# WEB 3.0

# ADVOCACY BRIEF

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# Introduction

Web 3.0 is redefining the internet sector by adopting new digital technologies, concepts and processes.

For policymakers worldwide, Web 3.0 is a top priority in agenda setting, as it could spur substantial productivity gains, redefine the internet, FinTech, and communication, and potentially impact the economy, information storage and content creation.

The Securities & Exchange Commission of Pakistan is implementing ambitious sandboxes to address several policy challenges hindering the mass adoption of technologies in this novel paradigm.

Several ideal spaces exist for policy experimentation, including the reg-tech sector and international collaborations for interregional policy learning.

This Advocacy Brief sheds light on the scope of the Web 3.0 space in Pakistan. It also offers actionable policy recommendations on the subject.

The internet has been going through successive revolutions (see Figure 1). The driver for these revolutions is the increasing rate at which humans partner directly with technology.

The Three Stages of the World Wide Web are as follows: (Terra, 2022)
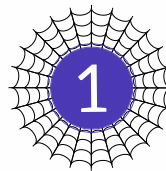


**WEB 1.0**
The read-only web, which merely broadcasted information from static websites.

**WEB 2.0**
The advent of user-generated content, and social media like Twitter, Facebook and Youtube.

**WEB 3.0**
The upcoming generation of the web, decentralised, relying heavily on blockchain and AI.

The first generation of the world wide web, or the read-only web, only gave out information.

The second generation of the internet was born with the advent of user-generated content.

Web 3.0 is the upcoming generation of the internet, which is still in the evolution process. It uses decentralisation, blockchain-based tech, machine learning and artificial intelligence.

# WHAT DO WE KNOW?

## ENABLING FEATURES AND TECHNOLOGIES OF WEB 3.0

**Decentralisation:** In Web 2.0, computers use HTTP in the form of unique web addresses to find information stored at a fixed location, generally on a single server. With Web 3.0, data could be stored in multiple locations simultaneously. This translates into no central controlling node and no single point of failure. In addition, the system would break down the massive databases currently held by internet giants like Meta and Google, giving users greater control regarding data ownership. (Weston, 2022)

**Connectivity and Ubiquity:** With Web 3.0, information and content are more connected and ubiquitous, accessed by multiple applications.

**Bottom-up Design:** Instead of code being written and controlled by a small group of experts, it was developed in full view of everyone, encouraging maximum participation and experimentation.

**No Intermediaries:** Based on open-source software, the network allows participants to interact directly without going through a trusted intermediary. Also, anyone can participate without authorisation from a governing body. Thus, Web 3.0 applications will run on blockchains, decentralised peer-to-peer networks, or a combination thereof.

**Artificial Intelligence (AI) and Machine Learning:** Technologies based upon Semantic Web concepts, natural language processing, driven by data and algorithms, of increasing accuracy and capabilities will enable computers to produce faster and more relevant results in a host of areas as opposed to merely targeted advertising that forms the bulk of the industry today.

# WHAT DO WE KNOW?

## THE WEB 3.0 LANDSCAPE IN PAKISTAN

An article from Paklaunch and the Atlantic Council's South Asia Center entitled 'Realizing the Promise & Potential of Web 3 for Pakistan' states that the emerging ecosystem of Web 3.0 can potentially generate an investment of over $100 billion over the next two decades. The study explains Pakistan's premise to potentially become a significant player in the Web 3.0 space, anchored in three pillars. (Samad, 2022)

To begin with, Pakistan is one of the youngest nations worldwide. A large digitally connected population has also made Pakistan one of the world's largest freelancing markets. It has also boosted IT exports and attracted global investment.

Secondly, the trend of young local graduates opting for the corporate sector has shifted in favour of entrepreneurship in the past few years. A significant proportion of Pakistan's emerging start-up ecosystem is in the technology niche, supported by public policy interventions.

Thirdly, Pakistan was one of the first countries in the global south to develop a digital identity management system supported by AI through NADRA (National Database and Registration Authority). NADRA has supported several developing countries worldwide in developing similar systems. Raast, by the State Bank of Pakistan, is an interoperable payments system which provides citizens with low-cost payment services by leveraging digital identity. This allows policymakers to link identity with payments, thereby creating an effective authentication, traceability, and transparency system. This system could potentially evolve to support Web 3.0 architecture, including crypto asset trading and investment.

# WHAT DO WE KNOW?

## THE CRYPTOCURRENCY LANDSCAPE IN PAKISTAN

Pakistan is the sixth most populous country with the third-highest global crypto adoption (Chainalysis 2021 Global Crypto Index).

Bitcoin and cryptocurrency mining has been practised since April 2018, until the government banned trading and mining virtual currencies. The industry continues to grow underground even after many mining farms were shut down after this ban was implemented.

The provincial government of Khyber Pakhtunkhwa announced plans for cryptocurrency mining farms earlier this year. The Government of Punjab is also venturing into the Web 3.0 space with an initiative to bring forth a comprehensive policy on the subject.

A committee has been set up at the federal level to look into regulating cryptocurrencies.

The Securities & Exchange Commission of Pakistan (SECP) currently has sandboxes in place, allowing Web 3.0-based startups to operate and register, including cryptocurrencies and NFTs.

Binance Pakistan, one of the largest cryptocurrency exchanges globally, has regularly held community meet-ups in various urban centres in the country.

According to the Federation of Pakistan Chambers of Commerce and Industry, Pakistanis possessed more than $20 billion in cryptocurrencies in 2020-21. To put this figure into context, it is more than the country's total foreign exchange reserve.

# WHAT DO WE KNOW?

## THE NFT LANDSCAPE IN PAKISTAN

NFTs became popular within Pakistan with Pakistan's viral 'Friendship ended with Mudasir' meme sold for 20 Ethereum tokens valued at $52,530 (over Rs. 11 million) at an NFT auction. (Dawn.com, 2022)

Recently, "The Merge", a local NFT project, raised $91.8 million on the Nifty Gateway, a leading global NFT marketplace. The project is owned by "Pak", an anonymous Pakistani artist who Elon Musk praised on Twitter for his work.

Ayesha Mubarik Ali is another Pakistani NFT artist who rose to fame with her NFT art collection, Oshii Brownie.

A British Pakistani teenager sold his NFT collection for a staggering £290,000. His work was highly appreciated by the NFT community worldwide and led to considerable positive attention for Pakistan globally and for the NFT space in Pakistan.

High-end streetwear brand Rastah has become Pakistan's first fashion outlet to venture into the NFT space with the release of its digital outfit. Rastah's entry into the NFT space was marked by an auction of their digital piece from the upcoming "Love & Fear" collection on the Foundation Rastah site on November 5.

The "Wow Grape" meme was minted as an NFT and auctioned on September 30, 2022, to help raise funds for victims of the then-ongoing floods. (Dawn.com, 2022)

# WHAT DO WE KNOW?

WEB 3.0-BASED COMPANIES LOOKING TO EXPAND IN PAKISTAN

- Rain Financials

A cryptocurrency trading company

- WP Capital Group

A key investor in InterApp, an application which enables creators to turn designs into NFTs with zero coding using Augmented reality

- EROS International

With a portfolio of $1.2 billion, they are looking to invest in and develop over 100 Web 3.0 and blockchain businesses

- Goldfingr

A Dubai-based company which hosts 14 billionaires and has $400 billion in combined network capital

- Shorooq Partners

A $150 million fund to support early-stage tech start-ups operating in the Middle East, North Africa, and Pakistan

- Insitor Partners Pte. Ltd

A Singapore-based company, offered CreditFix, an AI-based credit financing company, a large chunk of its funding with convertible loan financing
.

- Recharge capital, Kingsway Capita, Raptor Group

Invested $10.7 million in SadaPay, a service which provides free-of-cost financial services backed by AI-based fraud detection tools

## WHAT DO WE KNOW?

WEB 3.0-BASED COMPANIES LOOKING TO EXPAND IN PAKISTAN

- Al Hilal Group, e-navik

Invested $240,000 in DEALSMASH, a data analytics company that uses AI to evaluate shopping behaviour to give personalised and directed offers

- Polychain capital, Alameda Research, Kronos Research, LedgerPrime

Invested $6.4 million in SEED LABS, an AI-based decentralised digital asset trading platform.

- MEXC Global Exchange, YBB Foundation, Lotus Capital, Danish Chaudhry, HG Ventures, and Rob Hanneman.

Invested $1 million in Anmol Network, a no-code builder offering tools for Defi, NFTs, GameFi, and the metaverse

- Amaana Capital (US based), Cordoba Ventures (Middle East & Pakistan focused), Seraph Group, TAJDEE

Invested $1.8 million in MedIQ to upgrade their AI and ML tools to provide holistic virtual care to patients

- Startupbootcamp, Learn Launch

Invested $500,000 in OrbitED, an AR-based learning tool for STEM education

# OPPORTUNITIES

EXPLORING WEB 3.0 FURTHER

Opportunities:

Economic potential:

- Creation of a coin pegged against the Pak Rupee - and leveraging it to pull the economy out of tailspin
- Revolutionising cottage industries via NFTs

Soft-power projection opportunity:

- Cultural representation in the NFT space
- Archiving and documentation

Potential social impact:

- P2E games for the local market
- Bridging gender pay gaps - reduced hierarchies and direct payments translate into fair monetary compensation - everyone gets paid according to the work and time they invest
- Leading the creation of educational space

Good Governance:

- Exploring the potential of Artificial Intelligence and Machine Learning for various purposes to manage the country more effectively and efficiently

# Economic Potential
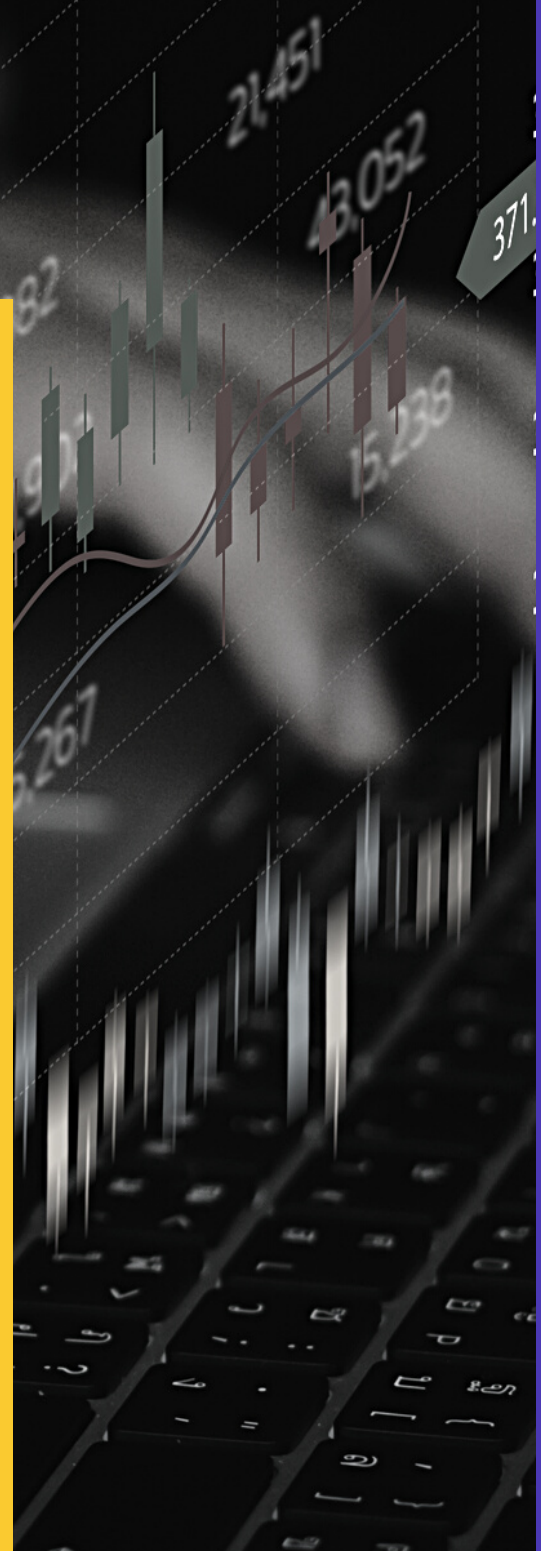
# An overview of numbers

**Several numbers which indicate that Web 3.0 is the future. (Practicalecommerce.com, 2022), (Thormundsson, 2022), (Livemint, 2022).**

- Geo-economics is crucial for states to steer through to a place in the World Order today.

| YEAR | FIELD | FUNDING |
|------|-------|---------|
| 2022 (Jan-Jun) | NFT Startups | US$2.9 billion |
| 2021 | NFT Startups | US$4.82 billion |
| 2020 | AI Startups | US$ 36 billion |
| 2021 | AI Startups | US$ 38 billion |
| 2021 | Profits from global cryptocurrency Investment | $162.7 billion |

# Soft Power Projection Opportunity
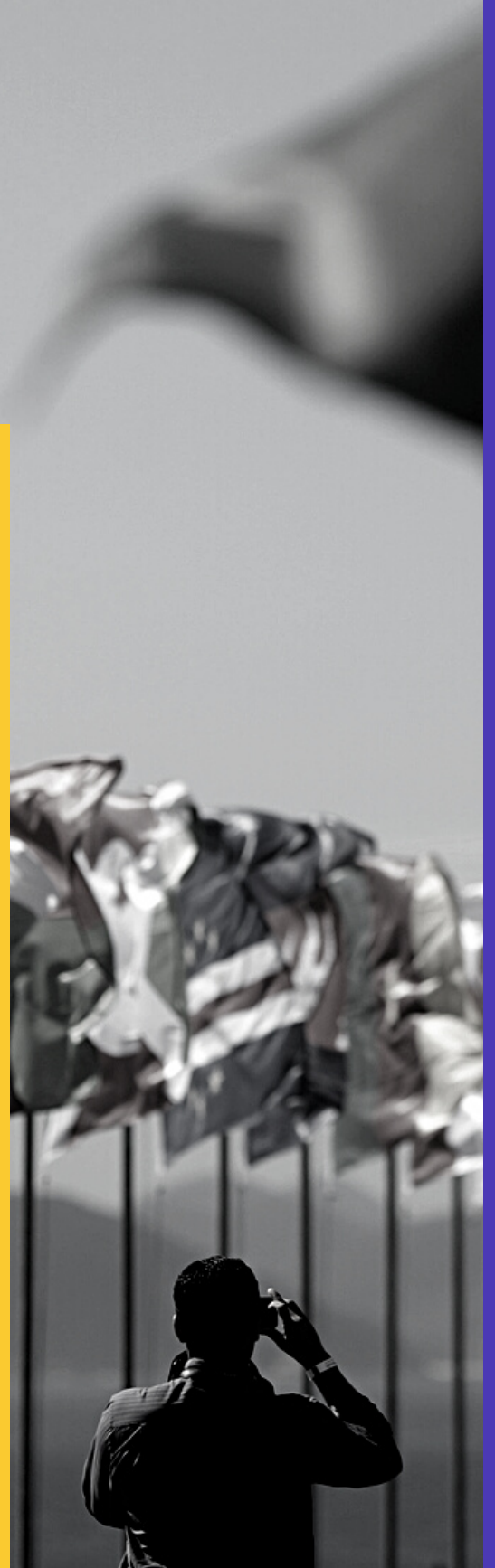
Unlike traditional media, and algorithms on social media, which are easy to manipulate, there is no "gatekeeper hegemony" in Web 3.0. This essentially means that information will be democratised, which is key to breaking the ideological shackles of post-colonialism.

The Web 3.0 system is disruptive due to the technological and financial inclusion the system inherently allows - the system's very nature can be leveraged as a weapon against neocolonial practices.

Web 3.0 allows everyone the privilege of self-representation - the woes of misrepresentation may potentially be a thing of the past.

With increasing globalisation, identity politics is becoming increasingly relevant. Thus, exploring new avenues and technologies to consolidate identities is now more critical than ever. Whilst the potential challenge of an unregulated space remains, it is also an opportunity for Pakistan. A radical shift in approach is possible - with state patronage, we can bring ethnic identities under the umbrella of nationalism rather than pitching the two against one another - which may potentially be a solution to several concerns we face as a country due to rising ethnonationalism.

As a country with many diverse ethnic identities, Pakistan must look for ways to be inclusive, bringing all identities under the umbrella of an over-arching "Pakistani" identity. In a post-modernist world, perceptions eventually morph into the truth.

Pakistan has struggled in the past to proactively build narratives and effectively reign in enemy narratives with counter-narratives when fighting information warfare. Embracing new technology to propagate our identity and narratives is essential to our survival and future as a nation.

It also allows us to preserve dying crafts and traditional knowledge, e.g. traditional medicinal herb recipes, oral languages, local mythology, culinary heritage, and local music in unique ways.

A space without borders, ungoverned by the rules of geopolitics and geo-security, with unlimited possibilities for creativity, also opens up a new arena for diplomacy with countries with which Pakistan has historical or cultural ties but has been unable to engage efficiently in economic terms traditionally. This includes several countries in Central Asia and Middle Eastern countries like Oman and Iraq, Nepal, and Sri Lanka. Also, with traditional rivals or countries where bilateral ties are sour, like India, Iran and Afghanistan.

Africa has recently taken the lead in organising pan-African festivals, promoting local artists. As a result, several top African artists focus on documenting indigenous cultures.

Besides culturally and historically inspired art taking over the artistic landscape of Web 3.0 in the form of NFTs, the infant industry is picking on combining itself with traditional industries and real-life utility in remarkable ways.

LaCollection is an NFT project that allows people to buy, sell, and auction NFTs based on original artworks from renowned art institutions worldwide.

Lightning Works is an NFT project that combined the publishing industry with the Web 3.0 space by introducing interactive comics and distribution rights for NFT holders.

Goddesses of Sun, a Pakistani NFT Project, has joined hands with Women in Tech Pakistan to help bridge the gender gap with technology training sessions for students and the provision of need-based scholarships for their students. They have also announced an awareness portal and an incubation program for new Web 3.0 startups.

Our Spring Was Endless was a poetry and illustration-based project. The entirety of the proceeds were donated to a charity working in Myanmar to support women who had suffered oppression at the hands of the regime in Myanmar.

As of now, the photography scene in Pakistan is limited to fashion, wedding and landscape photography.

An effort in the NFT space facilitated by the government, much like the recent campaign of the Georgian government to promote local culture, could potentially do the following:

- Prove to be an opportunity to regain ground Pakistan has lost in building social media narratives.
- Open avenues for cultural cooperation
- Fill the information gap around Pakistan.
- Revolutionise ethnographic documentation
- Open up space for cultural projection.
- Create more opportunities for relevant professionals such as artists and those affiliated with media and IT.
- Generate revenue for indigenous artists, potentially improving the standard of living for many.
- Raise funds to preserve local art forms which are under threat of extinction.
- As more people and more methods of earning begin to fall into the tax net, it will naturally increase cash flow in the economy and more tax revenues.
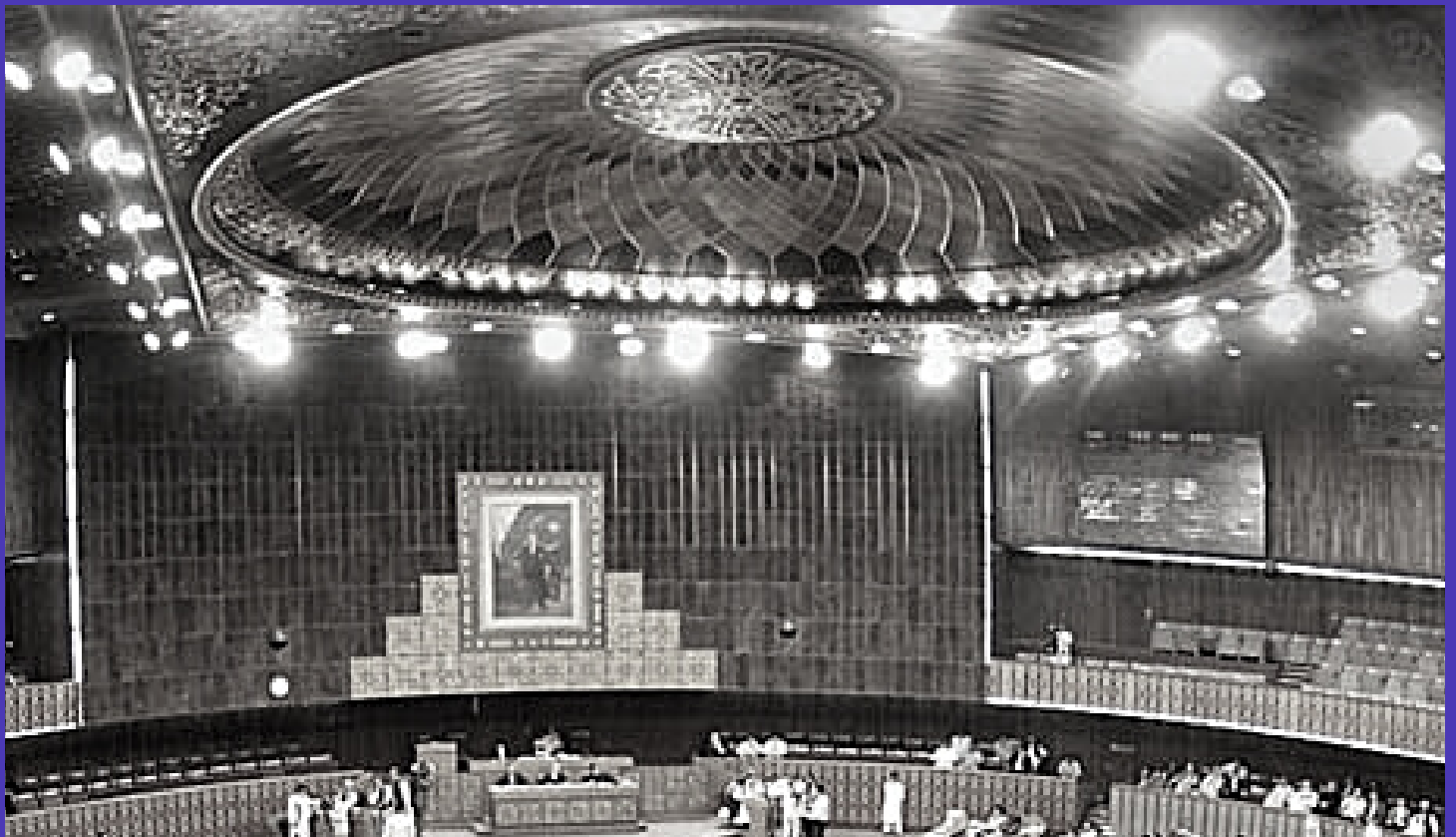
WEB 3.0 & ITS COMPONENTS

# Aiding Good Governance

# Incorporating Artificial Intelligence and Machine Learning

## 1

### Use-cases

Research into use-cases and adopted for:

- National data holding;
- Healthcare and hospital management;
- Public service;
- Road planning, traffic congestion;
- Manufacturing;
- Infrastructure management;
- Social media;
- Crime control;

## 2

### Investment

There are 68 AI-based startups in Pakistan. Tax rebates and other incentives must be offered to existing businesses for upgrading to include AI, machine learning and big data in their operations. New startups must be encouraged. Hand-holding of startups by PTA, SBP, and SECP is crucial to try to ensure their sustainability.

## 3

### Educational Engagement

Educational engagement in universities must be fostered, research incentivised, and ideas incubated to attract further entrepreneurial prospects for Pakistan and its economy.

## 4

### International Cooperation

Focused on education and vocational training, international cooperations with market leaders such as Sweden, Finland and Japan may be forged to position Pakistan as a country which welcomes innovation in the technology landscape worldwide.

# CHALLENGES

EXPLORING WEB 3.0 FURTHER

Answering the question "Who will regulate?" - Web 3.0 and its components fall into the ambit of several regulatory authorities and ministries. This includes defining the scope of Web 3.0 and its components.

Systematic capacity-building for a Web 3.0 ecosystem can follow the following course:

Web 3.0 businesses should be allowed to grow to a certain level before regulations are introduced - low barriers to entry for an industry in its infancy are essential.

Addressing reservations about anonymity and rapidly evolving technology whilst keeping in mind that growth is more important than control in economic terms.

Mitigating the threats it may pose, including:
- Skill development programs to avoid lower employment due to automation
- Frauds and scams
- Unauthorised access to data
- Disruption of the banking sector - Web 3.0 is the future for financial inclusion, which is impossible through the conventional banking system.

# WHAT WE CAN DO

**CHARTING PAKISTAN'S WAY FORWARD**
Web 3.0, Pakistan, and the future - what are the steps we need to take?

## PROBLEMS

- Current financial inclusion rates expose investors to high risks

- Lack of an existing digital framework and also of a sustainable framework regarding Web 3.0

- Regulatory uncertainty

- Innovation-unfriendly policies

- Noise in the market regarding regulation



- Adopt a solution-oriented approach to innovation
- Proactivity is needed; Pakistan cannot wait until things go wrong.
- Create a sustainable framework - look at models like those of the KSA, Bahrain, the UAE, and other countries with similar economies, or facing FATF regulations
- Learn, adapt, execute- one step at a time

**01**

## CREATING A CENTRAL REGULATORY AUTHORITY

Various components of Web 3.0 fall under the ambit of several authorities and ministries. A central authority must be made with fair representation from all relevant ministries and regulatory bodies. Alternatively, the PMO itself can lead the Web 3.0 under a designated wing for swift decision-making. Slow decision-making is the norm in current regulatory bodies, most of which operate in silos - and it is not an option in a space evolving as rapidly as Web 3.0.

## INCENTIVISE RESEARCH

Rather than starting from scratch, the government must incentivise research into Web 3.0 Space in universities and existing Web 3.0 startups to save time and resources.

**02**

**03**

## DEFINING WEB 3.0 AND ITS COMPONENTS

Clear definitions are extremely important for laws to be put in place. A team of experts needs to be set up to see to the matter.

## INSPIRATION, DEVISATION, IMPLEMENTATION

Pakistan can not implement policies other countries have put in place for several reasons - they will need to be adapted to serve our needs. The country also has a very small Web 3.0 community. International cooperation for policymaking in this sector is important.

**04**

## 05

### WEB 3.0 FOR TOURISM

Collaborations, NFTs, and investment for:
- Focus on sustainable tourism using the NFT landscape
- Opportunity for local artists and photographers
- Blockchain-based databases for specific regions/cultures

## 06

### WEB 3.0 FOR DIPLOMACY

Public-private partnerships with various countries to promote shared heritage, arts, cultures and languages.

## 07

### WEB 3.0 FOR ART

Collaborations, NFTs, and investment for:
- Local art forms
- Photography
- Calligraphy
- Folk Music

## 08

### WEB 3.0 FOR HERITAGE CONSERVATION

- Archiving
- Audiovisual ethnography

## 09

### WEB 3.0 RELATED EDUCATION

Collaborations with Binance, Coinbase etc. for:
- Educating the public
- Informing the regulatory sphere

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