DUBAI BLOCKCHAIN POLICY







CONTEXT OF THE DUBAI BLOCKCHAIN POLICY

Dubai Blockchain Strategy Pillars

GOVERNMENT EFFICIENCY

Use cases



Blockchain Platform Blockchain Policy

INDUSTRY CREATION



Global Blockchain Challenge

Start ups Accelerators

INTERNATIONAL LEADERSHIP



Global Recognition

Events





Non-Exhaustive



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Objectives behind developing the Dubai Blockchain Policy



Facilitate the resolution of Blockchain implementation challenges through guidance and policy directives Govern the creation, management, and expansion of value-creating Blockchain networks across Dubai and the UAE

Support and drive the adoption of Blockchain technology especially for government entities

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Minimize security and privacy risks associated with Blockchain implementation and distributed ledger



Provide a legal foundation for supporting digital services and dispute resolution



Blockchain Policy Focus Areas





Approach For Drafting the Dubai Blockchain Policy





Approach For Drafting the Dubai Blockchain Policy





Takeaways from Blockchain Policy Benchmarking



Regulation of Blockchain and DLT through technology certification via a system auditor that reviews and assesses the technology arrangement and provides assurance on the solution's quality and characteristics.

Regulation of the token economy by focusing on the creation, storage, and transfer of tokens, along with the security for enforcement of the rights associated with every token.



Taking the approach of removing the legal barriers for the adoption of Blockchain by developing Blockchain-friendly legislation and supporting the use of Blockchain for conducting business.



Highlighting the role of competent authorities and their responsibility of providing further guidance and working with international organizations on the development of technical standards.



TAKEAWAYS FROM BLOCKCHAIN POLICY BENCHMARKING

Governments around the world have taken different steps with regards to Blockchain regulations, but none of them have yet issued a policy. Dubai's Blockchain policy is the first of its kind globally

	Malta	Liechtenstein	European Union	United States of America
Policies / Regulations	3 Cryptocurrency & Blockchain related laws, enabling the technologies	Proposed Blockchain Act enabling a "token economy"	Urging the EU Authorities to take steps to maximize the use of Blockchain Initiated use case research	No Federal Legislation States are passing legislation enabling Blockchain Technology
Key Action Taken	 MDIA Act: Established the Malta Digital Innovation Authority Partners with technology providers to certify Blockchain Platforms and enforce their Blockchain framework 	 Legally recognize transactions made on virtual token systems (Blockchain) Financial Market Authority to be given authority to regulate and approve virtual token system suppliers 	 Issued non-legislative resolution urging EU Authorities to promote Blockchain Initiated study into EU-wide Blockchain Policies and use cases to improve cross- border European services 	 States are exploring and implementing Blockchain-friendly legislation enabling and legalizing Blockchain contracts and transactions However, several States have yet to even explore the technology



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Government

Industry

Network Governance				
Network Ownership & Intellectual Property Membership				
Funding & Monetization	Funding & Network Expansion			
Technology Platform Architecture & & Services Standards				

GLOBAL TAKEAWAYS ON NETWORK GOVERNANCE (1/2)

Network	Estonian entities own their Blockchain Networks, and the Information Systems Authority (RIA) is responsible for providing implementation support, updates, and maintenance to maintain X-Road integration compatibility.
Membership	IBM and Maersk own the TradeLens IP and platform, and market their solution by promoting industry collaboration and overall efficiencies in the global supply chain industry
Funding &	Governments have utilized two main ways to fund Blockchain projects and development, single entity funding or consortium based grants, however no details have emerged on how and if they aim to monetize the data
Monetization	Venture Capitalists have been increasing their Blockchain technology investments, highlighted by a year-on-year increase of 280% so far in 2018

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Industry

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Metwork Governance				
Network Ownership & Membership	Intellectual Property			
Funding & Monetization	Network Expansion			
Technology Platform & Services	Architecture & Standards			

GLOBAL TAKEAWAYS ON NETWORK GOVERNANCE (2/2)

Intellectual	The EU and other leading governing bodies are tackling IP in Blockchain technology by applying existing laws and regulations	While the general approach to Blockchain development has been open source, companies and consortiums, like IBM and TradeLens, have been applying for IP protection for their use case specific Platforms
Property	Blockchain technology will require a portfolio of Intellectual Property protections to properly cover the different elements of the technology, including ledgers, algorithms, and network design	Open Source licensing will accelerate innovation in Blockchain technology, but closed source development can protect specific implementations
Network	Estonia has collaborated with Finland to extend their integration platform, X-Road, across borders and provide Digital Services overseas, however there are currently no cross-border government Blockchain Networks	Blockchain companies and Platforms, such as Ripple's xCurrent Platform, have been adopted by several international banks to make their cross-border payments more efficient
Expansion	TradeLens is attempting to adopt international standards, create APIs, and factor stakeholder feedback to encourage ports and global companies to adopt the platform internationally	
Government		





GLOBAL TAKEAWAYS ON NETWORK OPERATIONS (1/3)

Data Formats &	Estonia's X-Road Integration Solution operates on defined data formats that entities are required to comply with when implementing their Blockchain solutions, while ASX have collaborated with ISO to standardize their messaging Protocol format	ISO and W3C are leading the development in Blockchain technology standards to increase global cross-network and cross-protocol interoperability, while industry leader, Ripple, has defined their Platform's data formats to eliminate implementation variation
Interoperability	Companies such as Cosmos and Polkadot are developing solutions for cross platform interoperability, however the technology is still in its early stages and requires further development before large scare utilization	The Blockchain Interoperability Alliance are building solutions to eliminate the reliance on centralized intermediaries by tackling the challenges of Network congestion, and bridging the gap between private and public Blockchains
Data Privacy &	Estonia, Singapore, and Australia have developed solutions and implemented policies to protect Data Privacy and Confidentiality, focusing on limiting the distribution of data to only what is necessary	The EU's GDPR standing on data in Blockchain Networks is unclear, however, GDPR does not apply to government Blockchain networks in the UAE
Confidentiality	Dubai and the UAE are leading the way with their robust Data Protection laws and Classification Standards	Industry leaders have tackled Data Privacy and Confidentiality by mainly designing a single validation source and strict Data Access Rights, like Ripple with xCurrent, or by providing API database shielding functionality, like TradeLens





GLOBAL TAKEAWAYS ON NETWORK OPERATIONS (2/3)

Network Security		Estonia and KSI utilize autonomous data anomaly detection functionality to protect its Networks and the RIA have been given Network Security responsibilities		ASX has engaged with PKI consultants to make use of Digital Certificates for secure authentication, encryption, and signing, and have announced that Digital Asset will assist in node implementation to ensure security standards compliance	
	ĉ	Industry leaders mainly use standard node implementation methods, however utilize different methods in verifying node integrity, with xCurrent having a single source of truth auditing ledgers, while Ethereum relies on consensus to detect anomalies	Ô	Blockchain Network Security faces six main challenges, however, they can be addressed by implementing a combination of best practices from leading Platforms and Protocols	
Audit & Compliance		Blockchain policy compliance audit can be conducted in different ways, leveraging the technology itself to enable oversight		Regulation through certification typically applied where a sector or technology in this context is currently lacking standards and measures	
		Setting standards and control measures may hinder innovation and result in restricted application to a yet emerging technology and experimental use case. The certification approach enables creativity and innovation with proper testing and oversight		Where blockchain technology has a regulated sector applications built or deployed on top of it, then these actions will fall under the current regulatory framework applied by such sector/industry regulator including audit and compliance	

Industry

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GLOBAL TAKEAWAYS ON NETWORK OPERATIONS (3/3)



Estonia has incentivized the adoption of KSI mainly through entity funding, grants in the form of "Tokens", and by creating the RIA to provide implementation, integration, and maintenance support

Australia and South Korea, have established initiatives to better educate and engage the community on Distributed Ledger Technology

Communication & Adoption



Ripple and other Blockchain platforms are driving the adoption of their solutions by marketing advantages over existing systems and traditional means of money transfer

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Stakeholder engagement and standardization are being utilized as a key method to encouraging adoption, like TradeLens who is utilizing a combination of both techniques





ndustry



GLOBAL TAKEAWAYS ON FUNDAMENTAL CAPABILITIES (1/2)





Government

ndustry



GLOBAL TAKEAWAYS ON FUNDAMENTAL CAPABILITIES (2/2)





Approach For Drafting the Dubai Blockchain Policy





Policy workshops activities

The Workshops Constituted of Six Main Activities

Welcome and Registration

Welcoming representatives of key stakeholders to discuss the Dubai Blockchain Policy needs and their options

Introduction to Dubai Blockchain Policy Development

Introductory session to introduce the project's objectives and roadmap, and present the aims and objectives of the workshop

Introduction to the Policy Focus Areas

Presenting the Blockchain Policy main focus areas, which address: Foundational Capabilities, Network Governance and Network Operations

Live Polls

Engaging with the stakeholders in a live poll exercise, where participants were asked about challenges, their position and stance, and opinions on Blockchain in their respective field

Policy Needs and Options Identification

Breaking out into focus groups to engage in an interactive and lively session, discussing Blockchain Policy needs, and possible policy options

Closing Note and Next Steps

Closing the session by recapping formulated discussion points, and the upcoming roadmap and timeline for the Dubai Blockchain Policy



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Policy workshops objectives

The Objectives Of The Workshop Were To Capture The Challenges They Are Currently Facing, Identify Their Policy Needs, And Discussing Possible Options To Address Their Needs

Summarize and Confirm the Key Blockchain Implementation Challenges

Understand and confirm the current challenges that government entities, banks, and start-ups are facing in their Blockchain implementation journey

Identify Blockchain Policy Needs

Identify the current gaps and needs in the Blockchain ecosystem and implementation in Dubai from the perspectives of government entities, banks, and start-ups

Brainstorm Dubai Blockchain Policy Options

Work with the participants to identify possible policy options from their perspectives to answer their identified needs and provide the required support for Blockchain adoption.



Several challenges were Identified by participants from blockchain usecase Development And Implementation

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	Collaboration & Communication	Investment & Business Model	Supporting Shared Services	System Integration & Data Sync	Supporting Laws & Regulations
es Dy	Entities and business partners are reluctant to collaborate and share data	Funding and monetization structure, policies, and framework	Cross network compatibilities and reluctance to share services	On-chain and off-chain data and service synchronization	Unclear and undefined legal landscape
nt	0		C	J.	
	Data Privacy & Confidentiality	Blockchain Platform Selection	System & Software Security	Operating Model & Consensus	Blockchain Skills and Capabilities
	Data ownership, data access restrictions, and policies	Which platform to select for a Platform's specific use case or functionality needs	On-chain node security and off-chain data & network security	Lack of a defined structure for network members' roles and responsibilities	Lack of Blockchain experts & skills required to implement and support Networks



Top Challenges Government Entities Are Facing During Their Blockchain Implementation Journey Focused Around Supporting Laws & Regulations, Collaboration & Communication, and Operating Model & Consensus

Top challenges faced dur	Analysis.	
Supporting Laws & Regulations	68%	Supporting Laws & R
Collaboration & Communication	65%	Concerns over the su regulations related to
Operating Model & Consensus	62%	These concerns enco alignment with other regulations within fre
Data Privacy & Confidentiality	47%	
Blockchain Skills & Capabilities	44%	Collaboration & Comm
System Integration & Data Sync	41%	A lack of collaboration
Investment & Business Model	38%	bottleheck, stilling us
System & Software Security	26%	Operating Model & Co
Supporting Shared Services	24%	A defined operating h network fundamenta and interaction polici
Blockchain Platform Selection	15% 34	Consensus concerns e individual nodes incer not given to one enti

GOVERNMENT ENTITIES

egulations pporting laws & regulations for nascent technology as well as the the rapid changes in the ecosystem mpass the laws that will support private sector services and their federal or government entities on the network, including the e zones in the UAE nunication and communication is feared to lead to a silo model, defeating the ion through Blockchain n and willingness from other entities to join networks has lead to a se-case development and government-wide adoption onsensus Model has been identified as a main challenge considering how the Is will operate, including participating entity roles and responsibilities, es and guidelines encompass protocol, and platform selection, consensus on collective vs ntives, and finding an ownership mechanism where ultimate power is ity



Other Key Challenges Government Entities Are Facing During Their Blockchain Journey Focused Around Data, And A Lack Of Resources Needed For Efficient Implementation

possibilities operation support planet Nervousness ownership cost protection networks service ownership nodes Communication Cost Open revenue partnership policy Private business Do we need blockchain? new technologies Partners Collaboration ROI block Courts integration iernn **Operating Model** weak partnership users sizing standardization security regulations repository DOC sla scaling 34 10 public

Other concerns or challenges expressed by government entities

GOVERNMENT ENTITIES

Analysis:

Data

Data privacy, confidentiality, security, sharing, access, format, and classification have emerged as leading concerns for government entities due to the lack of clarity with regards to Blockchain data classification and access privileges for each class.

Do we need Blockchain?

Entities expressed a lack of guidance on when to utilize Blockchain over more traditional technologies. Ensuring Blockchain is ideal to the intended use-case has been a major concern for entities who require seeking government funding for technology developments.

Partners

Finding the right implementation partner and platform has been a major concern for entities who seek to on-board other authorities, as the technology is still developing, and ensuring that they are investing in a future proof partner that will continuously develop their solution has caused adoption hesitation.



All Banks Have Classified Regulatory Uncertainty As The Leading Challenge In Their Blockchain Implementation Journey



BANKING WORKGROUP

Analysis:

Regulatory Uncertainty

Regulatory uncertainty is a broad umbrella as it encompasses the regulation of technology platform and services, liability, data sharing, compliance with the Central Bank's requirements, trademarks, IP, and ledger auditing/audit trail

The uncertain legal implications of data and contracts stored and transferred on Blockchain networks has delayed deployment of use-cases as ensuring compliance is a key element in banking operations

Scalability

Ensuring scalability, not just with other banks, but with government entities that enable a large amount of use-cases, including KYC verification has emerged as a key challenge for banks

A future-proof concept has also concerned banks as Blockchain implementation is still in its development phase, thus making it expensive, and leaving room for future, non-backward compatible infrastructure developments

Collaboration & Interoperability

Concerns include defining platform and data interoperability, mandating roles within entities, and maintaining collaboration between different entities and networks

Collaboration concerns align with government entity challenges. Communicating the benefits of a network and answering the challenging question of "what is in it for me" has repeatedly hindered platform and use-case development



All Banks Have Classified Regulatory Uncertainty As The Leading Challenge In Their Blockchain Implementation Journey

Other concerns or challenges expressed by banks

Intrinsic value and fluctuations

Trust and Liability AML Funds KYC provenance Source Underlying asset value

Analysis:

BANKING WORKGROUP

KYC & AML

Banks mostly fear the repercussions of the lack of KYC & AML functionality and implementation in the Blockchain and Crypto industry. While many banks detailed they are mainly developing KYC use-cases, this requires government entity integration and a legal framework that enables digital verification.

Trust and Liability

Liability ownership was a repeated concern amongst bank representatives with many reluctant to accept the adoption of both Blockchain and Crypto if the liability falls on them.

Underlying asset value

The underlying value of the platform is concerning as the technology is still developing, thus leading to continuous updates and a high risk of redundancy. The risk of having an old technology in the near future, paired with a high initial investment has lead to concerns amongst banks and upper management.



START-UPS

Laws and Regulations

- Alignment with regulators on the best-in-class policies and regulations
- Lack of consistency amongst government regulators in terms of views on ICOs and Distributed Ledger Technologies
- Lack of definition consistency and clarity
- Lack of consistency and views at an Emirate, Federal and global scale
- Global scalability and regulatory compliance, paired with the cost of innovation in the UAE makes it difficult to expand and infeasible to develop on a local scale

Cost

The high cost of regulatory compliance is too high for emerging companies who are stiff on funding, which discourages further innovation and use-case rollout

ICO & DSO

Having clear distinction and definition of ICOs and DSOs (digital securities / assets / tokenization) is key for start-ups who seek to implement solutions in the UAE and worldwide, since DSOs follows the regulations of the countries and already exist

Language

Lack of Arabic educational and reference material stifles technological innovation, awareness, and education on a regional scale

Intellectual Property and Protection

Unclear Intellectual Property framework and protection does not protect use-case creation, but encourages innovation as IP can limit innovation. Start ups expressed they do not want IP laws restricting idea development and having larger industry players dominating the market

Transparency

Lack of transparency at a government level makes developing use-cases skeptical due to the unclear developments within government entities that could render their solutions invalid in the future

Policy Workshops identified Challenges

Similar To The Government Entities And Banks, Start-ups Have Mainly Faced Issues With Current Laws And Regulations In Dubai And The UAE



Approach For Drafting the Dubai Blockchain Policy





Blockchain Policy Focus Areas





Blockchain policy focus areas

The Blockchain policy focus areas cover the complete lifecycle of Blockchain adoption and implementation

	Network Governance		Network Operations
Network Ownership & Membership	Ownership of a Blockchain network, joining a network, leaving a network, permissions	Data Formats & Interoperability	Standardization of data formats across the network and interoperability between its members
Funding &	Network investment and funding approach,	Data Privacy & Confidentiality	Privacy, data classification, confidentiality and sharing standards, GDPR
Monetization	accounting, monetization Data, ledger, network design and solutions ownership and licensing Connecting to external networks including UAE, GCC, and international networks	Network Security	Ledger security, network security, data encryption, network access, vulnerability and breach management
Intellectual Property		Communication & Adoption	Approach for communication and spurring adoption, enhancing uptake and collaboration
Network Expansion		Audit & Compliance	Audit and inspection for compliance to the set guidelines and standards, reporting

Foundational Capabilities			
Technology Platform & Services Selection of technology platform and its enabling services, supply chain security			
Architecture & Standards	Overall Blockchain implementation architecture and standards adoption		
Shared Network Services	Services including digital identity, digital signatures, node certification, payments and settlements		
Legal Support	Legal standing with respect to smart contracts, digital signature, including dispute resolution		



The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

Policy Needs		Policy Needs		
	Driving collaboration across government entities and addressing duplication of Blockchain networks.		Guidance on what can be covered under IP in Blockchain networks and the associated services.	
Network	Guidance on network on-boarding and off-boarding procedures.	Intellectual Property	Guidance on how to handle, protect, and license IP rights.	
Ownership &	Guidance on viable Blockchain networks operating model including different roles and responsibilities.		Clarity on data ownership rights when data is shared	
Membership	Guidance on consortium formation, whether to be driven by a sector leader or driven by joint-ventures.		between entities and becomes part of the distributed ledger.	
	Guidance on fair and secure consensus and transaction validation mechanisms.		Guidance on contractual agreements and IP when forming consortiums and joint-ventures.	
	Guidance on funding models for Blockchain networks, including CAPEX and OPEX costs.		Guidance on approaching and joining GCC and international Blockchain networks.	
Funding and Monetization	Guidance on monetization and business models that are applicable to government entities.	Network Expansion	Guidance on cross-sector expansion of Blockchain networks.	
	Guidance on cost sharing for common network services, including legal and court fees, across the Blockchain network.		Guidance on how network members can reach agreement on expanding the network beyond its current boundaries.	

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The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

	Policy Needs	How it is addressed in the Policy	Article(s)
Network Ownership & Membership	Driving collaboration across government entities and addressing duplication of Blockchain networks.	Smart Dubai has taken responsibility of approving Blockchain networks, ensuring value-creating and mutually exclusive use-cases	5
	Guidance on network on-boarding and off-boarding procedures.	Government Blockchain networks shall have clear procedures and requirements, in compliance with Smart Dubai & other relevant guidelines	6
	Guidance on viable Blockchain networks operating model including different roles and responsibilities.	The policy requires Blockchain networks to develop and share operating models, which should detail roles and responsibilities of all stakeholders	7
	Guidance on consortium formation, whether to be driven by a sector leader or driven by joint-ventures.	The policy requires Blockchain networks to develop and share operating models, including voting & consensus mechanisms and network decisions	5/7
	Guidance on fair and secure consensus and transaction validation mechanisms.	The policy requires Blockchain networks to develop and share operating models, including voting & consensus mechanisms and network decisions	7

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Addressing the blockchain policy needs

The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

	Policy Needs	How it is addressed in the Policy β	Article(s)
	Guidance on funding models for Blockchain networks, including CAPEX and OPEX costs.	The policy requires Blockchain networks to develop and share funding an revenue generation models, in compliance with relevant laws, regulations and guidelines	nd s, 7
Funding and Monetization	Guidance on monetization and business models that are applicable to government entities.	The policy requires Blockchain networks to develop and share funding an revenue generation models, in compliance with relevant laws, regulations and guidelines	nd s, 7
	Guidance on cost sharing for common network services, including legal and court fees, across the Blockchain network.	The policy requires Blockchain networks to develop and share funding an revenue generation models, in compliance with relevant laws, regulations and guidelines	nd s, 7

The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

	Policy Needs	How it is addressed in the Policy	Article(s)
	Guidance on what can be covered under IP in Blockchain networks and the associated services.	The policy details that entities are encouraged to register Blockchain use- case Intellectual Property rights in accordance with applicable IP laws in the UAE	8
Intellectual	Guidance on how to handle, protect, and license IP rights.	The policy references applicable IP laws in the UAE, where entities can register their Blockchain network use-cases	8
Property	Clarity on data ownership rights when data is shared between entities and becomes part of the distributed ledger.	The policy references Dubai Data Law, Dubai Data Policies and other applicable laws in the UAE that entities must adhere to	8
	Guidance on contractual agreements and IP when forming consortiums and joint-ventures.	The policy details that entities are encouraged to register Blockchain use- case Intellectual Property rights in accordance with applicable IP laws in the UAE	8
Network Expansion	Guidance on approaching and joining GCC and international Blockchain networks.	The policy gives Smart Dubai the role of approving the formation of Blockchain networks and their members	5
	Guidance on cross-sector expansion of Blockchain networks.	The policy gives Smart Dubai the role of approving the formation of Blockchain networks and their members	5
	Guidance on how network members can reach agreement on expanding the network beyond its current boundaries.	The policy requires Blockchain networks to develop and share operating models, including voting & consensus mechanisms and network decisions	7



The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

Data Formats	Guidance on the transformation of data from existing systems to	Network Security	Guidance on maintaining secure Blockchain platforms and protocols
			Guidance on minimum security requirements including encryption levels.
	Guidance on setting and agreeing on shared data formats across the Blockchain network.		Guidance on risk management requirements and governance.
and Interoperability	Guidance on ensuring interoperability within the platform and		Guidance on breach management and requirements in case of a breach.
	across multiple networks potentially.		Guidance on maintaining proper key management & HSM.
	Guidance on enforcing data accuracy and quality from network participants.		Guidance on performing audits efficiently.
_		Audit & Compliance	Guidance on enforcing and auditing for compliance across nodes.
	Guidance on protecting private and confidential data on the ledger.		Incentivizing entities to comply to the set standards, policies, and regulations and self-correction of non-compliance.
	Guidance on classifying data with respect to privacy and		Clarity on the standards and regulations to comply with.
	confidentiality before publishing it to the ledger.		Guidance on spurring adoption.
Data Privacy & Confidentiality	Guidance on getting consent from customers before sharing their data with other entities.		Lack of proper support on the qualification of Blockchain use-cases.
		Communication	Guidance on building capacity and skilled resources within government.
	regulations.	& Adoption	Engaging the whole ecosystem.
	Guidance on protecting data privacy and confidentiality with		Guidance on setting the right expectations, success measures, and timelines.
	sidechains (data taken to another ledger).		Expanding the Dubai Blockchain Policy to federal level.

Policy Needs

Policy Needs



The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

	Policy Needs	Policy Needs	Article(s)
Data Formats and Interoperability	Guidance on the transformation of data from existing systems to Blockchain.	The policy references guidelines, architectures, and standards that can guide entities and aid in the transformation process	15
	Guidance on setting and agreeing on shared data formats across the Blockchain network.	The policy details that networks shall publish their standardized data formats across the network, in line with Dubai Data Standards and guidelines published by DDE	9
	Guidance on ensuring interoperability within the platform and across multiple networks potentially.	The policy details that networks shall publish their standardized data formats in line with Dubai Data Standards and guidelines published by DDE, ensuring interoperability	9
	Guidance on enforcing data accuracy and quality from network participants.	Smart Dubai shall review member roles & responsibilities, in the network's operating model, ensuring data formats and standards specified by the network are maintained	7/9



The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

	Policy Needs	Policy Needs	Article(s)
Data Privacy & Confidentiality	Guidance on protecting private and confidential data on the ledger.	The policy references Dubai Data Law, Dubai Data Standards, and other guidelines published by DDE or a relevant authority	10
	Guidance on classifying data with respect to privacy and confidentiality before publishing it to the ledger.	The policy references Dubai Data Law, Dubai Data Standards, and other guidelines published by DDE or a relevant authority	10
	Guidance on getting consent from customers before sharing their data with other entities.	The policy references Dubai Data Policies and details that entities shall see the consent of individuals and Private Entities	k 10
	Guidance on applicability of GDPR and similar data privacy regulations.	The policy references Dubai Data Law, Dubai Data Standards, and other guidelines published by DDE or a relevant authority	10
	Guidance on protecting data privacy and confidentiality with sidechains (data taken to another ledger).	The policy references Dubai Data Law, Dubai Data Standards, and other guidelines published by DDE or a relevant authority	10

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The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

	Policy Needs	Policy Needs	Associated Article(s)
letwork Security	Guidance on maintaining secure Blockchain platforms and protocols including security patching.	The policy references ISR & other relevant guidelines, policies, standards & regulations published or endorsed by DESC, and Smart Dubai shall approve protocols & platforms	11/ 14/ 15
	Guidance on minimum security requirements including encryption levels.	The policy references ISR & other relevant guidelines, policies, standards & regulations published or endorsed by DESC	11/ 15
	Guidance on risk management requirements and governance.	The policy references ISR & other relevant guidelines, policies, standards & regulations published or endorsed by DESC. Smart Dubai shall approve network operating models	11/ 15
	Guidance on breach management and requirements in case of a breach to a specific node.	The policy references ISR & other relevant guidelines, policies, standards & regulations published or endorsed by DESC	11/ 15
	Guidance on maintaining proper key management and Hardware Secure Modules (HSM).	The policy references ISR & other relevant guidelines, policies, standards & regulations published or endorsed by DESC. Smart Dubai shall endorse supporting technologies	11/ 14

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Addressing the blockchain policy needs

The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

	Policy Needs	Policy Needs	Article(s)
Audit & Compliance	Guidance on performing audits efficiently and leveraging systems for automated auditing.	Smart Dubai may conduct audits on networks ensuring their compliance with the policies, at their discretion, directly or in collaboration with a third party	12
	Guidance on enforcing and auditing for compliance across the participating nodes.	Network operators shall ensure the compliance of the networks and its participants, in addition to Smart Dubai's ability to conduct audits on networks directly or in collaboration with a third party	12
	Incentivizing entities to comply to the set standards, policies, and regulations and self-correction of non-compliance.	The policy details non-compliant entities shall be subject to regulatory actions, in addition to potential consequences that Smart Dubai may enforce	12
	Clarity on the standards and regulations to comply with.	The policy references the existing standards and regulations where applicable, in addition to future ones that can be issued.	ALL

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Addressing the blockchain policy needs

The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

Policy Needs

	Toney Needs		Al licie(s)
ommunication & Adoption	Guidance on spurring adoption, especially entities that are required to join a network but have no direct value in joining.	Smart Dubai shall play a central role in promoting the benefits of the technology, and networks are required to publish & maintain a communication plan to drive adoption	13
	Lack of proper support on the qualification of Blockchain use-cases and validation of POCs.	Smart Dubai has taken responsibility of approving Blockchain networks and supporting entities with their use-case development	5
	Guidance on building capacity and skilled resources within government entities.	Smart Dubai shall provide entities with guidance on their Blockchain implementations and the policy encourages entities to build internal capacity and skill-set	/ 13
	Engaging the whole ecosystem including government entities, private sector, regulators, and overseeing councils.	The policy involves different entities and stakeholders including DDE, DESC, competent entities, and sector regulators where applicable.	ALL
	Guidance on setting the right expectations, success measures, and timelines with management.	The policy details that networks are required to publish and maintain a communication plan including roadmaps, future plans, and regular updates	13
	Expanding the Dubai Blockchain Policy to federal level as many use-cases require federal entities to join.	The policy gives Smart Dubai the role of approving the formation of Blockchain networks and their members	5

Associated

Articlo(c)

Policy Needs



The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

Policy Needs

	Guidance on technology platform and protocol selection.	Shared Network Services	Having supporting shared services at a Federal level, such as Digital ID, to allow for UAE-wide networks.
	Efficient adoption of Blockchain platform in terms of time and government spending.		Guidance on usage of shared services provided by the private sector.
Technology Platform & Services	Standardization of viable Blockchain platforms and protocols while maintaining flexibility.		Guidance on available shared services for digital identity, payment and settlement, and other shared services
	Ensuring backward compatibility across platform versions as technology evolves.		Having data storage and hosting offered as a shared service for government entities, facilitating access using APIs.
	Guidance when evaluating Blockchain vendors.		Guidance on how Blockchain networks will operate with the Government Information Network and outside.
	Guidance on Blockchain design including on-chain and off-		
	chain data architecture.	Legal Support	Guidance on dispute resolution and litigation in UAE and internationally, including the courts
	Guidance on designing scalable Blockchain networks.		Guidance on creating, reviewing, and auditing Smart Contracts that are legally supported and enforced.
Architecture & Standards	Standardization and consistency across different Blockchain implementations.		Creation of a legal support transactions, including Digital Signature, Smart Contracts, and Digital Cheques.
	Guidance on the Blockchain standards to adopt and comply with, especially security standards.		Guidance on responsibilities in Blockchain networks between the different nodes and the network as a whole.
	Guidance with building blocks and patterns for faster and more efficient implementation of Blockchain platforms.		Federal coverage of the laws supporting Blockchain technology.

Policy Needs



The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

	Policy Needs	How it is addressed in the Policy	Associated Article(s)
echnology latform & Services	Guidance on technology platform and protocol selection.	Smart Dubai has taken the responsibility to endorse Blockchain platforms and protocols	14
	Efficient adoption of Blockchain platform in terms of time and government spending.	Smart Dubai has taken responsibility of approving Blockchain networks, ensuring value-creating use cases, and efficient investing in the Dubai Blockchain Platform	
	Standardization of viable Blockchain platforms and protocols while maintaining flexibility.	The policy gives Smart Dubai control over the Blockchain platforms and protocols, which it can then standardize	14
	Ensuring backward compatibility across platform versions as technology evolves.	The policy assigns Smart Dubai to endorse platforms and technologies, ensuring backwards and cross-platform compatibility	14
	Guidance when evaluating Blockchain vendors.	Smart Dubai shall endorse select platforms and technologies, guiding entities with their vendor selection if needed	14

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مجالـس دبـي للمستقبـل DUBAI FUTURE COUNCILS التماملات الرقمية Blockchain

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Addressing the blockchain policy needs

The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

	Policy Needs	How it is addressed in the Policy	Associated Article(s)
hitecture tandards	Guidance on Blockchain design including on-chain and off-chain data architecture.	The policy references ISR, Dubai Data Standards, and any other guidelines, architectures, and standards to be published by DESC, DDE, or Smart Dubai	15
	Guidance on designing scalable Blockchain networks.	Smart Dubai will be in charge of approving Blockchain networks formation in addition to referencing and working on architectures and standards to promote scalability	6/ 15
	Standardization and consistency across different Blockchain implementations.	The policy gives Smart Dubai control over the Blockchain platforms and protocols, which it can then standardize	14/ 15
	Guidance on the Blockchain standards to adopt and comply with, especially security standards.	The policy references ISR, Dubai Data Standards, and any other standards to be published by DESC, DDE, or Smart Dubai	15
	Guidance with building blocks and patterns for faster and more efficient implementation of Blockchain platforms.	Smart Dubai will offer Blockchain Platform as a Service which comes with building blocks and patterns, in addition to referencing and working on architecture & patterns	14/ 15



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Addressing the blockchain policy needs

The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

	Policy Needs	How it is addressed in the Policy	Associated Article(s)
Shared Network Services	Having supporting shared services at a Federal level, such as Digital ID, to allow for UAE-wide networks.	Smart Dubai shall approve and endorse Digital Identity and signature services, like UAE Pass, that may be used in Dubai Government Blockchain implementations	16
	Guidance on usage of shared services provided by the private sector.	The policy positions Smart Dubai as the entity to endorse shared services that may be used in Blockchain networks	16
	Guidance on available shared services for digital identity, payment and settlement, and other shared services	Smart Dubai shall approve and endorse Digital Identity and signature services, like UAE Pass, that may be used in Dubai Government Blockchain implementations	16
	Having data storage and hosting offered as a shared service for government entities, facilitating access using APIs.	While the policy does not specify data storage as a shared service, Smart Dubai shall approve and endorse services that are to be used in Government Blockchain solutions	16
	Guidance on how Blockchain networks will operate with the Government Information Network and outside.	The policy references ISR, Dubai Data Standards, and any other guidelines, architectures, and standards to be published by DESC, DDE, or Smart Dubai	15

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مجالـس دبـي للمستقبـل DUBAI FUTURE COUNCILS التعاملات الرقمية Blockchain

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Addressing the blockchain policy needs

The collated policy needs and how they have been addressed in the Dubai Blockchain Policy have been summarized and analysed below.

	Policy Needs	How it is addressed in the Policy	Associated Article(s)
Legal Support	Guidance on dispute resolution and litigation in UAE and internationally, including the courts	The policy defines the legal implications of Smart Contracts and other data transferred utilizing Blockchain technology, including dispute resolution	7/17
	Guidance on creating, reviewing, and auditing Smart Contracts that are legally supported and enforced.	The policy defines the legal implications of Smart Contracts and references any guidelines issued by Smart Dubai or other relevant stakeholders	17
	Creation of a legal support transactions, including Digital Signature, Smart Contracts, and Digital Cheques.	The policy defines the legal implications of Smart Contracts, Digital Signatures, and other services on Blockchain networks	17
	Guidance on responsibilities in Blockchain networks between the different nodes and the network as a whole.	Smart Dubai shall review operating models, including, roles & responsibilities, and Terms & Conditions, which shall be developed by the network	7
	Federal coverage of the laws supporting Blockchain technology.	The policy supports Federal networks, and while other specifications are network specific, Dubai Government entities shall comply with the policy, where applicable	З

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Thank you