

How Blockchain Can Transform The Pharmaceutical And Healthcare Industries

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5th of June 2018

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Agenda

1

Industry collaboration via PhUSE

2

Introduce blockchain

3

Pre-requisites to adopt blockchain

4

Proposed Use Cases

6

Next Steps...

1. Industry collaboration via PhUSE



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Cross-Functional Team Members

- **Co-leads:**

- Disa Lee Choun (UCB)
- Adama Ibrahim (Biogen)
- Christopher Hart (Manchester Informatics Limited)

- **Members:**

- Hariprasad Radhakrishnan (AstraZeneca)
- Eric Wu (Gilead)
- Anders Bergkvist (Merck)
- Aji Barot (HealthUnlocked)
- Fernand Maes (Johnson & Johnson)
- Will Ivy (Johnson & Johnson)
- Zakaria Arrassi (UCB)
- Marc Casals (UCB)
- Yusuf Ghadiali (Biogen)

24 Project
Members!

- Imran Shakur (Biogen)
- Mayur Joshi (Biogen)
- Richard Shute (Curlew Research)
- Bob Clay (Highbury Regulatory)
- Kenneth Ng (Hashed Health)
- Philip Clothiaux (Hashed Health)
- Kenneth Getz (Tufts University)
- Selina Lee (IBM)
- Nicole Tay (Mercantis)
- Jim Nasr (CDC, Certara)
- Karin Beckstrom (ERT)
- Maria Palombini (IEEE)

Academia
Biometrics
Business Process
Clin Ops
Clinical Supply
Consultants
eCOA Provider
IRT
Medical Affairs MD
Regulatory
PE Provider
Standards

2 FDA key
reviewers



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Objectives of the White Paper

Educate and share knowledge

- **Landscape**
- **Implications**

Present and analyze two detailed use cases

- **Supply Chain, Vendors and Site**
- **Patient Data Access/Transparency**

Recommendations for implementation

- **POC**

Why Now?

Regulatory environment
Industry interoperability
and accountability
Transparency
Privacy

Worldwide demand for
patient oriented healthcare

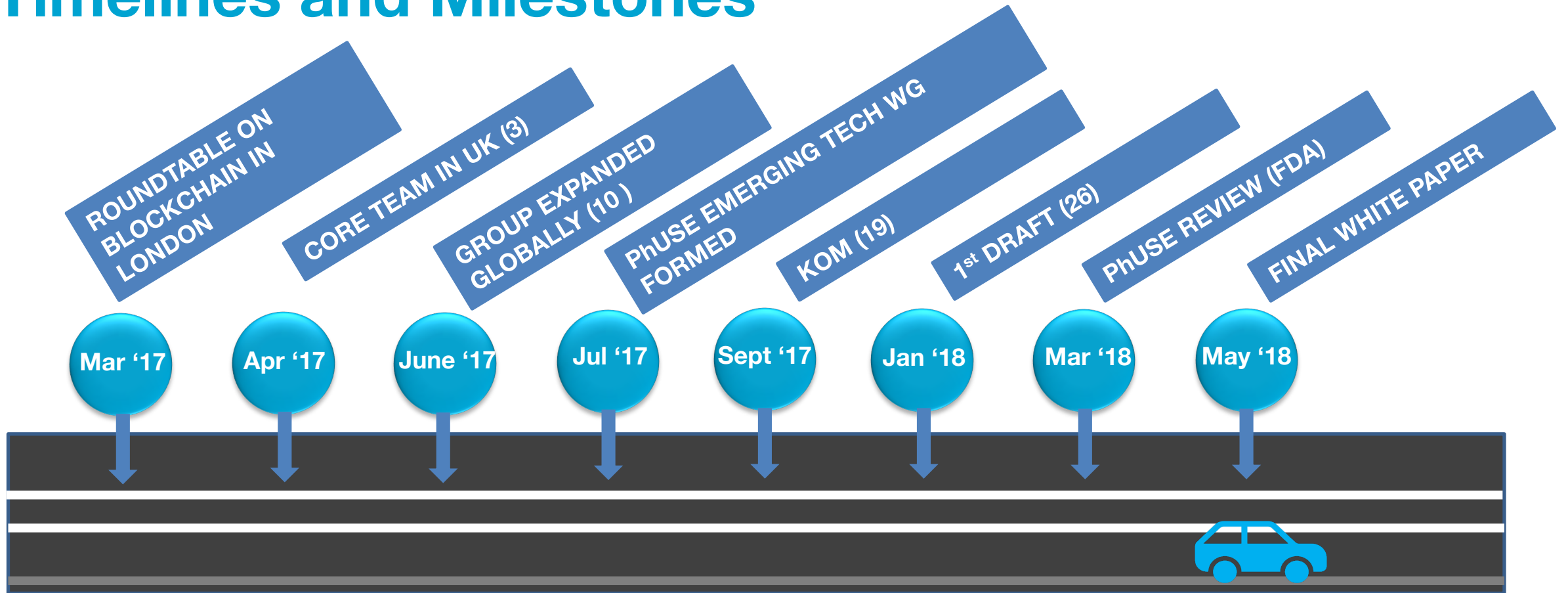
Inefficiencies of traditional
R&D process

Unsustainable industry
wastage, fraud and
mounting costs

Massive amounts of
investments and rapid
improvements in Blockchain
technology

Low trust and reputation of
industry with the general
public

Timelines and Milestones

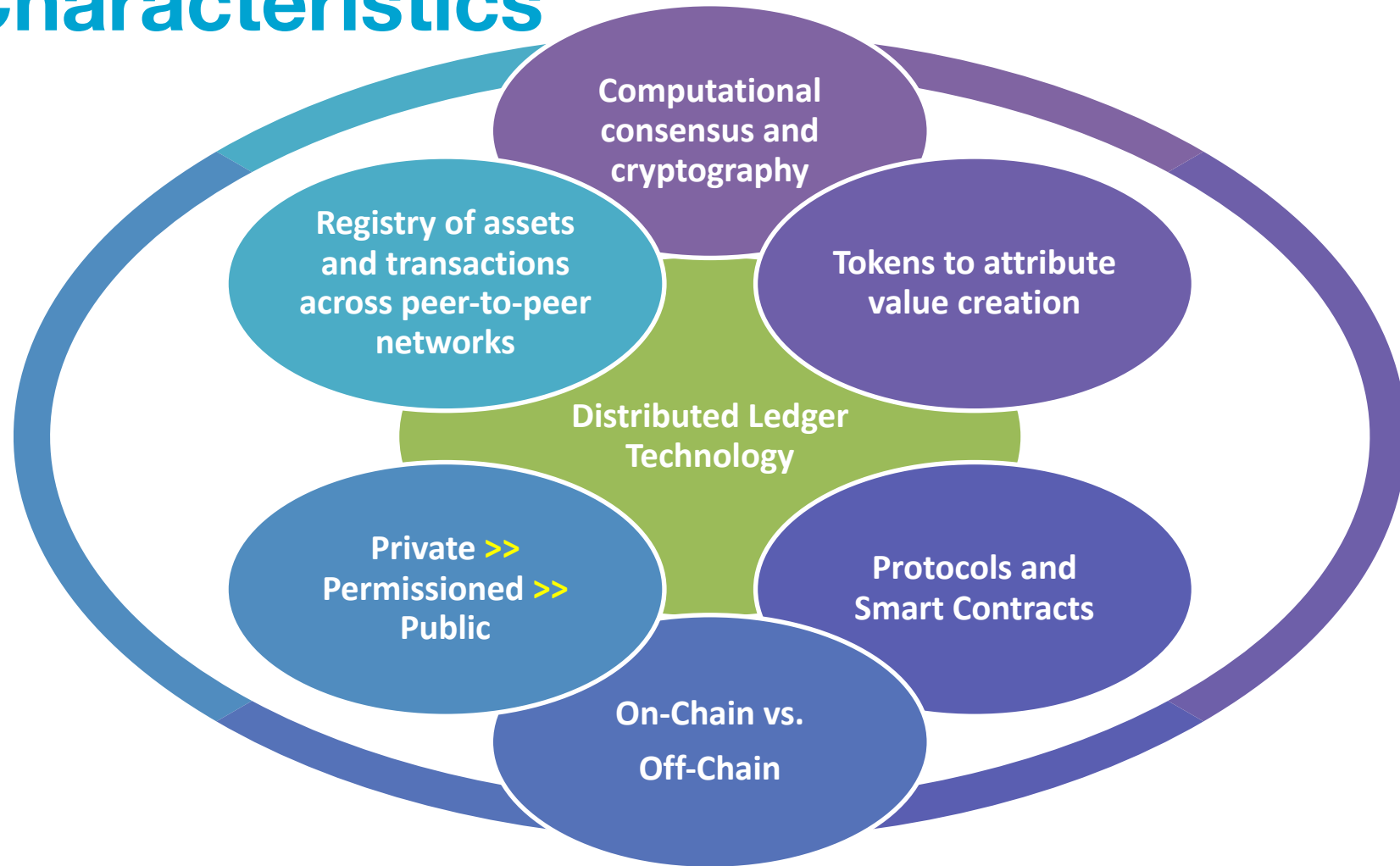


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2. Introduce BlockChain



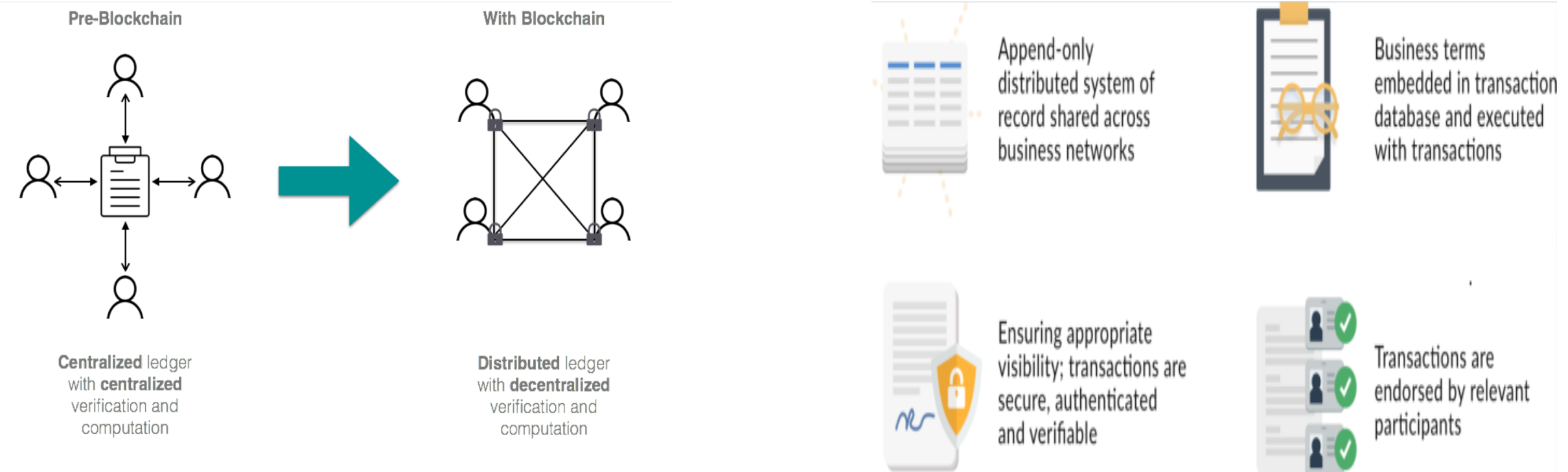
General Characteristics



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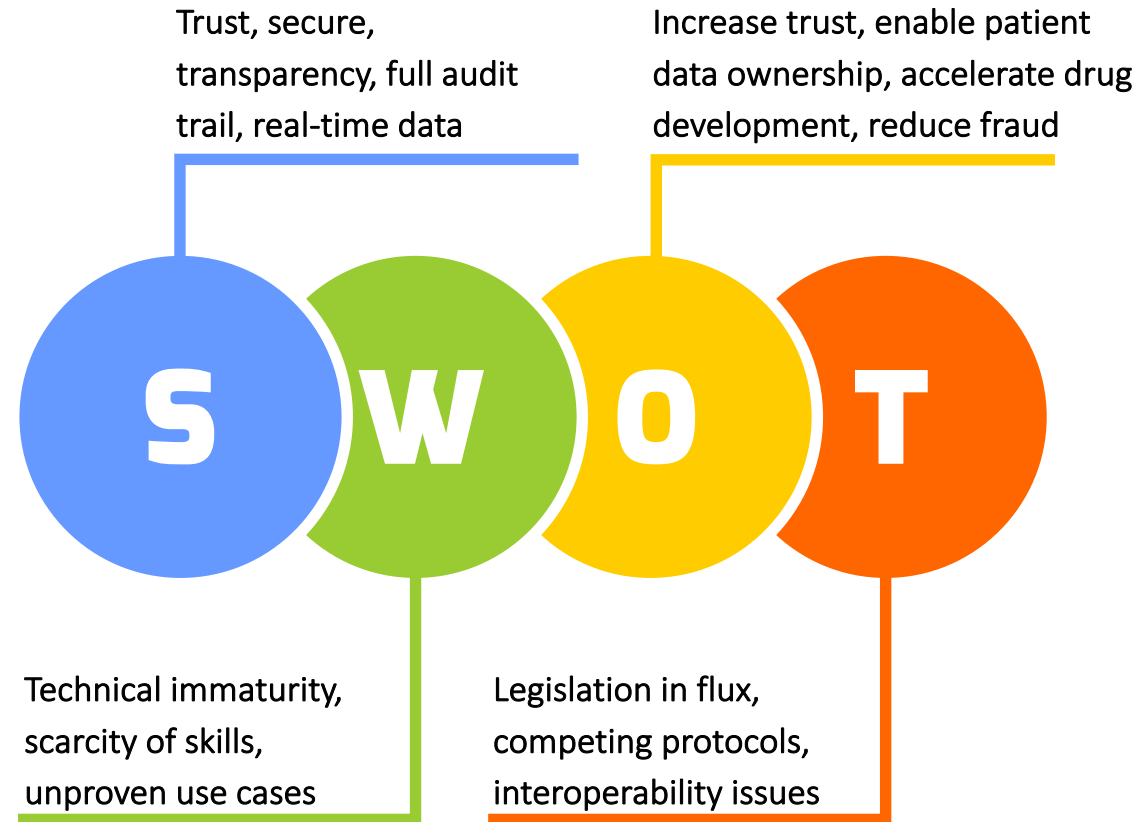
Centralised/decentralised ledgers and Business benefits



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SWOT analysis



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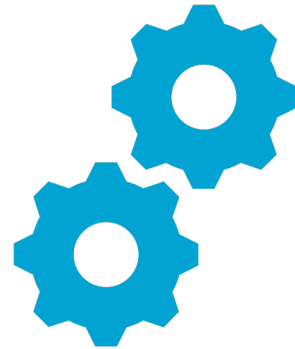
It's more than blockchain...



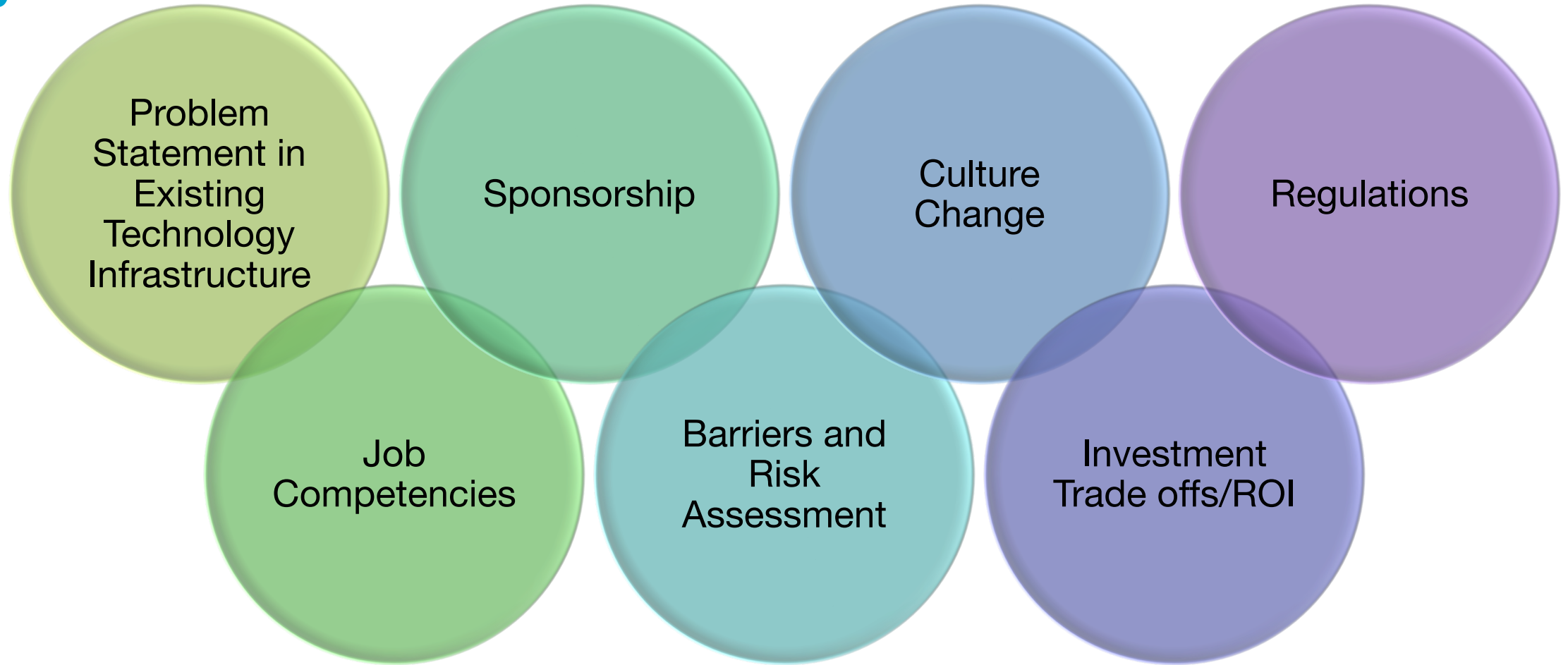
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3. Pre-requisites to adopt Blockchain



Key Considerations



Stakeholders



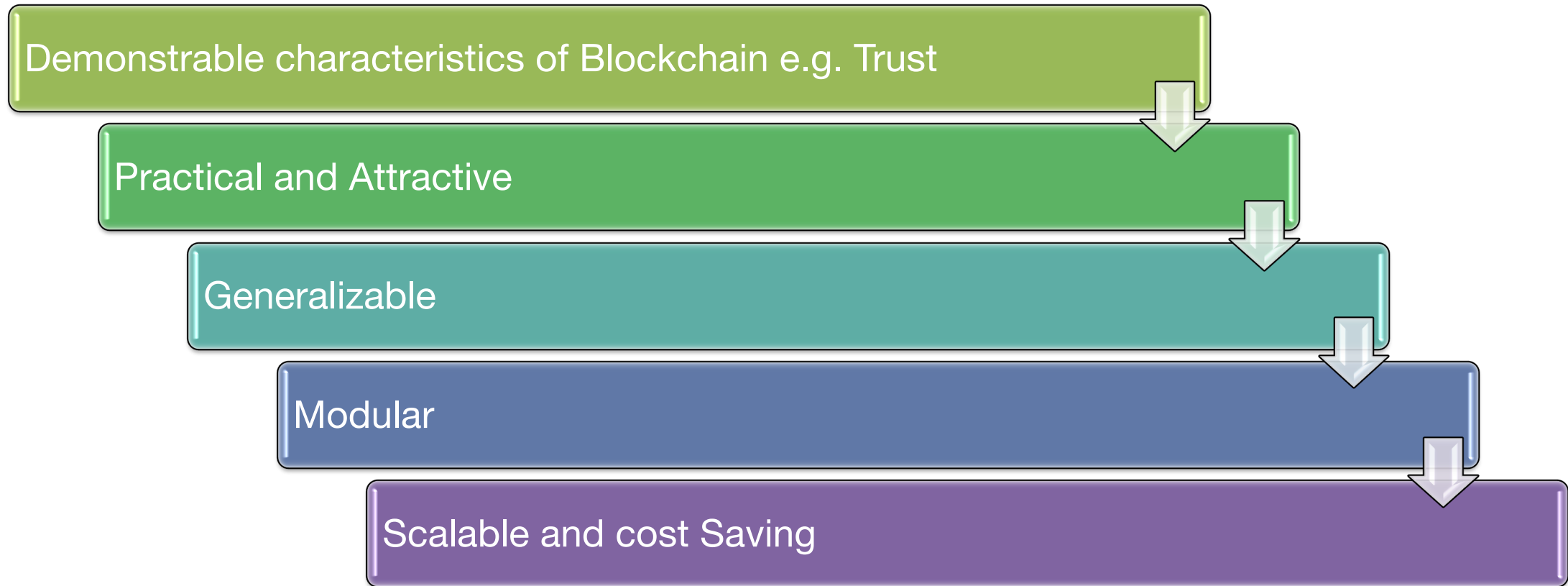
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4. Proposed Use Cases



Criteria for Selection of Use Cases



Use Case 1: Drug Supply Chain



Problem Statement

Poorly drafted contracts

Compliance with strict regulations

Negotiation cycles

Global contracts

Payment triggers



Value Proposition

End to End tracking in supply chain

Transparency and trust

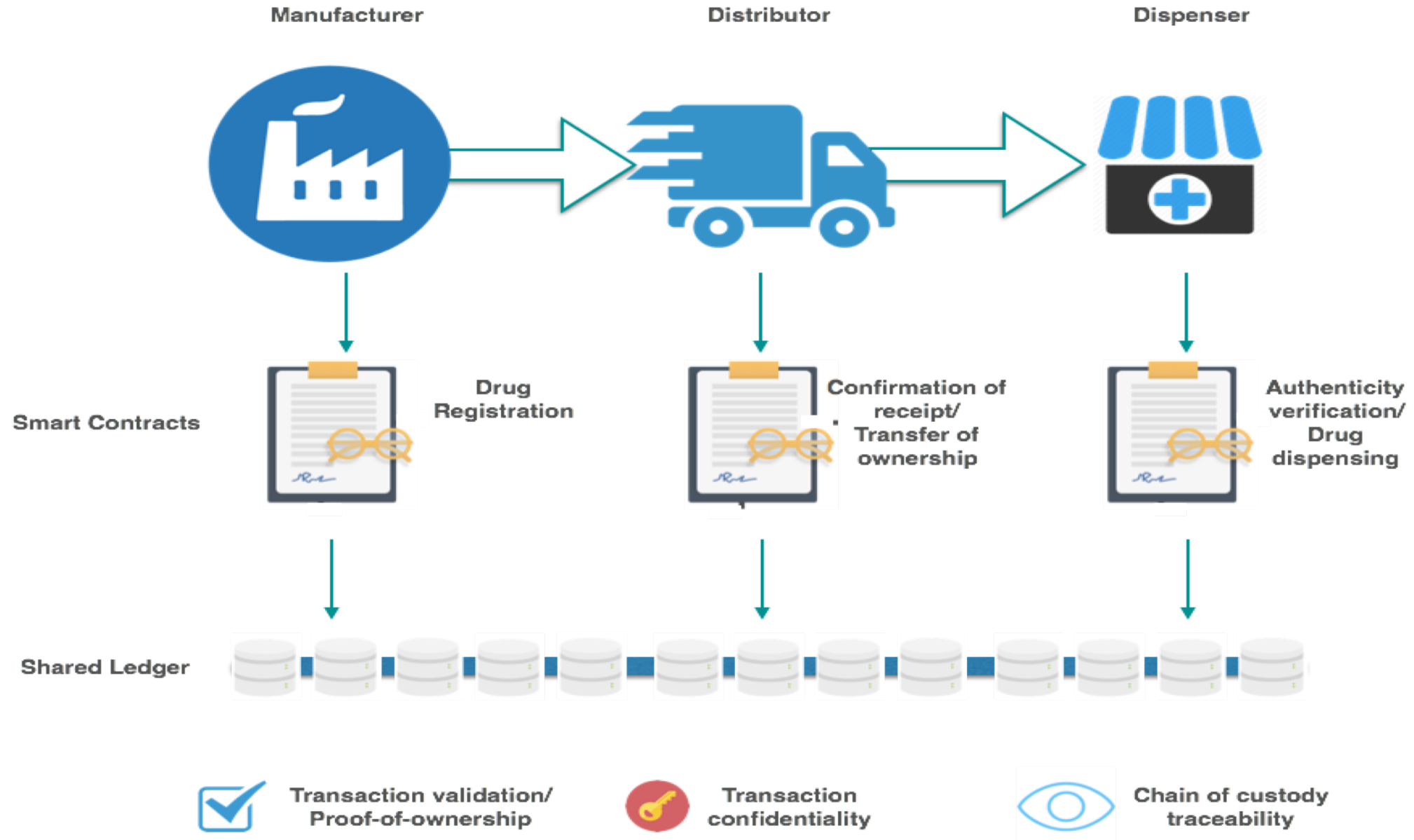
Automation

Streamlining of processes and audit

Contracts can be executed in a timely manner without human delay or disputes

Clear automated payment triggers

Use Case 1: Drug Supply Chain – track & trace



Use Case 2: Patient Data



Problem Statement

High development costs (NME)

Delay in enrolment

Delay in database lock

Virtual trials

Data transparency, disclosure and privacy laws (GDPR)

Low level of trust and reputation



Value Proposition

Secure encryption for privacy

Audit of patient data journey

Patient control and access

Access to higher volume of data

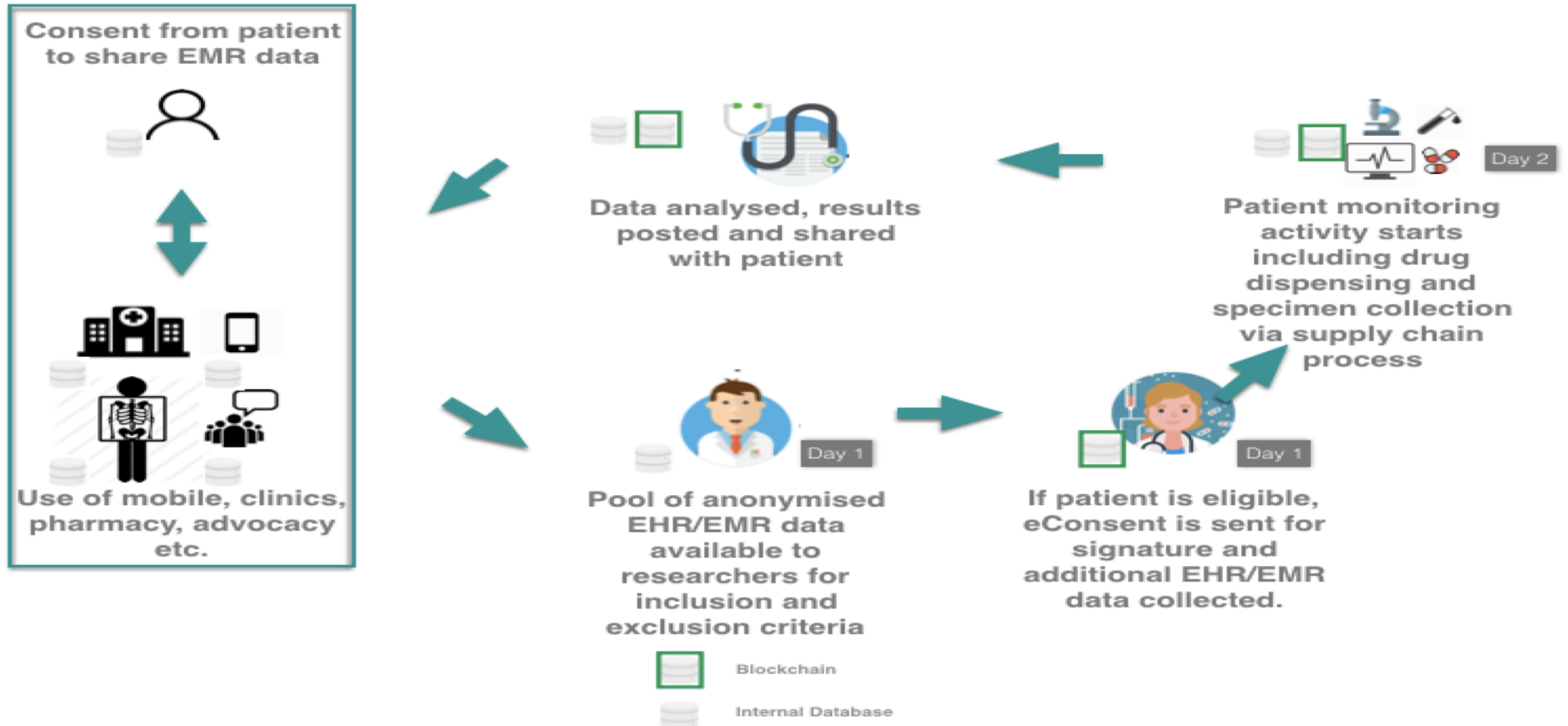
Access to real world data

Build on trust and reputation

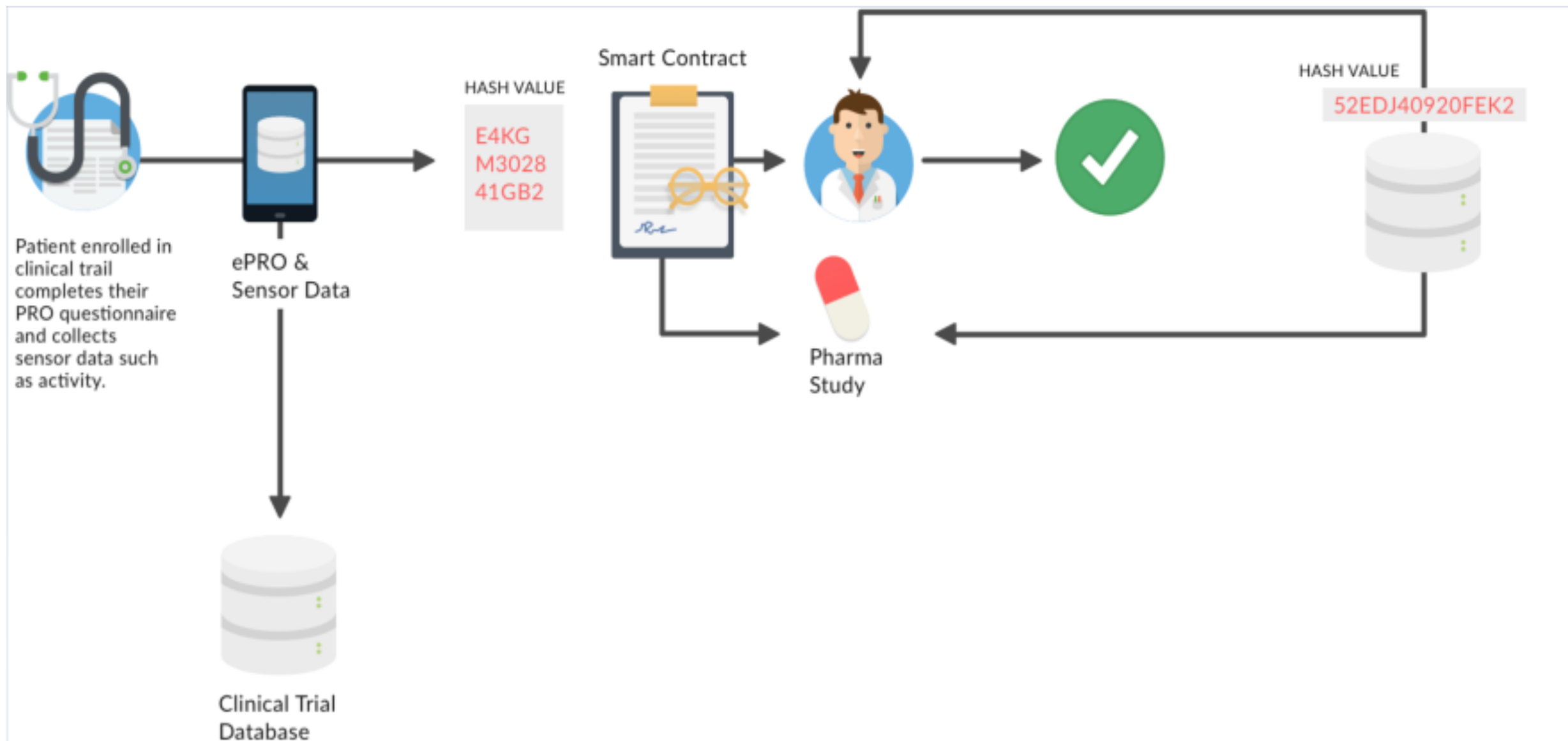
Enable pragmatic trial design

Use Case: Patient recruitment for Clinical Trial

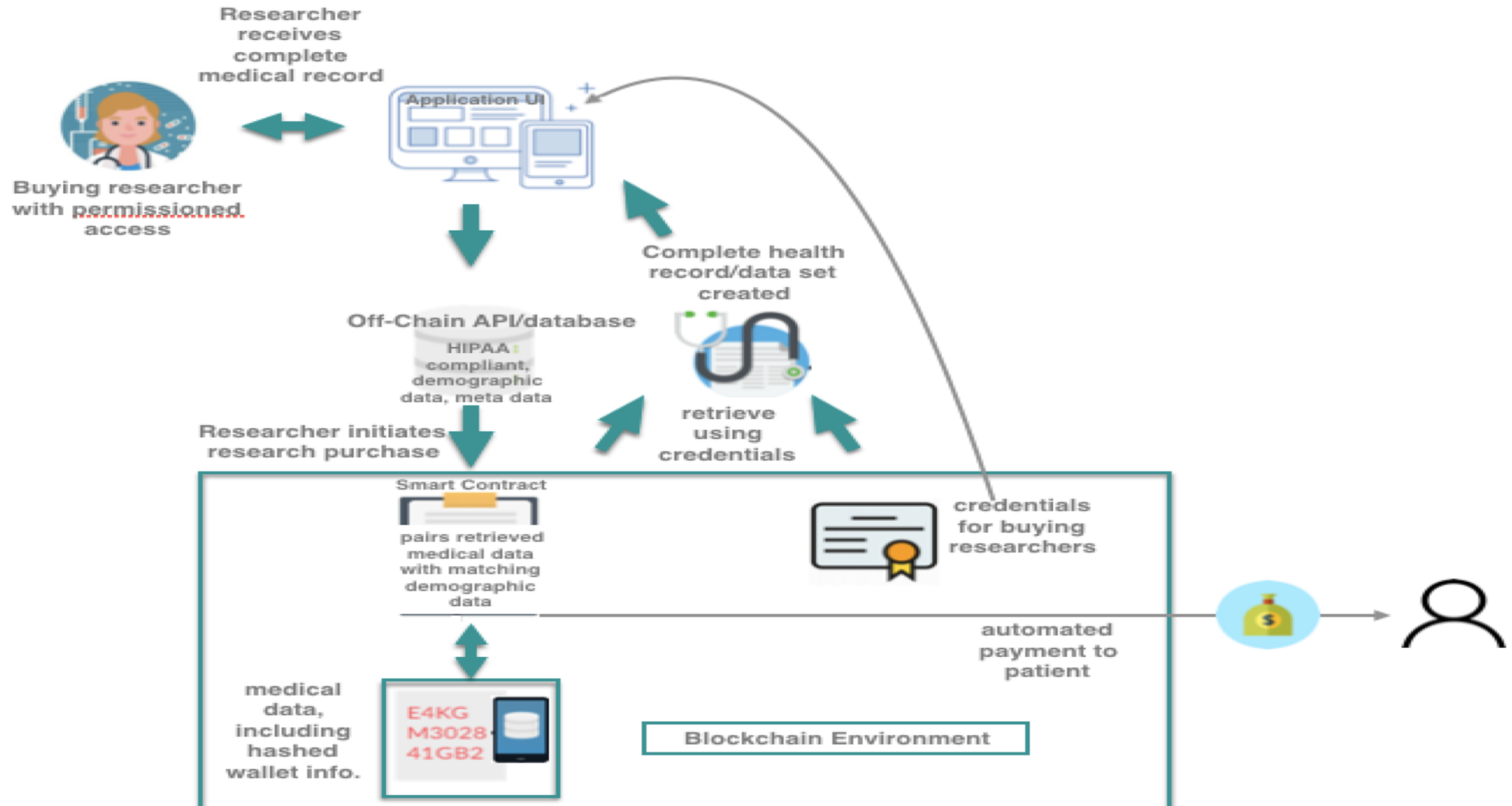
Use of EHR/EMR in clinical trials



Use Case: eCOA Work Flow in Clinical Trials



Use Case: Incentivizing patients



Maria Palombini, IEEE-SA

“alluring feature of blockchain is the ability to negotiate the tension between patient data privacy and sharing”



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5. Next Steps...



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Planned Publications

PhUSE

Healthcare in Blockchain Journal

Other Journals



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Collaborative Proof of Concept

Develop Core Team With Senior Leadership Sponsorship

- Perform Deep Dive Needs Analysis
- Gain Consensus on Problem Statement

Find and Join Cross-Industry Collaborative Group Working on Similar Use Case

- Non-profit Group e.g. PHUSE or IEEE
- Industry Incubator e.g. Pfizer&Deloitte

Determine with Collaborative Group if Standards Exist

- Select Blockchain Protocol
- Select Standard Integrations and Nomenclatures

Prepare Relevant Agreements for Proof of Concept

- Vendor Partner Selection
- Blockchain Technical Partner Selection

Perform Proof of Concept

- Document and Share Results
- Scale up

Perform Proactive Change Management on Adoption Process

Thank You



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**The premier community for people
working in the biometric area**

 ***phuse.eu***

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