**Table 2: Technical details of the Hayat donor registry in UAE [27]**

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| --- | --- |
| **Technical Detail** | **Description** |
| Technology | Uses smart contracts and distributed ledger technology |
| Purpose | Improving and securing organ donation practices in UAE |
| Features | Digital wallet, user-friendly interface, transparent and secure transactions |
| Collaboration | Developed by Dhonor Healthtech in collaboration with UAE's Ministry of Health and Prevention (MOHAP) |
| Benefits | Prevents illegal organ trading, ensures legal authorization of donors and recipients, improves transparency and accountability in the donation process |
| Goal | To provide a secure and transparent way for individuals to record their legal will as donors |
| Implementation | Rolled out in UAE as a national registry for organ donation |
| Advantages | Improves trust in the organ donation system, reduces the risk of fraud and abuse, enables more efficient and effective donation practices |
| Challenges | Adoption and usage by the public, integration with existing healthcare systems, maintenance and scalability of the platform |
| Future potential | To expand to other countries and regions, possibility of integrating with other healthcare technologies and innovations. |

**Table 3. Technical details for the Abu Dhabi Digital Signature solution [27]**

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| --- | --- |
| **Initiative** | **Description** |
| Abu Dhabi Digital Signature | Blockchain-based platform for secure and tamper-proof signing and verification of electronic documents |
| Technology | Uses blockchain technology and smart contracts to create and manage digital signatures |
| Security | Provides secure and tamper-proof digital signatures that are backed by the blockchain network, ensuring that they cannot be altered or manipulated |
| Integration | The platform can integrate with existing digital systems and platforms, such as document management systems and enterprise resource planning systems |
| Benefits | The Abu Dhabi Digital Signature solution enables efficient and secure data exchange, reduces fraud and errors in document signing, increases transparency and trust in electronic transactions |
| Implementation | Rolled out in Abu Dhabi as a government initiative, and is available to government entities, private companies, and individuals |
| User Interface | The platform provides a user-friendly interface for easy adoption and usage, and supports multiple languages |
| Compliance | The platform complies with local laws and regulations related to electronic signatures, including the UAE Federal Law No. 1 of 2006 on Electronic Transactions and E-Commerce |
| Future | The platform has the potential to expand to other regions and industries, and there is the possibility of integrating it with other blockchain-based solutions for increased efficiency and effectiveness |

**Table 3: Additional technical details specific to ADDA initiatives that are powered by blockchain technology**

**Table 3.1. TradeNet initiative**

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| --- | --- |
| **Initiative** | **Description** |
| **TradeNet** | A blockchain-based trade finance platform that enables secure and transparent trade transactions |
| Technology | Uses blockchain technology and smart contracts to create a secure and transparent platform for trade finance |
| Security | Provides secure and tamper-proof transactions that are backed by the blockchain network, ensuring that they cannot be altered or manipulated |
| Integration | The platform integrates with existing trade finance systems and platforms, and enables seamless access to trade finance services |
| Benefits | TradeNet enables faster and more efficient trade transactions, reduces the risk of fraud and errors, and increases transparency and trust in trade finance |
| Implementation | Rolled out in Abu Dhabi as a joint initiative between ADDA, Abu Dhabi Global Market, and the UAE Central Bank |
| User Interface | The platform provides a user-friendly interface for easy adoption and usage, and supports multiple languages |
| Compliance | The platform complies with local laws and regulations related to trade finance and blockchain technology |
| Future | The platform has the potential to expand to other regions and industries, and there is the possibility of integrating it with other blockchain-based solutions for increased efficiency and effectiveness |

**Table 3.2. Digital IDs initiative.**

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| --- | --- |
| **Initiative** | **Description** |
| **Digital IDs** | A blockchain-based digital identity platform that enables secure and tamper-proof authentication and verification |
| Technology | Uses blockchain technology and smart contracts to create and manage digital identities |
| Security | Provides secure and tamper-proof digital identities that are backed by the blockchain network, ensuring that they cannot be altered or manipulated |
| Integration | The platform can integrate with existing digital systems and platforms, such as document management systems and enterprise resource planning systems |
| Benefits | The digital identity platform enables efficient and secure authentication and verification, reduces the risk of fraud and errors, and increases transparency and trust in digital transactions |
| Implementation | Rolled out in Abu Dhabi as a government initiative, and is available to citizens, residents, and visitors to the UAE |
| User Interface | The platform provides a user-friendly interface for easy adoption and usage, and supports multiple languages |
| Compliance | The platform complies with local laws and regulations related to electronic signatures and digital identity |
| Future | The platform has the potential to expand to other regions and industries, and there is the possibility of integrating it with other blockchain-based solutions for increased efficiency and effectiveness |

**Table 4. Technical details of the Dubai Blockchain Business Registry [30]**

|  |  |
| --- | --- |
| **Technical Details** | **Description** |
| Technology | The Dubai Blockchain Business Registry is built on blockchain technology, which enables secure and transparent storage and sharing of data related to business registration and licensing. The blockchain used is a ***private permissioned blockchain,*** which means that access to the network is restricted to authorized parties only. |
| Security | The blockchain network provides secure and tamper-proof storage of data, ensuring that the information cannot be altered or manipulated without proper authorization. The use of cryptographic algorithms and digital signatures further enhances the security of the system. |
| Functionality | The Dubai Blockchain Business Registry enables businesses to register and obtain licenses through a single online platform. The platform provides a range of services, including application submission, document verification, and payment processing. |
| Integration | The platform is designed to integrate with other government systems and databases, such as the ***Department of Economic Development and the General Directorate of Residency and Foreigners Affairs***. This enables seamless data exchange and improves the efficiency of the registration and licensing process. |
| Benefits | The Dubai Blockchain Business Registry provides several benefits, including increased efficiency and transparency, reduced processing time, and enhanced security and trust. The platform also simplifies the process of business registration and licensing, making it easier for entrepreneurs to start and grow their businesses. |
| Compliance | The platform complies with local laws and regulations related to business registration and licensing, and ensures that all data is stored and processed in a secure and transparent manner. |
| User Interface | The platform provides a user-friendly interface for easy adoption and usage, and supports multiple languages. Users can access the platform through a web portal or mobile application. |
| Future | The Dubai Blockchain Business Registry has the potential to expand to other regions and industries, and there is the possibility of integrating it with other blockchain-based solutions for increased efficiency and effectiveness. The platform is also expected to evolve over time, as new features and functionalities are added to enhance the user experience. |

**Table 5. Salient features of the Dubai Blockchain Business Registry [30]**

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| --- | --- | --- |
| **Aspect** | **Traditional Process** | **Dubai Blockchain Business Registry** |
| Processing Time | Typically takes several weeks to process applications and issue licenses. The process involves manual verification of documents and information, which can lead to delays and errors. | Can process applications and issue licenses within 1-2 business days. The platform uses advanced technology, including machine learning and AI algorithms, to automate the verification process and ensure accuracy and speed. |
| Cost | Involves multiple fees and costs, including application fees, license fees, and renewal fees. The fees may vary depending on the type of business and the specific requirements. | Involves a single fee for the application and license, which can be paid online using a secure payment gateway. The fee is fixed and transparent and does not depend on the type of business or requirements. |
| Security | The traditional process involves the physical submission of documents, which can be lost or damaged during processing. There is also a risk of fraud and forgery, as well as unauthorized access to sensitive information. | The platform provides secure and tamper-proof storage of data, ensuring that the information cannot be altered or manipulated without proper authorization. The use of cryptographic algorithms and digital signatures further enhances the security of the system. |
| Transparency | The traditional process may lack transparency, as the status of the application and the reasons for delays or rejections may not be communicated effectively to the applicant. | The platform provides real-time updates on the status of the application, as well as any issues or errors that need to be addressed. This ensures transparency and accountability, and helps to build trust between the government and businesses. |
| User Experience | The traditional process may involve complex procedures and requirements, which can be confusing and time-consuming for applicants. | The platform provides a user-friendly interface for easy adoption and usage and supports multiple languages. Users can access the platform through a web portal or mobile application and can track their applications and licenses in real-time. |
| Integration | The traditional process may involve multiple government departments and agencies, which can lead to inefficiencies and delays. | The platform is designed to integrate with other government systems and databases, such as the Department of Economic Development and the General Directorate of Residency and Foreigners Affairs. This enables seamless data exchange and improves the efficiency of the registration and licensing process. |
| Scalability | The traditional process may be limited in its capacity to handle large volumes of applications and licenses, especially during peak periods. | The platform is built on advanced technology and can handle large volumes of applications and licenses, with the ability to scale up as needed. This ensures that the registration and licensing process remains efficient and effective, even during peak periods. |

**Table 6. Emirates NBD's ChequeChain initiative [32]**

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| --- | --- |
| **Aspect** | **Details** |
| Platform | Blockchain-based platform for cheque verification and authentication. |
| Blockchain Technology | Built on the IBM Blockchain Platform, using the Hyperledger Fabric framework. |
| Functionality | Enables real-time verification and authentication of cheques, reducing the risk of fraud and errors. |
| Security | Provides secure and tamper-proof storage of cheque data, with cryptographic algorithms and digital signatures to ensure data integrity and confidentiality. |
| Efficiency | Reduces the time and costs associated with manual cheque verification and authentication processes. |
| Impact on Profit | Emirates NBD reported an increase in profit by 15% after implementing ChequeChain, due to reduced cheque fraud and improved operational efficiency. |
| Number of Cheques Processed | Since its launch in 2018, the platform has processed over 1 million cheques. |
| Customer Satisfaction | The platform has received positive feedback from customers, with 92% of surveyed customers reporting satisfaction with the platform's speed and efficiency. |

**Table 7. Technical details on DubaiPay Blockchain Settlements System [33].**

|  |  |
| --- | --- |
| **Technical Details** | **Description** |
| Blockchain Platform | Hyperledger Fabric |
| Participants | Dubai government entities, including Dubai Electricity and Water Authority, Dubai Municipality, and Dubai Police |
| Purpose | To enable real-time settlements between government entities using blockchain technology |
| Launch Date | May 2018 |
| Transactions | Over 5 million transactions processed as of 2021 |
| Benefits | Real-time settlement of payments, enhanced efficiency, reduced costs, improved transparency and security |
| Partners | Dubai Smart Government, IBM |
| Success | 90% reduction in the time taken to reconcile payments between government entities |