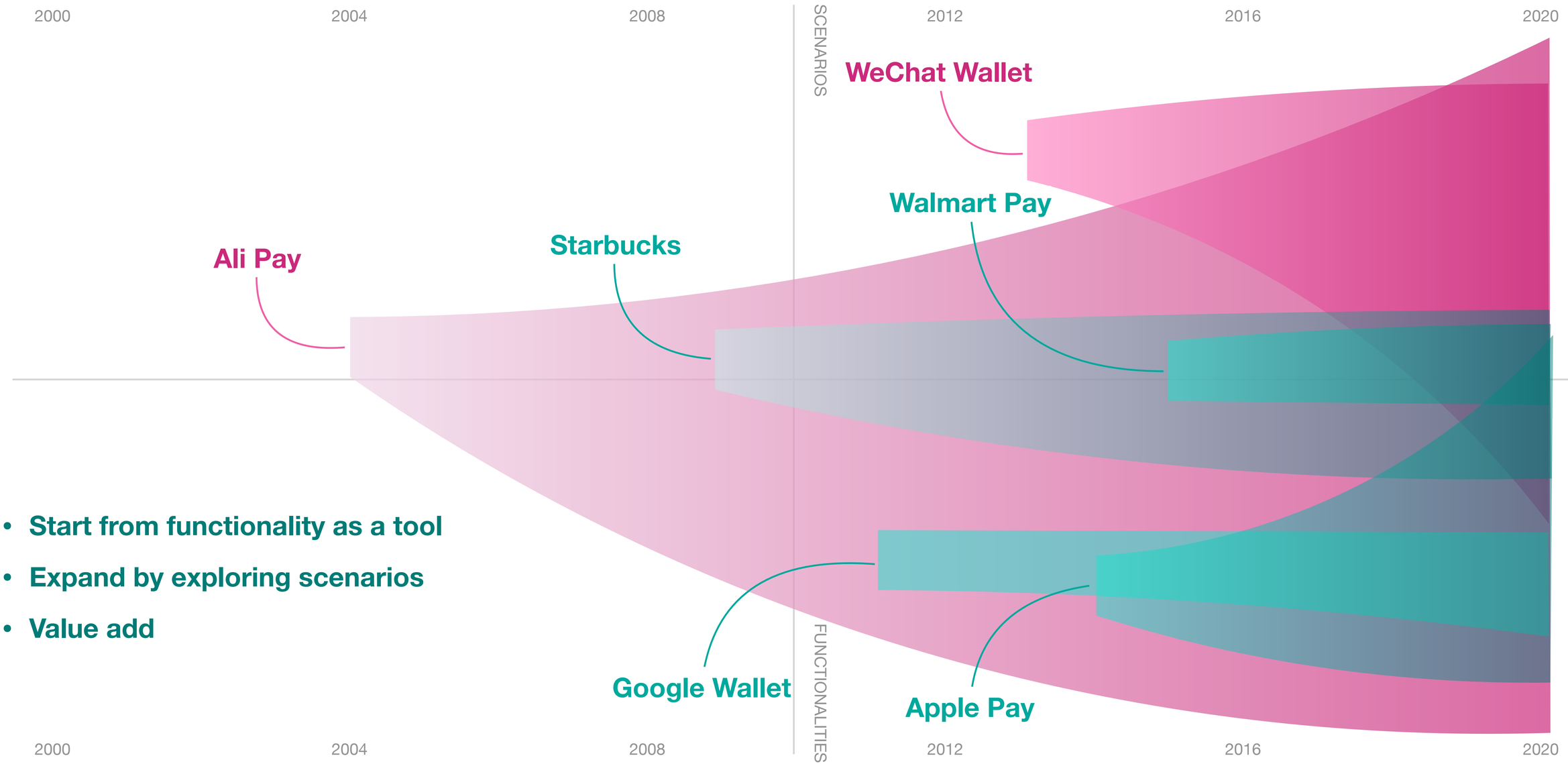


PROGRESSION PATTERNS

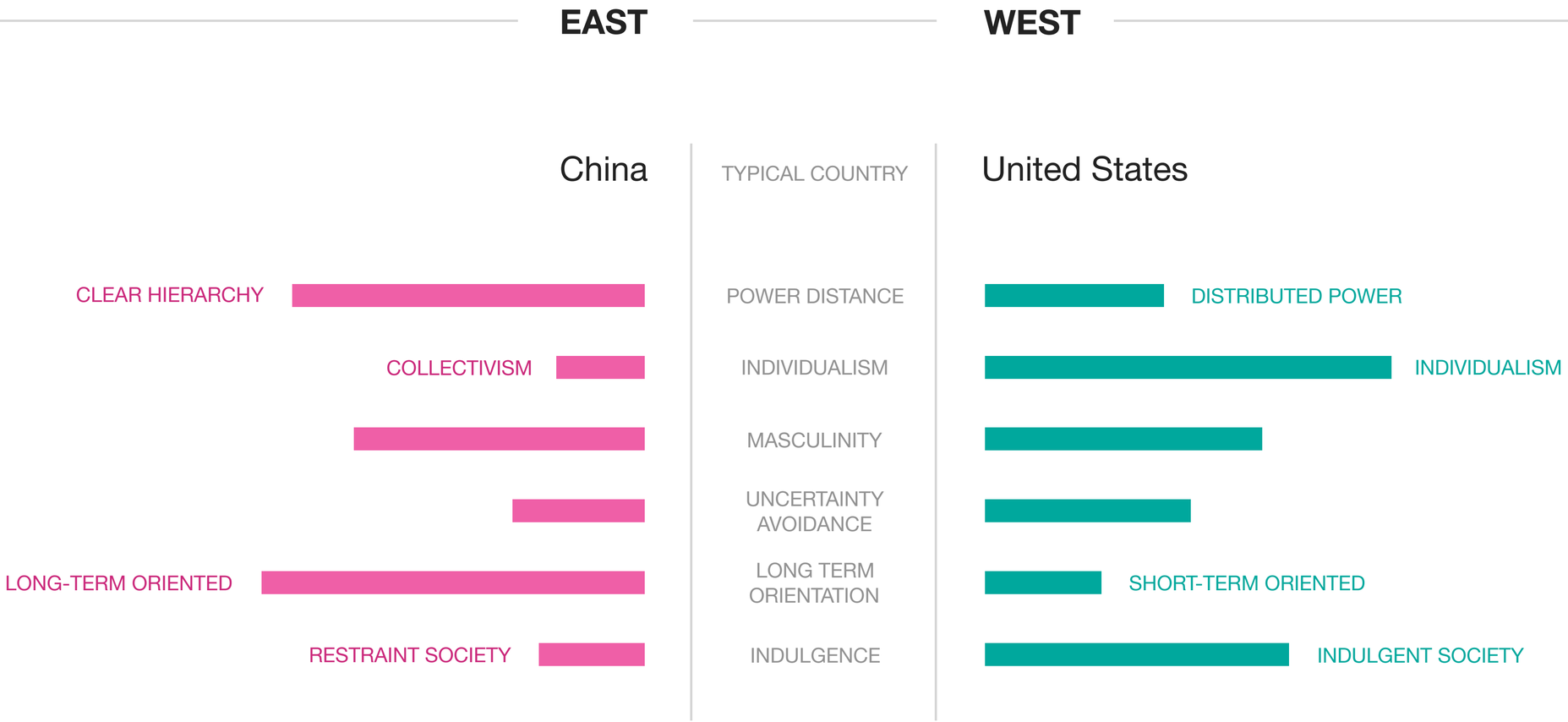


- Start from single scenario
- Expand by building infrastructures as an integrated tool
- Value add

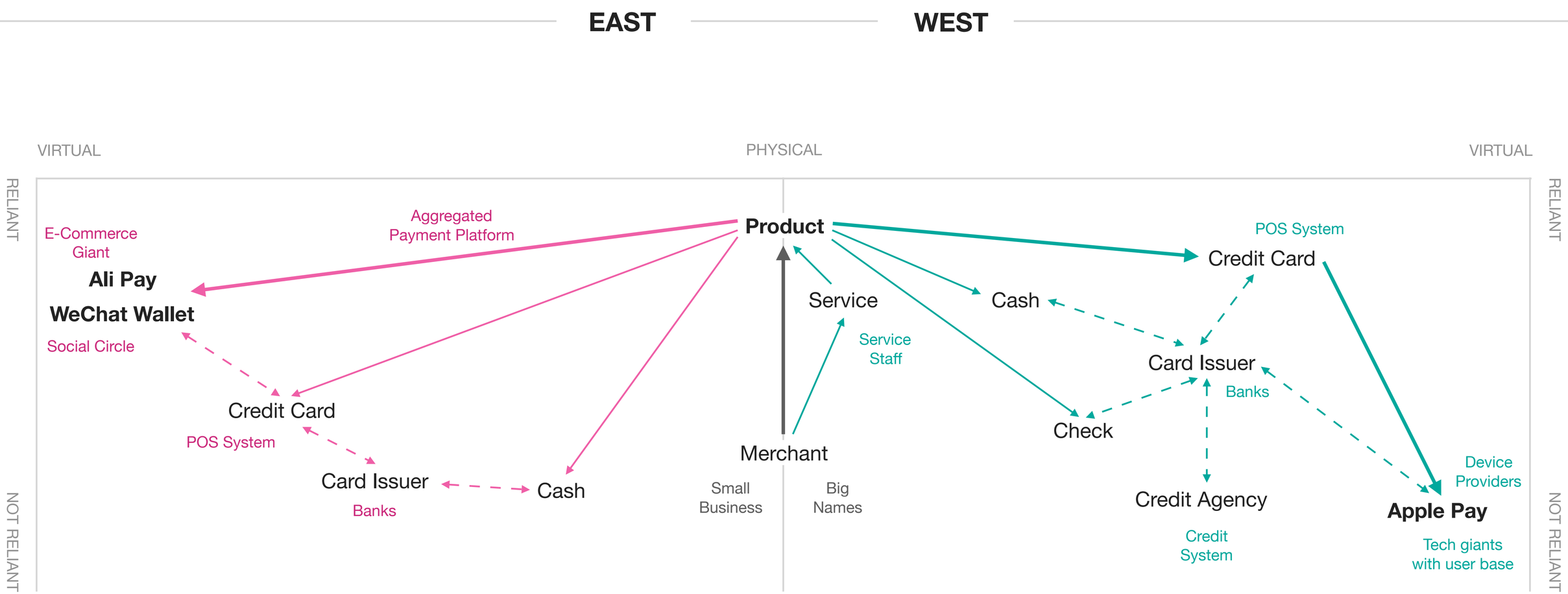
PROGRESSION PATTERNS

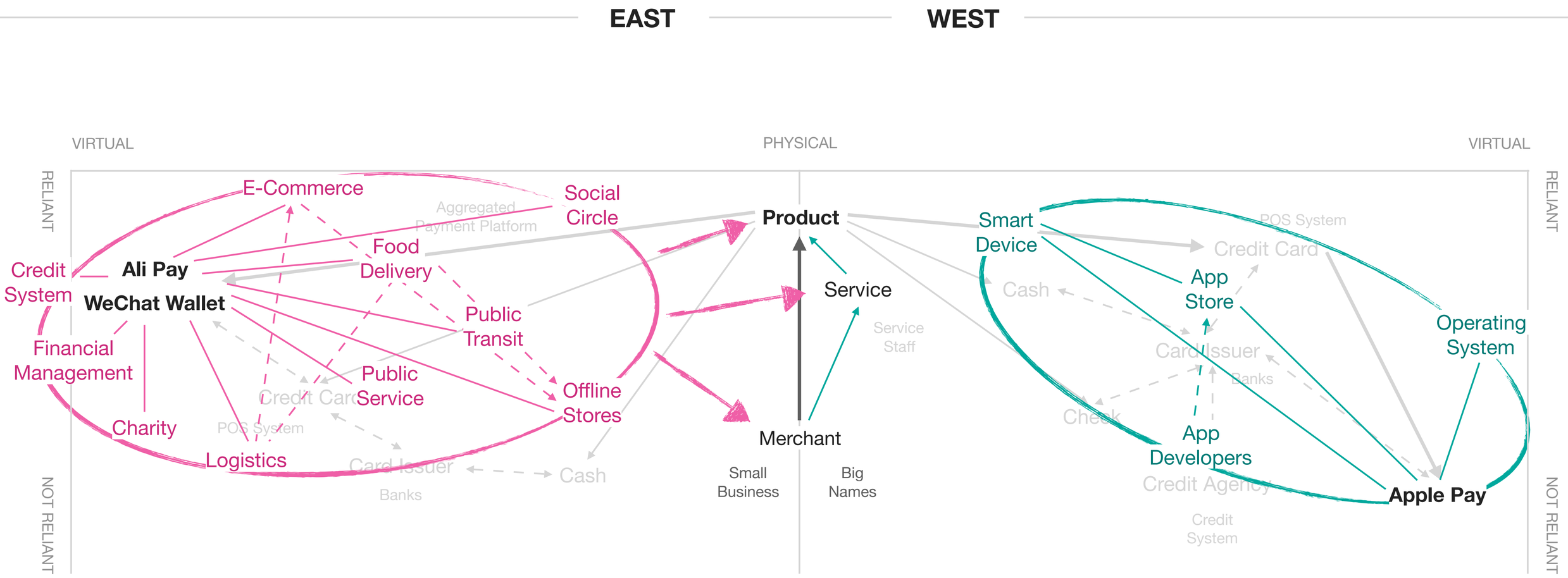


- Start from functionality as a tool
- Expand by exploring scenarios
- Value add


EAST
WEST
China
TYPICAL COUNTRY
United States
CLEAR HIERARCHY
POWER DISTANCE
DISTRIBUTED POWER
COLLECTIVISM
INDIVIDUALISM
INDIVIDUALISM
MASCULINITY
UNCERTAINTY AVOIDANCE
LONG-TERM ORIENTED
LONG TERM ORIENTATION
SHORT-TERM ORIENTED
RESTRAINT SOCIETY
INDULGENCE
INDULGENT SOCIETY

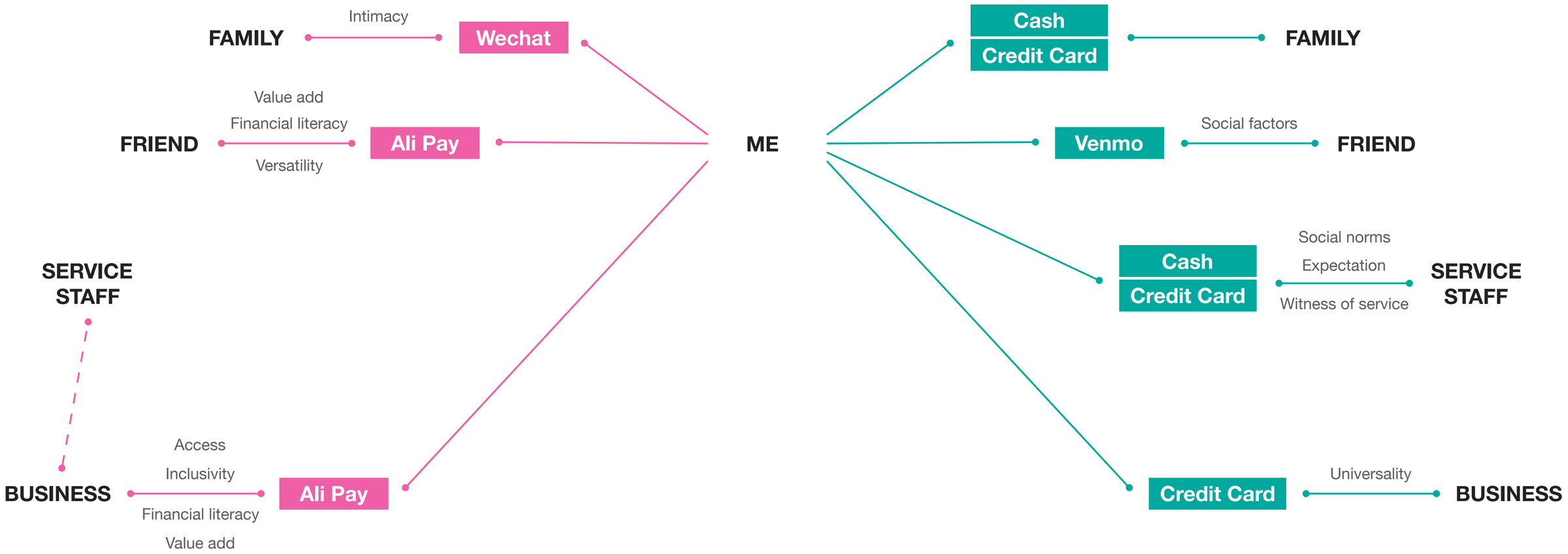
EAST		WEST
Less Iterations Paper money and coins > Food Stamps > Credit/Debit Card > E-Bank > Mobile Payment	ITERATIONS OF PAYMENT SYSTEM	More Iterations Paper money and coins > Check > Charge Card > Credit/Debit Card > Prepaid Card > Online Payment > Mobile Payment
Immature credit system Alibaba is taking the lead of building the first credit system in China	CREDIT SYSTEM	Established credit system Three national credit reporting agencies keeping records on financial habits
Wealth is the materialization of virtue Economy is the realization process of moral pursuit and material satisfaction	CLASSICAL ECONOMY VALUES	Wealth is the accumulation of material forms The maximization of interests is the main purpose of resource allocation
Open-minded about data and privacy People are used to give up privacy for certain convenience	DATA LITERACY	Conservative about data and privacy We all know what happened to Facebook….


EAST
WEST
VIRTUAL
PHYSICAL
VIRTUAL
RELIANT
NOT RELIANT
RELIANT
NOT RELIANT
E-Commerce Giant
Ali Pay
WeChat Wallet
Social Circle
Aggregated Payment Platform
Credit Card
POS System
Card Issuer
Banks
Cash
Product
Service
Service Staff
Merchant
Small Business
Big Names
POS System
Credit Card
Cash
Card Issuer
Banks
Check
Credit Agency
Credit System
Device Providers
Apple Pay
Tech giants with user base

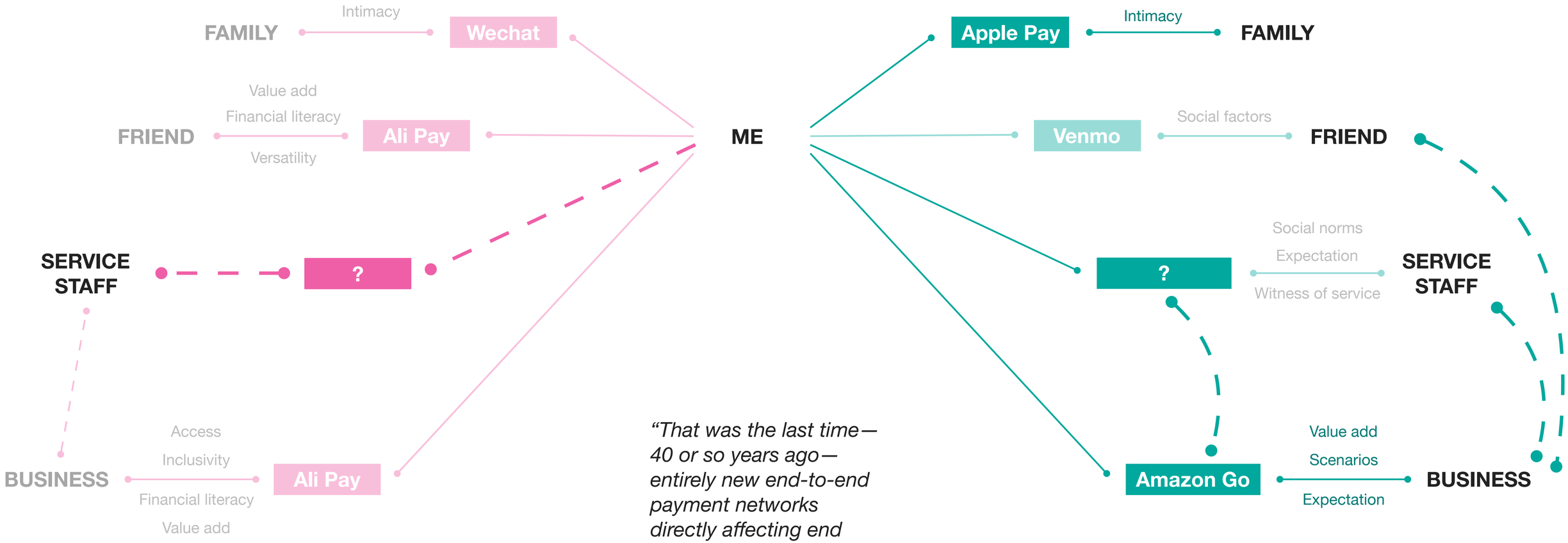

EAST
WEST
VIRTUAL
PHYSICAL
VIRTUAL
RELIANT
NOT RELIANT
RELIANT
NOT RELIANT
E-Commerce
Social Circle
Aggregated Payment Platform
Food Delivery
Credit System
Ali Pay
WeChat Wallet
Public Transit
Financial Management
Public Service
Credit Card
POS System
Charity
Logistics
Card Issuer
Banks
Cash
Offline Stores
Product
Service
Service Staff
Merchant
Small Business
Big Names
Smart Device
POS System
Credit Card
Cash
App Store
Operating System
Card Issuer
Banks
Check
App Developers
Credit Agency
Credit System
Apple Pay

CASE STUDY

VEHICLES OF MONEY FLOW - NOW



VEHICLES OF MONEY FLOW - FUTURE



"That was the last time—40 or so years ago—entirely new end-to-end payment networks directly affecting end users were introduced in the United States."

APPENDIX

References

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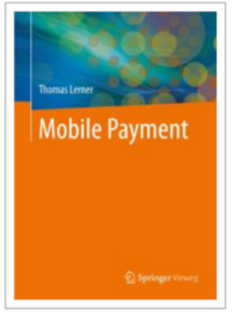


Mobile Payment
Thomas Lerner

Availability

Your institution has access to

Online Reading

Full Download

Imagining what might go wrong

Not: nothing is ever perfect, so why worry?

Instead: how do we better look after our monsters (Latour)

- **Security & trust**: data breach, data leaks, data loss, theft, data out of my control
- **Access**: opaque technologies (e.g. AI, blockchain) of inner workings and points of contol
- **Who is this a problem for?-ism** (after Suchman): faulty assumptions of user-base, assumed problems
- **Agency & control:** I don't know what IS my control, how, when or where (mom's WWF)
- **Sustainability** of time & attention: services like social media that monopolize time, attention, engagement
- Inherent problems of **scaling**: unanticipated effects arising from the interconnected nature of the information infrastructure, incomplete knowledge of the whole (after Sundeep Sahay and Geoff Walsham)
- **JIT** expectations of info that is 'always on': loss of critical thinking and assessment abilities
- **Default growth mindsets:** unchecked assumptions about end goals of new products and services
- **Environmental sustainability**: obsolesce, products we can't fix ourselves
- Advocating for **independent actors** (people, places, things) v. **society as a whole**
- Responsibility to provide **access to "public" knowledge**, interests, info, data
- and more…

1. Project name and topic
2. Problem definition
3. Objectives of your project (aims, goals, your ‘hunt')
4. Approach & plan: what are the parts of your project:
    1. Research (into what)
    2. Analysis (of what)
    3. Synthesis -are you making paper or functional prototypes of your product/service/system? A framework, heuristic or rubric?
    4. How will you (or would plan to) test your hypothesis and/or prototype? Can you show what is "improved" or potentially improved against our goals? How would you/did you collect data/information to prove/disprove your hypothesis of "improved”? What are relevant measures/metrics?
5. We will meet on the 27th in teams, privately, once again. Bring these first four bullets in a reviewable form so that we can discuss.
6. For class Tuesday April 3rd, we will do mid-progress share-outs in class as a group.

Food-for-thought to help you get started on your project:

- Plot pathways to extreme ends of utopian and dystopian futures
- What are the assumptions at the base of culture (worldviews) that shape your product/service/systems? (Mumford, Ellul, Winner, Postman)
- For your product category, describe or illustrate how the advancement of accepted ends has become ingrained in our thinking; how we might better account for the consequences of the systems we design and build (Winner, Wacjman, others)
- How do the promises of your existing product/service (time saving appliances, control of our environments, flawless looks, etc.) contrast with their direct, goal-oriented results, and ALSO their associated unintended, unforeseen consequences (CO_2, mounting trash heaps, time-sucking devices)? Make comparative lists.
- Who are the stakeholders in the wider ecosystem of your product/service/system? There is a TON on great scholarship out there. Please share relevant bits from Carlos. Here is one: http://portals.wi.wur.nl/files/docs/ppme/BobCavana.pdf
- What are your new goals for the product/service and its far-ranging consequences (Wacjman, Suchman, others)? Be specific.
- How does your solution entail a new understanding (mindset) and/or ability to act (agency) on behalf of its publics?

✗ **VIRTUAL PAYMENT** ✓

Unaddressed

Faster, cheaper transaction process

Transparency of transactions

Elevated threshold

Table 2: A proposed taxonomy and hierarchy of negative consequences of research

Categorisation	Definition	Probability	Researchers' obligations
Unaddressed	Consequences are known to the researchers but are not examined because of the predefined scope.	High	Public disclosure and engagement with stakeholders to achieve consensus on research scope and objectives.
Unintended	Consequences are known to the researchers, but with low enough probabilities that associated risks can be	Low	Include in the scope of the research measures to avoid negative consequences, despite the very low probability.

Problem Definition

To better understand people's acceptance of emerging payment methods like Apple Pay and Ali Pay. And to explore a just, sensible, and viable future for smart payment system in the US.

Objectives/Goals

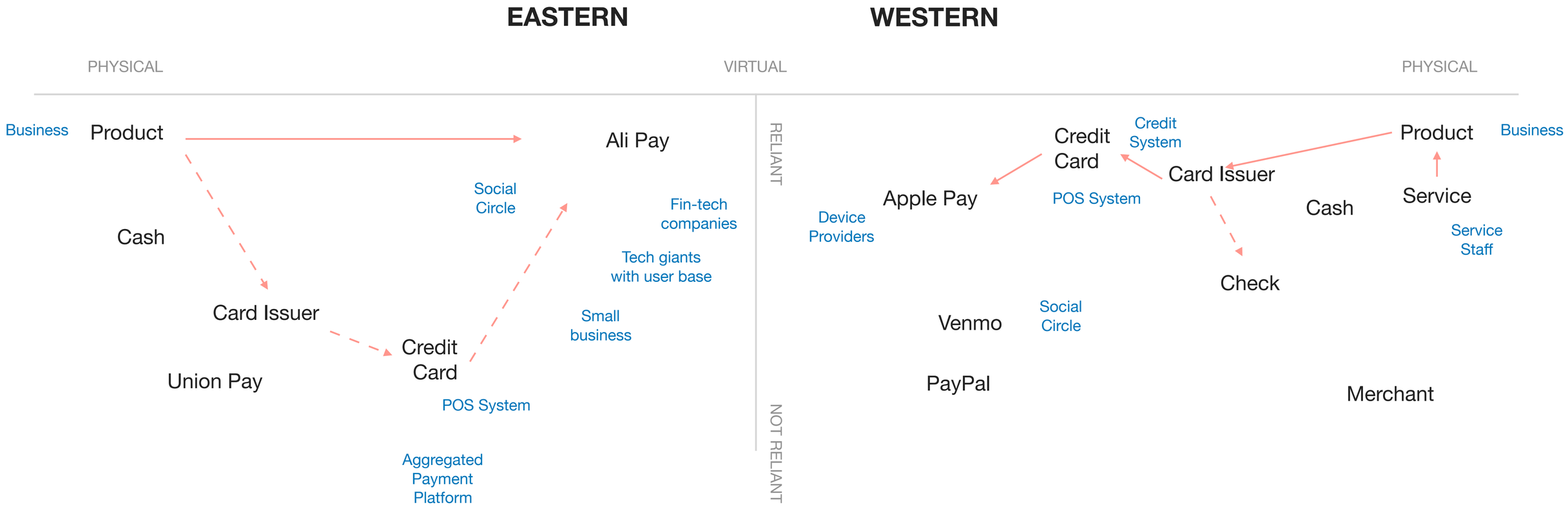
To explore a just, sensible, and viable future for smart payment system based on answering:

- What does a just, sensible, and viable future of payment mean for people?
- How can virtual payment make benefit for various stakeholders?

Approach/Plan

- RESEARCH
  - Era analysis of Eastern and Western - Understand the evolution patterns of payment and credit system
  - Case study - existing cases of smart / mobile payment, successful and unsuccessful
- ANALYSIS
  - Analysis unaddressed, unintended, unexpected… consequences of virtual payment
    - Elevated threshold of trading / payment for different generations, races, classes
    - Forms of engagement / Shift of the role for the person in the process of payment
    - Data collection and further use
    - Transparency of transaction information
  - Analysis stakeholders and their relationships in the ecosystem
  - Metrics
    - For people, what do they value? Privacy? Individualism? Connect with each other?
    - For the society, how can they support? Gov surveillance?
    - For business, how to make sure virtual payment could still serve the business well?
- SYNTHESIS
  - Solutions that has addressed negative consequences and leading toward a just future
  - Prototypes (tbd)
- VALIDATION

ZOOM IN



That was the last time—40 or so years ago—entirely new end-to-end payment networks directly affecting end users were introduced in the United States.