SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF INFORMATION TECHNOLOGY

BLOCK CHAIN AND CRYPTOCURRENCY
IV YEAR - VII SEM

UNIT 1 – Block chain

Introduction to Block chain

What is blockchain?

▶ Paper (book) ledgers record account & trade balances, ownership of property, taxes, births, deaths, marriages ...

▶ charges, transactions, sale of property, official events, etc cause the ledger to be updated

▶ Blockchain is a new economic infrastructure that enables records to be maintained

P2P NETWORK — Connected computers...

CONSENSUS MECHANISM — ...reach agreement over...

BLOCK CHAIN — ...shared data.

Bitcoin blockchain

▶ **Bitcoin** blockchain solved the **double spending problem** by combining five technologies

1. Append-only databases
2. Public key cryptography
3. P2P networking
4. Game theoretic incentives
5. Consensus algorithms

version	02000000
previous block hash (reversed)	17975b97c18ed1f7e255adf297599b55 330edab87803c8170100000000000000
Merkle root (reversed)	8a97295a2747b4f1a0b3948df3990344 c0e19fa6b2b92b3a19c8e6badc141787
timestamp	358b0553
bits	535f0119
nonce	48750833

What is blockchain for?

- Social consensus about truth

- Many people need to agree about facts

- "Connected computers reach agreement about shared data"

Blockchains are new economic infrastructure

A tool not just for facilitating trade but for creating new economies

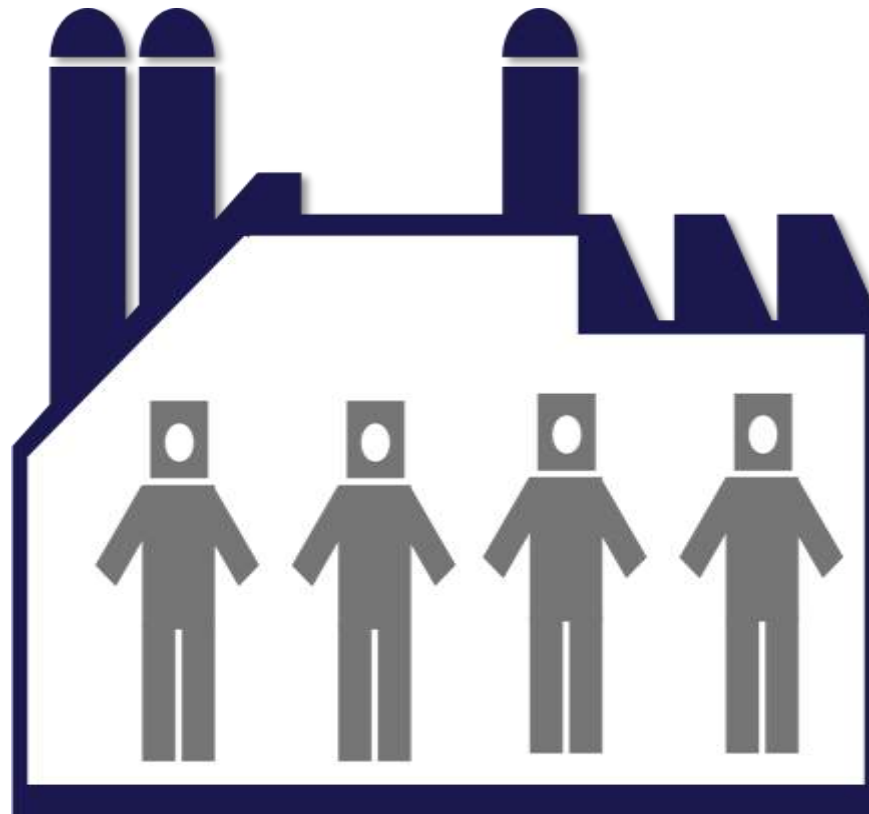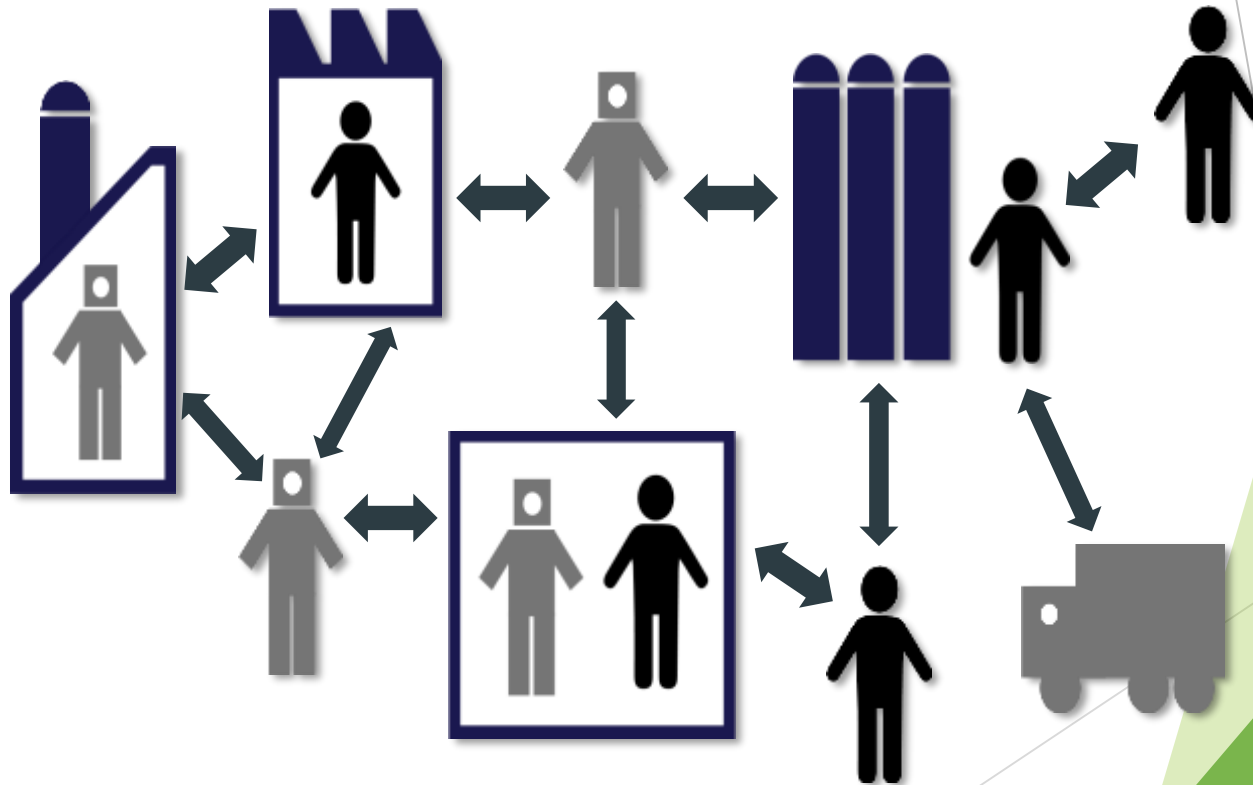|	
Money, value	*cryptocurrency, cryptoassets*
Rules	*code, protocols*
Contracts	*smart contracts*
Services	*Dapps*
Exchanges	*DX, Cross chain atomic swaps*
Monitoring	*hashes, Merkle trees, public blockchains*
Governance	*consensus, forking, on-chain*
cryptodemocracy	
Organization	*DAOs*
Security	*economic incentives*

One vision of the future

An alternative vision

We're not just innovating on production, we're innovating on governance

Supply chain Examples

1. Diamonds

2. Beef

3. Wine

De-commodification

- Adds value with trusted information

- Shifts value along the supply chain

- Premium pricing

reedom for robots

Autonomous navigation in the world (IoT)
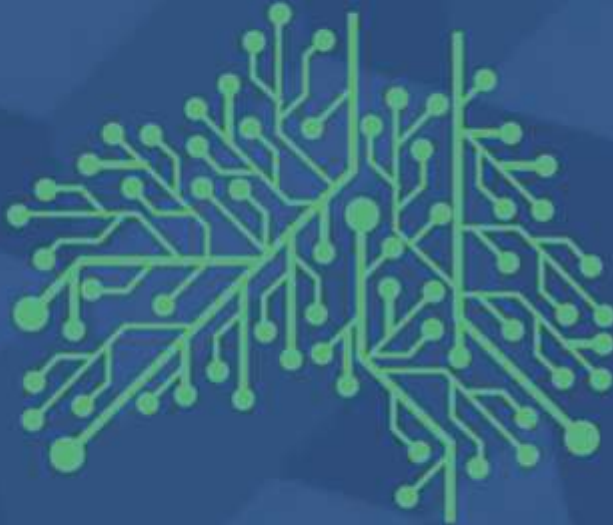
Technology stack

AI, 5G, LIDAR ...

Robots that can self-own, earn, contract, litigate … new economic life forms (NELF)

Technology stack
Blockchain

Digital Law: Australian National Blockchain

Horizon State

- Provides communities and enterprises with an empowerment platform that drives efficient decision making

- Provides a clearer understanding of customer and staff needs.

Secure Voting

By using our secure and reliable digital ballot box systems you can run elections across all industries with simple or complex requirements.

Community Engagement

Built with enterprise, community groups and local government in mind, Horizon State provides a set of surveying and polling tools to capture collective opinions and distill them into actionable insights.

Web3

- Web3 is next generation economic infrastructure

- Its what we're going to build economies of the future on

Blockchain Innovation Hub courses

The Blockchain Economy

Semester 1

Cryptocurrency & Cryptofinance

Semester 2

- These courses will provide students with an understanding of the economic function and implications of the technology.

- The RMIT Blockchain Innovation Hub plans to ensure that students are work-ready for this revolutionary new economic technology when they graduate.