Empowering Disability Support: Smart Contracts, Fintech, and NDIS

Leveraging Technology for Enhanced Service Delivery

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Content

1. NDIS
2. Understanding Smart Contracts
3. Integration Smart Contracts and NDIS
4. Demo
5. Ethical and Regulatory Considerations
6. Next Steps

What is NDIS?

- The **National Disability Insurance Scheme** (NDIS) is widely regarded as the **biggest social reform** in Australia since the introduction of Medicare.
- The ambition of the NDIS goes broader than increasing the quantity of disability support services available. The NDIS is also transforming how people with disability can access support services, with the aim of **providing greater quality, choice and control**.
- Operates on a national scale to ensure all Australians under the age of 65 who have a permanent or significant disability receive **reasonable and necessary supports** to live their lives and achieve their **goals**.
- Participants collaborate with the National Disability Insurance Agency (NDIA) and Local Area Coordinator partners to develop **tailored** NDIS plans to suit their circumstances.
- Plans can contain a range of budgets for different service categories, which participants can then use to purchases services. Service providers **compete** to deliver services on a **person-by-person basis.**

What is Smart Contracts?

Smart contracts are closely associated with blockchain technology.

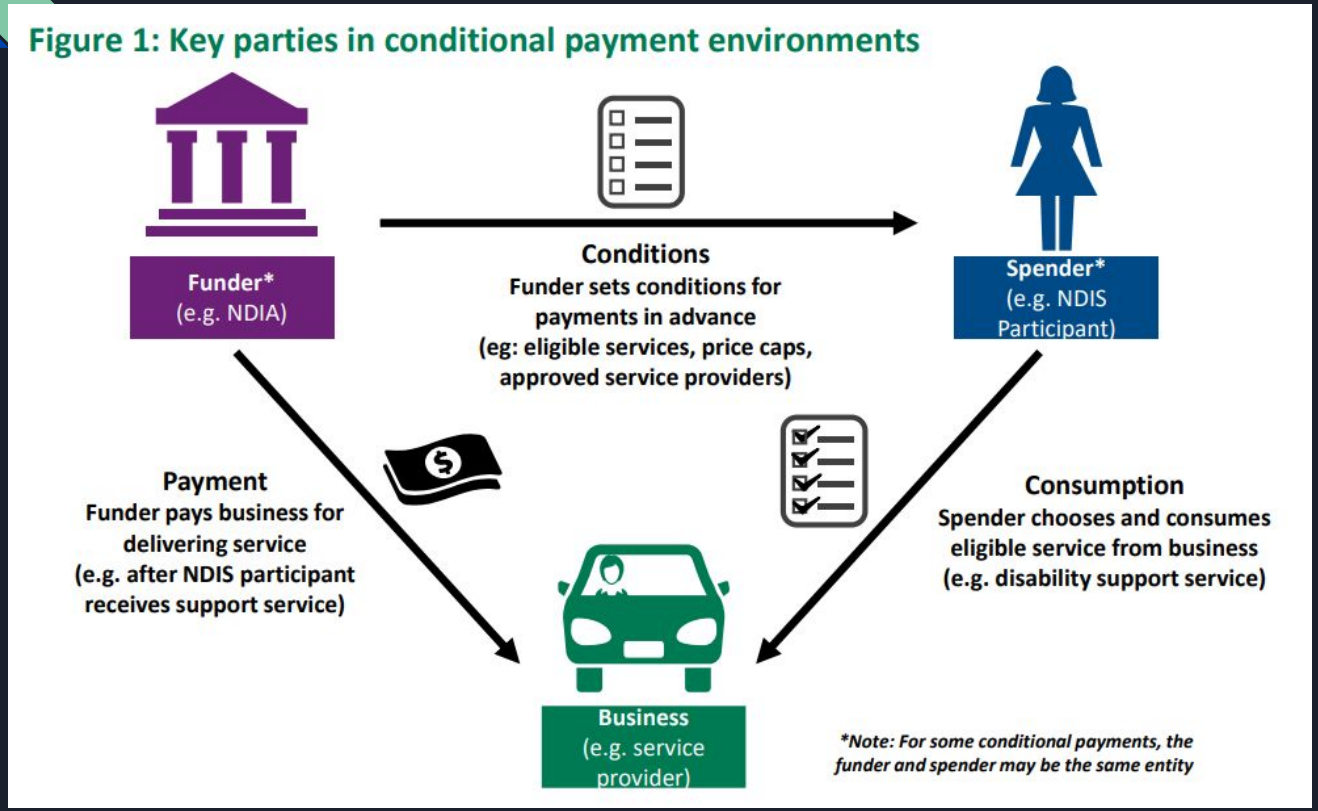
They are **self-executing** contracts with the terms directly written into code.

These contracts run on blockchain platforms, allowing for the **automated and secure execution of agreements** without the need for intermediaries.

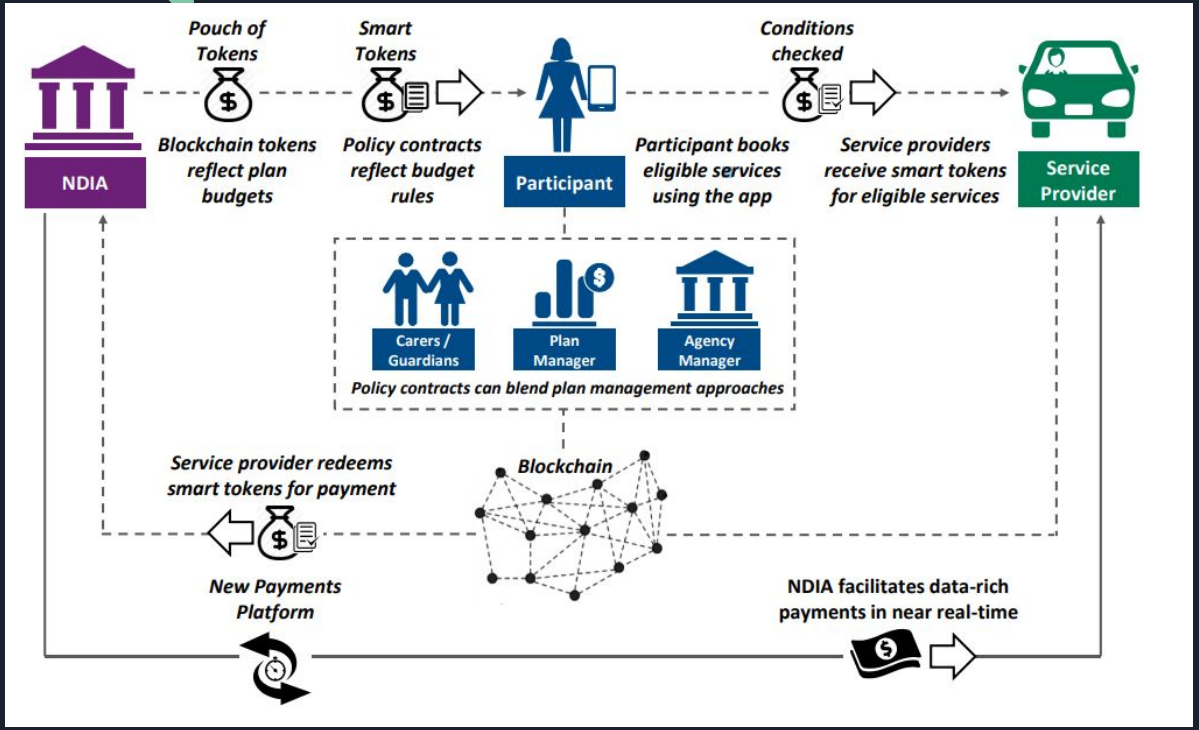
Blockchain technology provides the underlying infrastructure for smart contracts, ensuring **transparency, security, and immutability** of the contract's execution and outcomes.

Therefore, smart contracts rely on blockchain for their implementation and to ensure trust in their execution.

Smart Contract - Stakeholders



Smart Contract Proof of concept



- Smart contracts to create spending conditions based on NDIS plan rules, and registries to represent parts of the payment environment such as lists of eligible service providers for particular services
- NDIS participants are assessed before receiving a plan, and most, if not all, major service providers have already registered their details with the NDIA.
- This high level of trust can enable the efficiency and performance benefits that can result from private blockchains.

NDIS and Smart Contracts Integration

1. Streamlining Processes: Smart contracts can automate and manage agreements between participants, service providers, and government agencies.

2. Transparent Fund Handling: Ensuring transparent and accountable utilization of funds allocated for disability support services.

3. Reduced Administrative Overhead: Potential to streamline processes and reduce administrative burdens.

Potential Benefits

1. Enhanced Efficiency: Automation of various NDIS processes, leading to improved efficiency.

2. Improved Transparency: Smart contracts can enhance transparency in fund allocation and service delivery.

3. Accountability: Ensuring secure and accountable handling of funds, benefiting both participants and service providers.

Kay - Demo

Ethical and Regulatory Considerations

Privacy and Consent

Ensuring privacy and consent in the use of blockchain for NDIS.

Compliance

Ensuring compliance with existing regulations in the use of smart contracts for NDIS.

Data Security

Safeguarding sensitive participant data in blockchain-based transactions.

Legal Implications

Addressing legal considerations in the implementation of blockchain-based NDIS services.

Equity and Access

Addressing potential disparities in access to blockchain-based NDIS services.

Stakeholder Engagement

Involving stakeholders in the development of regulatory frameworks for smart contracts in NDIS.

Next Steps

Explore how machine learning could be associated with Smart Contract

a. **Automated Decision Making**
   > Predictive Insights - informing pre-defined conditions programmed on smart contract to enable more informed and automated decision making.
b. **Dynamic Contract Terms**
   > Machine Learning Algorithms - enforcing dynamic and adaptable contract terms based on trends and patterns analysed from large data sets
c. **Risk Assessment and Mitigation**
   > Risk assessment using historical data to automatically adjust terms, trigger actions, or manage assets based on real-time risk evaluations.
d. **Fraud Detection and Prevention**
   > Fraud Detection from transaction data - to enforce anti-fraud measures, enhancing security and trust within contract execution process

By integrating machine learning with smart contracts, organizations can potentially create more adaptive, data-driven, and automated contract systems, enhancing efficiency, accuracy, and responsiveness within various transactional and contractual processes.

Thank you!

Appendix

Blockchain

What

- Blockchains (and more broadly, distributed ledger technology) are a digital technology that combine cryptographic, data management, networking, and incentive mechanisms to support the **checking, execution, and recording of transactions between parties**.
- Transactions are confirmed through **consensus** across multiple parties. Parties proposing a transaction may add it to a pool of transactions intended to be recorded on the **ledger.**

Why

- Ability to **link** the transfer of value with the underlying data connected to that transfer, recording both on the same ledger;
- Automatic maintenance of an **immutable** source of truth for value exchanges that can be housed in **multiple distributed ledgers contemporaneously**;
- This could provide a **clear source of truth** in conditional payment environments.
- Ability to **integrate** enforceable rules as part of conditional exchanges of value

Features Discovery

Services	Description
Support Coordination	Participants may receive assistance in coordinating their supports, ensuring that the services they receive are tailored to their individual needs and goals.
Core Supports	These are essential daily supports that help participants with activities of daily living, such as personal care, domestic tasks, and community access.
Capacity Building Supports	Aimed at building the participant's skills and independence, these supports may include assistance with education, employment, social and community participation, and improved health and wellbeing.
Assistive Technology	Funding for aids, equipment, or technology that can help participants perform daily activities and increase their independence.
Home Modifications	Funding for modifications to a participant's home to make it more accessible and suitable for their needs.

Services	Descriptions
Specialist Disability Accommodation (SDA)	Funding for housing that meets the specific needs of participants with extreme functional impairments or very high support needs.
Early Childhood Early Intervention (ECEI)	Support for children aged 0 to 6 years who have developmental delays or disabilities, aiming to provide early intervention and support.
Reasonable and Necessary Supports	NDIS funds services and supports that are considered reasonable and necessary for the participant's circumstances, based on their individual goals and needs.
Assistive Technology	Funding for aids, equipment, or technology that can help participants perform daily activities and increase their independence.
Home Modifications	Funding for modifications to a participant's home to make it more accessible and suitable for their needs.