

# GLOBAL OVERVIEW OF EXPERIENCES IN FINTECH DEVELOPMENT AND ADMINISTRATION

Interim report on stakeholder  
perspectives regarding  
fintech and blockchain  
opportunities and risks in Aruba

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# Global overview of experiences in fintech development and administration

Interim report on stakeholder perspectives regarding  
fintech and blockchain opportunities and risks in Aruba

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This document was prepared by Dale Alexander, Chief, and Kwesi Prescod, consultant, of the Caribbean Knowledge Management Centre of the Economic Commission for Latin America and the Caribbean (ECLAC) subregional headquarters for the Caribbean, within the activities of the joint project of ECLAC and the Ministry of Economic Affairs, Communications and Sustainable Development of Aruba.

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United Nations publication  
LC/TS.2025/43  
LC/CAR/TS.2025/5  
Distribution: L  
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Printed at United Nations, Santiago  
S.2500288[E]

This publication should be cited as: Alexander, D. and Prescod, K. (2025). Global overview of experiences in fintech development and administration: interim report on stakeholder perspectives regarding fintech and blockchain opportunities and risks in Aruba. *Project Documents* (LC/TS.2025/43-LC/CAR/TS.2025/5), Economic Commission for Latin America and the Caribbean.

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## Glossary

5G	Fifth Generation Mobile Technology
ABA	Aruba Bankers' Association
AFTA	Aruba Fair Trade Authority
AI	Artificial Intelligence
AIA	The Aruba Insurance Association
AML/ CFT	Anti-Money Laundering/ Countering Financing of Terrorism
ATA	Aruba Tourism Authority
ATIA	Aruba Trade and Industry Association
ATM	Automatic Telling Machine
BYOB	Be Your Own Business
CARICOM	Caribbean Community
CBA	Central Bank of Aruba
CERT	Computer Emergency Response Team
CCOE	Cybersecurity Center of Excellence
CCTV	Closed Circuit Television
CST	Cyber Security Taskforce
DEACI	Department of Economic Affairs, Trade and Industry
DLT	Distributed Ledger Technology

DTZ	Department of Telecommunications
DWJZ	Department of Legislation and Legal Affairs
ECLAC	Economic Commission of Latin America and the Caribbean
EGDPR	Enhanced General Data Privacy Rules
EMI	Electronic Money Institution
ETSI	European Telecommunications Standards Institute
EU	European Union
FATCA	Foreign Account Tax Compliance Act
FATF	Financial Action Task Force
FCC	Federal Communications Commission
Fintech	Financial Technologies
ICT	Information and Communication Technology
KYC	Know Your Customer
KvK	The Chamber of Commerce and Industry Aruba
LAC	Latin America and the Caribbean
ML	Machine Learning
NCSR	National Cybersecurity Council
OECD	Organization for Economic Co-operation and Development
PESTL	Political, Economic, Social, Technological and Legal
SBA	Small Business Administration
SDG	Sustainable Development Goals
SOC	Security Operations Centre
SME	Small and Medium Enterprises
SSA	Security Services of Aruba
STEM	Science, Technology, Engineering and Mathematics.
UN	United Nations

## Introduction

In continuing the assessment of Aruba's potential as it relates to establishing a strategic framework to leverage fintech, DLT and AI, it is necessary to appreciate the current business environment, both strengths and weaknesses, as they are currently experienced by stakeholders.

The team undertook a series of interviews with a variety of stakeholders in Aruba. These stakeholders varied from government agencies and regulators, through private sector participants or representative groups, to individuals with significant experience in ICT deployment within the Dutch Caribbean, generally and Aruba specifically. These interviews sought to extract the sentiment of these stakeholders, first within the framework of a PESTEL analysis, then in the context of the analytical models identified in the best practice review. In this regard, the interviews highlighted the varied, and sometimes conflicting perspectives of investors, operators and specialists into the strengths and weaknesses of a wide variety of environmental inputs in the Aruban context.

This document summarises those findings, ultimately compiling the outcomes of these discussions into major thematic elements which will be further evaluated in making the recommendations for the strategic framework.



## I. Overview of methodology and approach

The Government of Aruba is seeking to assess its options with regard to developing aspects of the Information and Communication Technology (ICT) sector, specifically in relation to the development of Financial Technologies (Fintech), Distributed Ledger Technologies (DLT) and Artificial Intelligence (AI). The stated intention is to seek to diversify the country's economy from its dependence on the tourism sector. In that regard, it has engaged the UN ECLAC to undertake a study accordingly.

UN ECLAC completed an on-site mission to Aruba in early February 2025 to meet stakeholders from the public and private sectors, civil society and academia. These consultations were undertaken with a view to gaining the perspectives of these interest groups on:

- The particular subject areas of fintech, DLT and AI in the Aruban context;
- Assessing relevant developments in the domestic space; and
- Improving the understating of the local enabling environment.

The consultations each involved an open, but structured conversation. This primary data was used as qualitative inputs to contextualise the desktop analysis conducted in parallel. These conversations were based on points of interests which were shared with the stakeholders prior. Each session lasted a little over one hour in length.

These points of interests, and thus interviews, sought to analyse the domestic context in accordance with the PESTL analytical framework.<sup>1</sup> This assessment will support the development of an appreciation of:

- The perceived internal strengths and weaknesses of both the enabling environment and the economic sector it has facilitated;
- The perceived opportunities which can be harnessed, as through the lens of the private sector and civil society; and
- The responses of the regulatory bodies on the state on these opportunities and the criticisms of the enabling environment.

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<sup>1</sup> Political, economic, social, technological and legal contexts.

## A. Summary of stakeholders engaged

Over the course of the five-day mission, there were nineteen engagements with stakeholders representing a wide cross section of interests. The meetings were all hosted by, and held at the offices of, the Ministry of Economic Affairs, Commerce and Industry. Among the interest groups represented were:

- (1) Sector regulators, including:
  - The Central Bank of Aruba (CBA),
  - The Aruba Fair Trade Authority (AFTA), and
  - The Department of Telecommunications, (DTZ).
- (2) Telecommunications operators:
  - Setar N.V., the State-owned fully integrated operator who provides fixed, mobile, broadband and international communications services; and
  - Digicel, a privately owned operator who provides mobile services.
- (3) Industry associations, including:
  - The Aruba Bankers' Association (ABA);
  - The Chamber of Commerce and Industry Aruba (KvK);
  - The Aruba Trade and Industry Association (ATIA); and
  - The Aruba Insurance Association (AIA).
- (4) Software development and cybersecurity firms, including:
  - GammaIT; and
  - The Cybersecurity Center of Excellence (CCOE).
- (5) Financial sector service providers such as:
  - Qredits; and
  - FinanceQuest.
- (6) Professional practitioners, such as:
  - Mr. Ashton Lopez, a software engineer with experience in AI currently based in the Netherlands.
  - Mr. Aaron Antersijn, a security professional, with significant experience in CCTV monitoring for clients in the USA. Mr. Antersijn is also the Regional Vice President for ASIS, an internationally recognised information security/ cybersecurity community.
  - Mr. Andrew Rasmijn, a serial entrepreneur, with particular interest in blockchain. In the past, Mr. Rasmijn was the person who introduced a bitcoin ATM into the Aruban market circa 2017.
  - Mr. Rothmar Coenraad, an ICT practitioner and consultant, with over two decades of experience in leading business transformation through ICT in the wider Dutch Caribbean territories.

(7) Academia, including:

- Ms. Luciana Lacle (lecturer) and Ms. Josie Vrolijk (2nd year student), from the University of Aruba's STEM programme.
- Mr. Francis Leclé, PhD candidate in the University of Aruba's STEM programme.

## B. General findings

There was much interest among those interviewed for the development of greater innovation in the ICT space generally, and in the financial sector in particular. These interests are all driven from different motivations.

There was significant activity emerging from the private sector and civil society geared to treating with the question of capacity-building, from the perspectives of both general entrepreneurship and sector specific skills training in fintechs. However, as there are limited job opportunities through which the persons trained in the latter can gain economic expression or experience, there is the concern that this activity merely fuels the "brain drain" of Aruba's best to the Netherlands and Europe.

A common opportunity identified was that of Aruba being a base of export-oriented service delivery within the ICT/ Fintech space. This opportunity was identified given the strong infrastructure, deep levels of financial inclusion and relatively well-trained human resource capacity as factor inputs. However, constraints with respect to forex administration and absence of a capital market were seen as major mitigating factors.

A major emergent concern was the issue of a regulatory and institutional environment which is not geared towards innovation and competition. This concern may have a negative impact on the appetite for inwards investment in the Aruban ICT sector in general, with concomitant impact on the specific areas of fintech, DLTs and AI. The concern was raised about both financial and telecommunications sectors. In both instances, entrenched, larger participants expressed favor with the current environment. However, smaller participants and new entrants expressed concern about the regulation of these sectors. Notably, the stakeholders' positions on the use of DLT's – and cryptocurrency in particular – mirrored the perspectives on the current regulatory environment. While the establishment of AFTA is generally welcomed, there is also recognition of a need for other institutional actors to support development in these sectors.



## II. Findings by stakeholders

### A. Administrative policy and vision

#### 1. Policy context

Currently the economy of Aruba stands on the pillar of a robust tourism industry. The second major sector is the banking and financial services sector. There is a view that diversification of the economy is essential to improve resiliency and reduce the impact of shocks to the economy.

From the perspective of the administration, that is, forecasting in a top-down view, the ICT sector has long been viewed as potential area of growth. This is partially due to the view that there is less need for resource-heavy factor inputs to facilitate engagement and success within the sector.

In that regard, fintech is seen as a means to strengthen and smoothen existing economic practices, particularly in the financial sector. It is also seen as a means to engage the younger generation of Arubans seeking a wider breadth of avenues for careers than currently exist. There seems to be already tentative undertakings by the larger firms in this regard. The policy question that arises is whether there is potential to encourage more activity in this space, particularly towards encouraging entrepreneurship.

Similarly, blockchain and specifically cryptocurrency investment is seen as another potential area of growth. However, there are various subsidiary questions which arise including: what aspects of cryptocurrency can be engaged in. Why should investment in cryptocurrency be anything but the decision of the particular investor and citizen. Are there any other applications of blockchain technology that can be leveraged in the Aruban context to improve long-standing pain points.

Finally, Artificial Intelligence, and specifically Machine Learning, has emerged internationally as a source of major disruption outside the ICT space. In this regard, there is interest in appreciating the opportunities that can arise through encouraging more economic activity in this space.

## B. Regulators

### Common Themes

- (1) Economic context
  - AML/CFT and KYC compliance are essential to maintain correspondent banking relationships.
- (2) Regulatory/Operational context
  - Limited regulatory awareness of ICT sector issues – is there an institutional gap?
  - CBA is the regulatory authority that looms largest over the sector.
  - DTZ has limited scope of oversight of telecommunications sector regulation, which has resulted in an environment that is hostile to innovation
  - AFTA can provide a big impact to the environment, but its capacity to do so will be limited by its size, and the scope of challenges that need to be addressed.
- (3) Public Access and Protection
  - Use of cryptocurrencies frowned upon due to heightened AML/CFT risk.
  - Trade in cryptocurrencies fall under the rubric of general foreign exchange regulations

### 1. Banking system

The Banking System is regulated by the Central Bank of Aruba (CBA). The CBA is a regulator that is autonomous from the Government of Aruba. The CBA's Supervisory Board's members are appointed by the Governor, however the selection of the Executive Director and President by the Supervisory Board is subject to the approval of the Prime Minister. The CBA oversees banking, insurance and Pension Funds in Aruba. The CBA collaborates in its supervisory function with the Dutch Caribbean Central Banks and the Dutch Central Bank.

The size of the sector is estimated at approximately US\$10 billion. There are four (4) banks, two (2) credit unions, one investment bank, two micro lenders and fourteen (14) insurance companies which are supervised by the CBA. Noting the high-level of consumer penetration in the banking sector, the CBA is of the opinion that fintech development is advanced in the banking sector of Aruba. Citing:

- The elimination of the use of cheques in the payment system.
- The reduction in the number of physical branches due to the ubiquity of Internet-based banking.

CBA is of the position that the sector is "ahead of the curve" in the sphere of electronic banking. Despite this, the CBA questions the feasibility of any banks going fully digital.

The CBA also registers Casinos, but only with respect to AML/CFT oversight. All other aspects of regulatory oversight will be under the jurisdiction of the Gaming Authority, which has been established in law, but not yet operationalised.

In 2017, a Survey was completed to evaluate of state of innovation in fintech, e-Government and e-Commerce, both from the context of technology applicability and skillsets. The study identified significant barriers to entry for micro-enterprises into the fintech and e-commerce spaces including:

- Lack of access to capital.
- Fragmented, non-streamlined processes for business registration.
- Paucity of workforce skilled in these spheres.

In 2014, the Survey was repeated, with the results showing that many of these challenges are still relevant, underscoring the need for more structural improvements in the sector to alleviate these issues. Notwithstanding some market-led developments in micro-financing and closing the skill gap, much of the identified pain points persist, specifically the constraint on skilled human capital.

With regard to Distributed Ledger Technologies (DLTs) the CBA is cautious, focussing on practical use cases that do not increase systemic risk in the sector. In that regard:

- Supervisory Tech is seen as a potential. Here the CBA is seeking to establish a system where regulated entities will report to the CBA digitally. This will allow the ready preparation of dashboards of operators against regulatory key performance indicators. This will enhance efforts already underway to leverage AI in AML/CFT identification through transaction trend analysis.
- The CBA has a negative perspective on the widespread introduction of cryptocurrencies, given the concerns about the impact on correspondent banking relationships. These relationships are critical for the operation of the banks already resident in Aruba and discourage inward investment into the sector. Any systemic shift which jeopardises those relationships is to be avoided.

## 2. Payment system

The Payment System is also directly managed by the CBA. The inter-bank settlement platform is facilitated through I-pago. I-pago is administered by the CBA. There is no other legally recognised payment system in Aruba. Notwithstanding this, there is some development in the payment area within the sector. Indeed, this is the focus of many inquiries for new fintech entrants.

Examples of such include:

- “Pay.aw”: an Electronic Money Institution (EMI) operated by Setar N.V. This platform allows for the trade in electronic tokens within its closed network of users and vendors.
  - The tokens can be cashed out for fiat currency.
  - The platform is accessed via a mobile app facilitates customer/merchant interaction.
  - Customer/ merchant interaction does not require point-of-presence (PoP) to facilitate transactions.
- Sentoo: a provider that operates as a Payment Service Provider facilitating direct debits from consumer accounts to merchant accounts via online payment. This provider is not covered under existing EMI or Money Transfer Company regulations.
  - Customer may select Sentoo as a payment option when interfacing with merchant’s online presence.
  - Once selected, Sentoo facilitates interaction between customer and merchant banks, initiating an authorised transfer of funds.
- PayPal and Apple Pay: international operators that fall under the category of EMIs under the existing regulatory framework. These operators sought exemption from CBA registration as a prerequisite for market entry. This was not facilitated as it would have allowed the operators to avoid Aruban AML/CFT compliance regimes.

The fundamental challenge facing the CBA in this sphere is the underdevelopment of the Payment System Regulatory Framework. With the entrance of new parties, it has become essential that a predictable framework is established which governs:

- Market entry by parties, including ex ante requirements.
- Operational obligations and protections to the consumer and the retailer.

- Security requirements to treat with the question of cybercrimes.
- Necessary risk mitigation protocols in light of prevailing AML/CFT obligations, given the nature of the businesses.

CBA suggests the need for Payment Service Provider legislation, which could be framed similarly to the Dutch legal framework in this regard. CBA has proposed legislative proposals in this area but awaits feedback from the Government about enacting such proposals into law.

### **3. Securities and security exchanges**

There is no stock market in Aruba. There was an attempt to establish one, however, it failed. CBA suggests that this failure was due to AML/CFT concerns.

Further, mindful of Financial Action Task Force (FATF) requirements, the sale of stocks over the counter, which would reduce identifiability of the beneficial owner, is prohibited.

### **4. Telecommunications and broadband**

The telecommunications sector is regulated by the Government department assigned to oversee Telecommunications sector, DTZ. Currently, due to staffing constraints the operational focus of DTZ is on billing for, and collection of, licensing fees. With regard to policy development, such activities are outsourced to consultants.

DTZ acknowledges a need to update the current regulatory framework governing the telecommunications sector. It was noted however, that while outdated, it has not stopped technological developments in the market, with 4G and 5G mobile technologies deployed by operators. The need for legislative updates become apparent on consideration of the administrative framework within which DTZ operates and its scope of regulatory concerns.

DTZ is responsible for the issuance of spectrum to operators. In this regard, DTZ is evidently very technology-focused as a regulator - with a focus on ETSI and FCC technical compliance by operators in the deployment of new technologies, but little jurisdiction for other economic aspects of telecommunications sector administration, which may impact decisions relating to technology.

There are two telecommunications operators in Aruba: the incumbent, state-owned Setar and, the competitive entrant Digicel.

- (i) Setar is a fully integrated telecommunications operator, providing fixed-line, mobile, fixed broadband, and international connectivity. Setar has reportedly deployed 5G services in its network to provide advanced connectivity speeds to customers. Setar has further leveraged its position to acquire assets in other spheres of ICT service provision, including broadcasting and e-wallets (Pay.aw).
- (ii) Digicel only operates in the mobile market segment. Digicel is authorised to provide fixed-broadband service but has declined to roll out and launch a product to market.

These operators have licences for ten (10) years. Every five (5) years, DTZ undertakes an audit of licence conditions. Unfortunately, DTZ does not have accurate statistics on telecommunications sector development because of lack of compliance of operators with requests for annual statistics on key telecommunications performance indicators. These indicators are required by the International Telecommunications Union (ITU) annually as part of its global benchmarking of ICT development. Tardy or inaccurate data collection does not facilitate Aruba's best representation at this global forum.

This enforcement challenge demonstrates an aspect of the administrative weakness of the current regulatory environment. Specifically, DTZ has only one sanction in law for non-compliance: the revocation of an operating licence. However, there is legal precedent that the revocation of licence is a disproportionate response to failure to comply with reporting requirements. This creates the regulatory position where there is no means

to incentivise accurate reporting by the operators. The way forward would be to amend the DTZ's empowering legislation to provide for the levying of administrative penalties, as an alternative enforcement tool.

Notwithstanding these limitations, even as a spectrum regulator. DTZ requires additional support in establishing frameworks to guide market development. Indeed, the issue of the approach to the issuance of 5G technology as proposed by consultant Stratix, and the associated commentary and advice on these matters by AFTA highlight these concerns.<sup>2</sup> A crux of the discourse seems to be the position that all available spectrum should assigned to each operator, and they will thus pay an equal annual fee for the use of the spectrum. While on the face of it, this may seem equitable, a number of economic and technical considerations were raised:

- Both operators may not need the same amount of spectrum. In that instance, this mandate would force an operator to use spectrum it does not need. This encourages inefficiency of both operators, and in particular penalises the operator who needs less spectrum for their provision of services. Operators should not be obligated to pay for spectrum beyond their needs. Conversely, operators should not be encouraged to hoard excess spectrum assets.
- The per MHz cost of spectrum should be revisited with a view to limiting unnecessary cost burdens to the operators, thus negatively impacting the appetite to roll out new networks. Accordingly, there is an aspect of the conversation around the review and limiting of the per MHz unit cost of spectrum as a means to reduce the barrier to entry of operators.

The resolution to these issues seems to be contrary to a strategy of the State maximising its rents from the operators. However, this discourse raises the question whether greater economic value in the long term would be derived directly from these rents, or from the ancillary benefits accrued from the deployment of competitive networks, and supporting infrastructure.

Similarly, from the interview, DTZ's approach to satellite-based service providers is unclear. It was noted that:

- DirectTV service is available in Aruba, although the operator is not licensed; but
- Star Link is not available in Aruba because it is not licensed.

Other than the distinction in market, DirectTV being a broadcaster of content, and Star Link being an ISP, it is unclear whether there is a wholistic position on the licensing of satellite-based operators as opposed to their terrestrial counterparts. Further, it is unclear whether DTZ has established parameters for licence-exempt use of spectrum in the international bands so designated.

Finally, the position was expressed that regulators should dictate the technologies deployed in a jurisdiction. When queried, this position seemed to be based on technical considerations with little regard to the economic position of the operators. While this may seem a favourable position for those focused on rapid adoption of new technologies, it can be counterproductive to market sustainability, whereby operators' investments are not appropriately reflective of market capacity to absorb new technologies. This increases the risk of regulator-induced market failure.

## 5. Competition oversight

The Aruba Fair Trade Authority (AFTA) was recently established in 2022, pursuant to the passage of its enabling statute, the Aruba Competition Ordinance (AB2020, no. 103). AFTA is sole authority on competition matters, across all sectors, in Aruba. The law provides for AFTA imposing fines up to AFl\$1M or 10% of revenue. With respect to the development of fintech and AI development in Aruba, AFTA notes the provisions

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<sup>2</sup> AFTA advice to the Minister of Economic Affairs: Distribution and compensation model frequency space for mobile telephony (November 2024). AFTA advice to the Minister of Economic Affairs: Allocation and fee model, mobile telephony frequency range (November 2024).

of the Competition Ordinance regarding to market access, competition restrictions and abuse of dominant positions as possible affecting the sector.

As a regulator, AFTA partners with local and foreign partners in the execution of its functions. These partners include:

- Central Bank of Aruba (CBA);
- Department of Economic Affairs, Trade and Industry (DEACI);
- Department of Legislation and Legal Affairs (DWJZ);
- UN Economic Commission of Latin America and the Caribbean;
- Caribbean Community (CARICOM); and
- OECD.

With regard to the legislative framework enabling broad based ICT development, AFTA identified the following:

- **Electronic documents and signatures:** There are two laws which treat with these matters:
  - (i) National Ordinance on Electronic Legal Transactions (AB 2011, no. 30) recognizes electronic signatures.
  - (ii) National Ordinance on Electronic Agreements (AB 2020, no. 157). AFTA noted that Article 2.2, paragraph 2 of the latter Ordinance is intended to be effected in conjunction with the draft National Ordinance on Administrative Enforcement of Consumer Protection.

Both these laws, especially the former, may be subject to review to ensure alignment with international best practices.

- **Privacy and data protection:** While there is existing law in Aruba on this matter, there is significant regional efforts afoot to update same. The National Ordinance on the Protection of Personal Data regulates privacy and data management. This framework however is not deemed to be compliant with EU's Enhanced General Data Protection Regulations (EGDPR). Accordingly, there is work currently underway to establish the new Consensus Kingdom Act on Data Protection (CRW). The CRW introduces a joint authority as a supervisory authority and ensures a uniform level of protection within the Caribbean part of the Kingdom. This is expected to significantly change the legal frameworks for data processing and international data exchange.
- **Recognition of digital assets:** Currently, there is no specific legislation that recognizes digital assets in Aruba.

It is noteworthy that AFTA was the only party interviewed which was aware of the specific legal frameworks that govern the ICT sector in Aruba. This lack of general knowledge of the enabling legal and institutional frameworks could be a challenge for onward sector development.

From AFTA's perspective, the aspects of the regulatory environment which could hinder the development of fintech are:

- The strict financial regulations established by the CBA, and associated high compliance costs; and
- The lack of specific legislation on the recognition of digital assets.

Otherwise, from their vantage point of the broader economic context, AFTA suggests that the Aruban fintech market is small, despite growing interest from local and international partners. Conversely, they are aware that some startups are exploring the use of blockchain and AI as a means to improve efficiencies, thus providing opportunities to provide greater market access to services for consumers, at lower costs. Traditional banks have been using fintech and AI-based fraud detection systems.

The AFTA also identified the lack of specialised knowledge and human resources in this field, noting that there is limited targeted government initiatives to overcome this challenge. This challenge is not limited however to the marketplace. AFTA identified that there would be a need for regulator to build knowledge and expertise surrounding:

- Monitoring and detecting anti-competitive behaviour in digital markets, especially where these markets can cross traditional jurisdictional boundaries; and
- the identification and implementation of appropriate regulatory oversight of AI and blockchain.

Overcoming these challenges are essential as, according to AFTA, fintech, blockchain and AU have to potential to be a double-edged sword, promoting innovation and efficiency on one end, but posing increased risks to fair competition and increased market dominance.

## **6. Cybersecurity and personal privacy**

The National Ordinance on the Protection of Personal Data regulates privacy and data management. However, a major limitation in the existing framework has been the institutionalization of necessary authorities to support sector development and ensure compliance to EGDPR.

In relation to cybersecurity, since 2017, the Security Service of Aruba (SSA) has been working towards increasing awareness about the importance of having a governance structure in place, which provides guidance on cybersecurity in Aruba in an integral way. In 2021, a governance structure was established as basis for the creation of a national strategy. The National Cybersecurity Strategy is aimed at increasing the digital resilience of the government of Aruba, as well as vital sectors, with the aim to achieve information security and protection of vital digital processes.

The SSA has a role to play in the yet-to-be formalized National Cybersecurity Council (NCSR). The latter is responsible for policy development, management and evaluation of the cybersecurity strategy. The SSA also has a role to play in the Cyber Security Taskforce (CST). The CST is responsible for drafting the cybersecurity strategy for Aruba.

To date, no cybersecurity laws or ordinances has been established in Aruba.

## **C. Industry by sector**

### **Common Themes**

#### **(1) Economic Context**

##### ***Domestic commercial context***

- Intrinsically small market impacts the feasibility of market entry to service Aruba alone.
- Traditional business interests do not see ICT-based industry as a priority.
- Highly educated population, however lack of opportunity leads to the “Brain Drain” challenge.
  - Anticipated labour demands in Tourism/ Hospitality will compete for available candidates.
  - Smaller firms are targeting this directly through the introduction of new jobs, outside of hospitality and banking, within the ICT Sector.

### ***International partners context***

- AML/CFT compliance is the major concern of the banking sector and its regulator.
- (2) Public access and protection
- Industry is leading in the compliance to international standards such as EGDPR. However, lack of institutional structure limits public protection.
  - Strengthening of systems that support competition essential.
- (3) Technological Context
- The completion and deployment of the Unique Digital ID project as a key to e-Government and e-commerce is identified by stakeholders outside of the banking sector.
  - Implementation of certification authorities in Aruba is critical to e-Government implementation.
  - Lack of Government leadership on Cybersecurity, despite significant Ransomware attacks in the recent past.
- (4) Regulatory/operational context
- GDPR to be implemented in Aruba as a sine qua non to further digital development.
  - Financial regulations with respect to 60% domestic investment is widely seen as a constraint to investment and innovation.
  - Banks believe CBA is dynamic in respect of digital business. All other sectors think CBA regulations overly stifling, particularly with regard to:
    - Capital requirements for small and medium-sized enterprises (SMEs)
    - One-size fits all application of AML/CFT may be doing more harm than good.

## **1. Banking**

The Aruba Bankers Association (ABA) represents the four commercial banks in the market. Other than their membership, the banking and lender market consists of and one investment bank and six micro lenders on Aruba.

### **Perspectives on the regulatory environment**

With regard to the regulatory and supervisory environment, the ABA provided a perspective that the current Aruban environment is generally friendly to fintech. Highlighting their view of the CBA as proactive in supporting digitalization of banking services, ABA the success of the inter-bank settlement system, and concomitant elimination of the use of cheques in Aruba. Further, ABA noted that although Aruba was highlighted by the FATCA and FATF, it was never grey listed. This achievement was due to the alacrity with which the CBA and Government responded to the country being initially highlighted. This resulted in laws being fine-tuned to avoid grey listing and further sanction.

This responsiveness was reflected on favourably by the ABA, as they referred to the fact that some Correspondent Banking Partners are de-risking the Caribbean generally. Thus, to avoid this occurring the ABA reaffirm the prudence of careful management of these relationships, through appropriate application of AML/CFT procedures.

Regarding the broader regulatory environment, ABA noted that current regulations restrict the emergence of an investor cadre in Aruba. That cadre sees its opportunities for investment shrinking with the changing of rules regarding foreign investments in other jurisdictions. This challenge exacerbates what is considered an already burdensome requirement for:

- 60 per cent of a person's capacity to be invested onshore; and
- The relative high cost of moving money, by virtue of the CBA's Forex licensing and tax regimes.

### **Market Participation and Access**

Regarding the sector, ABA expressed the opinion that there is significant access to the banking sector by the public of Aruba. So the ABA posited that market share that is unbanked is not expected to be significant. However, they highlighted that the question that can be investigated is whether the sector provides the lending and advisory services that meets the needs of all Arubans. This represents those that can be classified as underbanked. This is the space in which fintech services could exist. Indeed, ABA posited that fintech development in Aruba is not an issue, with the bankers themselves pioneering innovations and willing to participate, as it encourages modern processes in payment digitization. They suggested an intrinsic challenges in the development of new fintech actors are input factors:

- The limited economies of scale by virtue of Aruba's population.
- The relatively high standard of living and thus operating costs.

These factors input constraints are then exacerbated by the loss of limited talent due to the "brain drain", caused by the lack of opportunities in the local job market. Conversely, ABA members that seek to develop internal tools using DLT and AI's depend on capacity present wider afield with operational partners/ upstream owners, leveraging talent not resident in Aruba.

Noting the issue about attracting businesses onshore, there was interest in adopting the FreeZone model for ICT Services, geared towards transforming Aruba into a hub for Corporate Head Office establishments.

### **Market opportunities for fintech, DLTs and AI**

ABA noted that there are no frameworks treating with the use of DLTs and AI. This lack has not stopped the capacity and opportunities for innovation. While this open playing field is welcomed, it was also noted that this creates an outside risk that some investment could be problematic for the sector, leading to painful intervention from the CBA. To mitigate this challenge, the ABA suggested that the use of public-private partnership, between CBA and ABA in developing that framework, which would include standards, approved practices etc. Indeed, ABA reflected on the precedent where CBA's partnership with the association is necessary for the effective implementation of new rules and directions.

Regarding broader application of DLT, such as cryptocurrency, the ABA was firm: the banks monitor and seek to restrict any cryptocurrency-based transactions. Trading via crypto exchanges is discouraged. The rationale behind this position was clear: cryptocurrency is deemed a significant risk in relation to adherence to KYC rules and associated compliance to AML/CFT obligations. Any activity that risks AML/CFT compliance has a negative impact on correspondent banking relationships and are thus discouraged.

### **Market development**

Looking wider afield, the ABA advises that they do not currently invest in Financial Literacy education initiatives geared to improve the general education of the market, raising the appreciation of the importance of investments. This could be based on the limiting of the investor cadre due to the prevailing regulatory environment. ABA noted that there are customer education/ campaigns targeted to inform consumers about fraud risk generally, but not about cryptocurrency-based risk in particular.

## Cybersecurity and Risk

Regarding cybersecurity, ABA advised that individual members have undertaken their own robust programmes geared to mitigate risk. Identifying examples of programmed activities, such as annual training of frontline, managed phishing programmes and the provision of each employee with a “cybersecurity score”, the ABA reaffirmed that there is significant internal systems and controls to treat with the issue of cyber security.

## 2. Insurance

### Who is AIA?

The Aruba Insurance Association (AIA) represents all insurance companies in Aruba. By supervisory law, all insurance companies have to be members of the AIA. The CBA is the sector regulatory authority.

### Market Size and Scope

The market consists of twelve (12) insurance companies, providing a mix of three insurance business lines (Pension, Life and General (non-Life) Insurance). Of these:

- Three companies provide services along all insurance business lines; while
- Nine companies provide services which are a mix of the business lines.

The insurance market is estimated at a total value of AFl250 Million, up to 60% of which is business that are managed through insurance brokers.

Conversely, on the investment market has an estimated at AFl1.6B on the balance sheets of the biggest two insurance firms. By regulatory mandate of the CBA, 60% of these investments are made onshore in Aruba, as structured loans by big firms in the hospitality and construction sectors. The CBA regulates the types of investment vehicles available to the insurance sector.

### Perspectives on the regulatory environment

From a perspective of the regulatory environment, AIA held a position that there are significant challenges which would impact the development of fintech and DLT's in Aruba:

- From the perspective of Government action, the AIA argued that the lack of Open Data frameworks in Aruba is a constraint to innovation. In this regard, it was highlighted that key data sets that would assist the effectiveness and efficiency of insurance operations are locked in siloed Government databases.
  - In this regard, the Government's UniqueID project was cited as a project with which there was much favour from the AIA as a means to eliminate the silos within Government databases. While the basic platform exists, the AIA noted that the project's progress may be stymied due to the lack of participation of Government agencies.
- Data Protection compliance with EGDPR is being led by the industry, including through the AIA, to facilitate continued attractiveness of the sector.
- From the perspective of the regulatory environment, AIA suggested that the capital requirements imposed by the CBA are disincentives to the establishment of fintech. Indeed, they cited the experience of Pay.aw as an example of the application of one-size fits all constraints would be a major limiting factor in the development of innovative fintech solutions. More broadly, there was the AIA expressed opinions that:
  - Aruba's regulatory environment not only lags five-to-seven years behind developments in Europe but also lags developments behind Curaçao. This raises concerns with respect to the competitiveness of the sector to its neighbours.

- CBA seems to not sufficiently understand the insurance business it regulates and therefore seems to regulate in a heavy-handed manner. In that regard, there is advocacy for greater consultation between the CBA and the industry, with the latter providing clear rationale behind decisions which impact the business.
- Further, the AIA highlighted that tardiness in establishing regulatory institutions, discourages investment in any kind of innovative new market entrance. This delay in institutional development creates an environment where there is lack of enforcement of regulatory obligations, both of firms and the general public. This reduces the predictability of the marketplace, increasing risk. As an example, the current scenario was highlighted, while there are two (2) insurance products mandated by law, Pension and Vehicle insurance:
  - Regarding Pensions, there is no institutional authority in place to ensure compliance by the market, so there is no indication of market compliance to the law.
  - With regard vehicle insurance, enforcement is facilitated through the vehicle licensing authority which previously required annual renewal. Even with this framework non-compliance is known to be as high as 28%. With the changes in law where the annual licence renewal is replaced by a 5-year renewal period, compliance is expected to fall further.

From the perspective of the wider private sector, AIA noted that 80% of the domestic economy is in the hospitality industry.

### **Market opportunities for fintech, DLTs and AI**

The AIA also suggested that the banking systems in Aruba are traditional and lag the wider market in innovation. As opposed to seeing this as a market opportunity for fintech development, the AIA posited that the positioning of the sector would increase the resistance to market entry. Indeed, the perceived lack of digital innovation in the banking sector has resulted in insurance companies looking further afield looking for solutions to resolve existing challenges. In that regard,

- While AIA members currently utilise e-commerce solutions via their various online channels, they are also investing in new platforms to facilitate end-to-end online enrolment, onboarding, payment and signature.
- There is the opportunity to encourage transparency across all sectors in Aruba, through the possible centralization or aggregation of data sets for ready access by industry participants. The use of AI and DLT can be of assistance.

These are business streamlining opportunities that the introduction of fintechs may take advantage of a leverage to ease the approaches through which business is facilitated between sectors.

### **Market development**

In terms of not specifically growing the potential market, but in reducing the instance of non-compliance, AIA posited that education, and specifically Financial Literacy education is key. This is based on the trend that the level of education of an individual can be used as an indicator of their inclusion within the insurance sector. Accordingly, it was encouraged that more is done to introduce key aspects of financial literacy in the school curriculum. Noting that CBA sponsors “Money Week”, the AIA noted that most of the work done in this regard is being implemented by either private sector or civil society interests. Whether the AIA could partner to have targeted Insurance Awareness programmes as an opportunity to fill that gap was highlighted.

It was however noted that there may be further inclusion issues, especially with respect to the compliance challenges faced in this sector, due to the population of migrants in Aruba.

## Cybersecurity and Risk

Regarding cybersecurity, AIA advised that there is a mix of outsourced and in-house cybersecurity approaches. In both cases, it is benchmarked against the best practice of what persists in Holland.

## 3. Telecommunications

### Who is Digicel?

Digicel Aruba is a competitive telecommunications service provider, that competes in the mobile segment with the State-owned Setar. Digicel has concessions to also provide Fixed voice and ISP services. However, Digicel has thus far not opted to provide services in these sub sectors.

### Market Size and Scope

Without confirmation, Digicel postulates that in the mobile market, there is a 50/50 split in market share between its operations and Setar's.

In all other subsectors, Setar is dominant, if not monopolist.

### Perspectives on the regulatory environment

Telecommunications sector liberalisation in Aruba was not brought about by the passage of legislation targeting the breaking of monopolies and/ or introduction of new entrants. Instead, sector liberalization was achieved through multiple challenges in the Administrative Court over a period of four (4) years. Liberalization was not competition law driven as is usually the case. Instead, EU precedence based on Freedom of Speech jurisprudence was the basis for opening that market and the facilitation of technical interconnection.

Accordingly, Digicel continues to see imbalances in the market that suggests the need for robust competition management adjudication:

- Management of the numbering resource is such that short codes do not work across networks, except in instances of specific government mandates.
- Number portability is not allowed.
- Issues with interconnection costing reportedly persist.
- The prices at which Setar sells wholesale bandwidth to Digicel is reportedly unattractive, as these are not regulated or controlled by DTZ. This forces Digicel to use microwave links to carry traffic off island.
- There are issues with accessing poles and ducts at reasonable prices. This discourages Digicel from deploying a fibre network, or provide fibre backhaul from its cell sites/ Node B's.
- There are concerns with the proposed framework for 5G spectrum assignment. Much of Digicel's concerns are reflected in AFTA's concerns to the proposed framework.

These systemic dysfunctions provide for a bad environment for competition and innovation. This has a concomitant negative impact on redundancy and scalability of the on-island infrastructure. This also constrains competition in services that depend on telecommunications and broadband.

Digicel posits that it is critical that it is treated in a non-discriminatory manner by both the regulator and the Government departments.

## Market opportunities for fintech, DLTs and AI

Digicel posits that there are a number of innovations in the broader market space that can be introduced with the introduction of independent fintech, AI and DLT service providers. These include:

- Realtime online payments are an emerging issue. With the pending exit of Maestro payment services from the market in mid-2025, and its replacement by the Mastercard, the transition is expected to cost merchants through an increase in service charges (reported from 0.5% to 4% of transaction value).
- Electronic Stock Exchange services. These were proposed and notably banned by the CBA.

It is anticipated that the broader regulatory environment may need to be reviewed from the perspective of managing innovation. Digicel further argued that the prevailing regulatory environment was a disincentive to their investment in either their core business (and thus timely upgrade to 5G) or any other aspect of the private sector.

## Market development

In terms of growing the market, and the ICT Sector in general, Digicel further proposed:

- The implementation of a Unique Digital ID for Arubans. This was seen as a necessary first step for ICT sector development in Aruba, jump starting e-Government and greater e-commerce.
- The implementation of a Procurement Regulator to improve transparency in Government transactions, was also seen as an important institutional requirement.

## Cybersecurity and risk

There are no regulatory guidelines surrounding standards for network security and resiliency. Accordingly, examples were identified where critical infrastructure deployed by Setar is exposed due to lack of physical protections deployed. This failure of regulatory oversight increases the risk of major network failures.

Similarly, there are no guidelines to treat with minimum cyber security requirements of networks.

## 4. Fintechs

### Who is Pay.aw?

Pay.aw is an e-wallet service developed by Setar, the State-owned telecommunications operator. The e-wallet focuses on smartphone-based payment solution that allows users to transfer money already in their bank account into a closed network of customers and vendors that allow card-absent transactions based on transferred cash value. It should be noted that once money is entered into the Pay.aw network, users and vendors trade tokens with assigned value. The users do not trade money or currency per se. The user only realises the monetary value of the transactions when they "cash out" their tokens' value into their bank accounts.

Pay.aw initially targeted micro and small businesses that traditionally operate via informal cash transactions. These businesses do not traditionally need to be registered with the Chamber of Commerce or have business bank accounts. However, due to regulatory requirements of the CBA, this approach was abandoned. Instead Pay.aw focused on automating simple financial transactions as a service, allowing the transfer of cash value between users, and the online payment of merchants.

Pay.aw now includes a network of vendor terminals. These terminals allow vendors to collect cash value within the closed Pay.aw network. By expanding the base of participating vendors to include the Electricity Company and CITCO fuel stations, the service now competed with the banks' debit card product as a means to make payments to these vendors.

The platform effectively competes against the habits of entrenched banked users, through the provision of convenience. Further, there is increased usage of young, unbanked users who leverage peer-to-

peer transfers from parents or guardians who pay into their wallet on their behalf, a feature not readily available through traditional bank cards.

### **Market size and scope**

Setar advises that Pay.aw has approximately ten thousand (10,000) active monthly users, with a full market penetration of between forty and fifty thousand (40,000 to 50,000) users. These are individual users who can move value between themselves. Separately, the Pay.aw platform has approximately three hundred (300) active vendors. These are accounts for which when value is received it cannot be resented to any other user. Instead, that value must be “cashed out” into the vendor’s bank account.

Pay.aw is currently the only e-wallet solution in Aruba. Other competing payment fintech (Sentoo) is entering the market from Curaçao which enables account-to-account transfers through payment portals.

### **Perspectives on the regulatory environment**

Pay.aw complies with the CBA defined “gift card” limits, where no one user’s account could have an excess of Afl350, and the total value of money in the eco-system should not exceed Afl5M. Accordingly, CBA has determined that Pay.aw would not be classified as a supervised institution, but that full AML/CFT requirements should be maintained.

AML/CFT requirements forced Pay.aw to adopt all KYC and onboarding obligations, despite Pay.aw does not accept cash but instead requires the user to transfer value into the network from bank accounts. Setar questioned the added value of this AML/CFT/ KYC obligations when that would have already been met by the banks prior to the funds being transferred onto Pay.aw.

Setar posits that to support fintech development, there should be a review of the application of full AML/CFT compliance to downstream Fintech service offerings such as Pay.aw, given that:

- The network is closed, so that there is general oversight of who is using the network at all times; and
- The value transferred onto the network would have already been vetted through the upstream banking system.

Noting the discussion around CBA’s proposals to establish a regulatory environment for Payment Service Providers, Setar suggests that it is essential that it does not burden these parties with the full regulatory burdens of supervised institutions.

### **Market opportunities for fintech, DLTs and AI**

The Maestro payment network is going out of service in Aruba, by mid-2025. The Maestro payments system provided Aruban banks with significant flexibility in determining fee structures for their clients. This will be replaced with the Mastercard payment network where there would be much less flexibility. Setar sees this development as an opportunity to deepen its market penetration as an alternative to bank card-based payments.

Similarly, credit cards are unattractive to most Arubans because they have to convert Afl to USD, with associated taxes and bank charges, to settle USD balances. Further, vendor fees for the use of credit cards range from 3.5 to 4%. Setar also sees this as an opportunity for the Pay.aw platform, and other fintechs, to assist in revolutionising the digital payment environment.

## Market development

Pay.aw has developed and grown its market based on referrals and marketing the capacity of the platform for increased convenience and lower overall costs.

Initiatives such as Loyalty programmes, where users accumulate redeemable miles for value used, was deemed an expensive marketing approach and not sustainable.

## Cybersecurity and risk

Setar advises that the Pay.aw platform built for security, as it is ISO27001 compliant. Further, penetration tests have been undertaken to ensure platform is well positioned and closed. As yet, no vulnerabilities have been found and there has been no cybersecurity incident. Setar advises that it is required to report to the CBA on any cybersecurity incident, as to the size of eco-system affected by any incident which occurs.

## 5. Other business associations

### (a) The Chamber of Commerce and Industry Aruba

#### Who is the Chamber of Commerce and Industry Aruba?

The Chamber of Commerce and Industry Aruba is the official Business Registry in Aruba, that is, all businesses in Aruba register with the Chamber as members. There are few exemptions, including seamstresses and fisherman. This function of business registration occurs on behalf of the Ministry of Economic Affairs.

#### Perspectives on the regulatory environment

Very little feedback on regulators as actors in the market. The Chamber noted that there is no:

- Public Utilities Regulator, recognizing the recent development of AFTA.
- Information Commissioner.

#### Market opportunities for fintech, DLTs and AI

The Chamber identified current operational challenges relating to the accessibility to advanced banking and financial services. It anticipated that emergent services in these niches would be attractive:

- None of the local banks provide services that facilitate foreign investments. One bank provides stock trading, however its fees are high compared to regional comparators (2%, compared to CIBC at 0.5%).
- There is no local Securities Exchange to facilitate trade in stocks, bonds, etc. As such, access to stock markets are via letters of credit from local banks to foreign investment banks. Given the Foreign Exchange Regulations, depending on value, need approval from Central Bank before wire money abroad, up to annual limits.
- The emerging issue of the pending replacement of Maestro's interbank card systems with the Mastercard payment platform. With this change will be an increase in merchant facing debit/credit cards charges, estimated as from 1% to 4%. Traditional banks are not considering alternatives to this monopolist, and possibly inflationary move.

## Market development

While the Chamber does twenty-seven (27) training programmes a year, they are focused on matters relating to general entrepreneurship, such business plan development, accessing financing, financial management etc. There is not any focus currently on readiness to participate in the ICT Sector. The Chamber is of the position that most tech-based firms are based on marketing products in the domestic market. Where there is development, suggests that proprietors are using tools and cheaper labour (software design, websites etc.) out of Colombia.

Noting that there is much interest in the use of AI and blockchain technology, with some parties hosting seminars with such a focus, the Chamber reports that its membership questions the existence of an appropriate vehicle to drive adoption. Notwithstanding such concern, the Chamber advised that it seeks to establish an AI Forum to advise the Government on laws as it relates to the application of AI in Aruba.

Another emerging market-based challenge is the emergent labour shortage in Aruba in the traditional tourism/ hospitality sectors. Highlighting the completion of hotel projects demanding more human resources than currently available. Indeed, the Chamber referenced its study which suggests a need for sixteen (16,000) people in the next 4 years. Given the expected impact on available human resource, the Chamber posited that business is seeking opportunities for economic expansion which are not dependent on labour, that is, not labour intensive.

### **Cybersecurity and risk**

The Chamber noted that cybersecurity and cybercrime risk mitigation is not a topic of significant discussions. This despite there being significant Ransomware attacks in the recent past, most notably an attack which impacted the Hospital. The Chamber noted the limited discussion around the incident, and further highlighted no clear leadership from the government in this regard. Indeed, the Chamber questioned the existence of government department to mitigate against reoccurrence.

#### **(b) Aruba Trade and Industry Association**

##### **Who is ATIA?**

ATIA is an employer representative organization. It has 160 members. Among its membership it boasts members as small as micro-SMEs to large enterprises. Indeed 75% of membership are firms that are smaller than 50 employees. 50% of membership are firms which are smaller than 20 employees. ATIA however does not represent hotels. The Aruban Tourism Association is, however, on its Board.

##### **Perspectives on the regulatory environment**

Foreign exchange tax and licensing regime makes it more expensive to do business in Aruba. Citing the following aspects of the foreign exchange regulations:

- Businesses can have US dollar accounts, with special permission.
- Businesses can open accounts in the USA but must register them to the Central Bank.
- Individuals are not allowed to open US dollar bank accounts.

ATIA queried the impact of these on the capacity of Arubans to trade across borders effectively.

Noting the general impact regulatory inefficiency and opaqueness can have on trade and business development, ATIA claimed that despite what is outlined in statute, it takes between 12 and 18 months to get an official banking licence from the CBA.

ATIA also highlighted the limited competition in the Aruban utilities sector:

- Noting the dominance of Setar in the telecommunications space, with the exception of Digicel in the mobile, ATIA questioned why the Satellite service StarLink was not to access to the Aruban market.
- Noted that the Electricity company resists change - 60 companies producing 80% of its revenues, despite the implementation of solar parks.

Otherwise, ATIA posited market competition in all other private sector aspects of the economy.

##### **Market opportunities for fintech, DLTs and AI**

With regard to the introduction of a fintech sector in Aruba, ATIA highlighted that fintech is already in the market, via both Pay.aw and Sentoo. The challenge is whether the mix of regulatory burdens and charges

will encourage sustainability of both these providers and potential new, or alternatively deemed too onerous, stymying market entry.

With regard to widespread adoption of DLT as a service product, ATIA posits that Aruba's potential is constrained by the size of the local market. Noting that export-oriented business would be a viable option, ATIA highlighted that:

- The Freezone laws would require amendment, including the introduction of tax incentives, to facilitate same.
- Previous conversations about the implementation of key digital resources, such as Data Centres et al. would have to be reconsidered if pursuing this approach.

With regard to AI/ ML, ATIA posits that AI deployments are already present in Aruba, however these are informally or internally to some firms, geared at investigating the opportunity to improve efficiency in operations. There are some concerns about ethics of use, especially noting the AI Act established by the EU.

ATIA posited that there is an opportunity for systemic interventions in the ICT space in Aruba, around these services and others. Noting an opportunity for the establishment of appropriate tax incentives to rebrand Aruba as a preferred base for the establishment of the headquarters for multi-national participants focused on export of these services. Further, there is the opportunity to integrate the tourism product with a vibrant ICT sector to attract digital nomads.

After all, ATIA posits that Aruba would be competing with Medellin, which is seen as the fintech capital of South America.

### **Market development**

ATIA focuses its efforts on market development and training on initiatives geared to its membership. However, the formats of these masterclasses and sessions tend to allow wider participation from interested persons from the general public.

As discussed, ATIA has focused on industry-led initiatives that ensure its members are adjusting their operations to be in compliance with international standards. In that regard, there is the intention in 2025 to host a proposed Masterclass on Ethics in AI, such that employers sign-off on Fair Use Policy on AI in Aruba. The ATIA intends to use AI Act used as a benchmark for its session and intends to make access open to the public as well.

With regards to targeted efforts towards vulnerable groups, ATIA said that tThere is no targeting of education programmes to women and/ or elderly. ATIA noted that this is due to large penetration of these groups in its membership. As such, the matter of under-represented groups do not arise and it can maintain its focus on generally inclusivity in its initiatives. Further, there are Special Interests Groups, which are well established and specialized in targeting these groups.

## **6. Technological/ ICT firms**

### **(a) Cybersecurity Centre of Excellence (CCOE)**

#### **Who is CCOE?**

An Aruban start-up with a focus on cybersecurity services. Notable for Setar being a shareholder, but not controlling interest, CCOE is forging a path in cybersecurity service delivery. CCOE's suite of services include:

- Security Operations Centre (SOC)
- Information Technology and Information Security Governance
- Computer Emergency Response Team; and

- AI Augmentation

The SOC service leads the revenue mix and is naturally the most scalable of the products. In this market CCOE has no local competitors - only competition from external (US and Dutch) firms, who do not focus on the Aruban market because of the size. CCOE thus targets small countries in Latin America and the Caribbean (LAC) to grow its business. While it boasts domestic clients, about 30% of the private sector in Aruba including all the local banks, the international airport, one telecommunications provider - 85% of CCOE's turnover is external to Aruba.

### **Perspectives on the regulatory environment**

CCOE was forthright of the need for improving the breadth and scope of the regulatory environment to support ICT sector development. These included:

- Highlighting the need for GDPR implementation in Aruba to provide the confidence to transact with firms in Aruba.
- Advocating for the establishment of a statutory CERT function, which goes hand in hand with GDPR. Intuitively, CCOE recommended that the function should:
  - Not be too close to the Government; and
  - Reaffirm that CERT function must be do Incident Response, specifically.

CCOE cited the example of Curaçao, where CERT is associated with the telecom's regulator, which is still a department of Government, as an example of why the stated conditions should be part of Aruba's CERT initialization efforts.

- Identifying the need for the implementation of Certificate Authorities and Authentication Service Providers in Aruba. CCOE noted that this has curtailed e-Government development. This suggests a distinct, private sector led view to the Government's DigitalID project. In so doing the question was raised:
  - Should these capacities/ agencies be built domestically, or should they be attracted from external service providers?
  - If built, how would these capacities/ agencies get recognition from the broader, global eco-system?

As to whether this development is a priority, CCOE noted that without these, there is a lack of trust to use advanced digital services. This lack of trust negatively impacts the use of Cloud-based services which may originate in Aruba.

As a means of crystallizing the priority of these initiatives, and ensuring coherence and consistency, CCOE encouraged the centralization of Digital Business portfolio, a CISO/ CIO of Government.

### **Market opportunities for fintech, DLTs and AI**

As with others, CCOE sees the rules governing the financial sector as a bottleneck, specifying various pain points:

- For start-ups, inordinate delays and bureaucratic processes become soft barrier to entry.
- For going concerns - delays in transfers and foreign payments, negatively impacts partner relationships, and customers. Further, there is a high cost of business in treating with foreign exchange which reduces the attractiveness of Aruba as a destination for inward investment.
- Opaqueness of transfers due to anonymization of records.

CCOE does all its banking in Aruba, so delays and inefficiencies in banking negatively impacts business efficiency and opportunity. Accordingly, CCOE would welcome the introduction of fintech services geared to

ease delays/ constraints in banking. CCOE reflects that speed is of the priority, in particular between firm and external suppliers.

### **Market development**

There is a highly educated population. Brain drain is an issue in Aruba, partly due to the:

- Cost of higher education (e.g. Masters qualification and Professional Certifications), which in turn results in high student debt.
- Greater opportunity to seek greater experience and exposure available in Europe and USA fuels
- Lack of channels for employment in the ICT sector.

Notwithstanding these challenges, CCOE has been successful in re-attracting human resources to Aruba. This suggests that there is an appetite for more such retention of human capital if there are local opportunities.

Further, CCOE referenced a new initiative to establish a train-the-trainer programme (with Head of Security of CBA) called Cyber-School. The development of these services into a vibrant knowledge-economy will diversify the economy from Hotelier or Banking spheres.

### **(b) GammalT**

#### **Who is GammalT?**

GammalT is a software development firm, with subsidiaries in Aruba, Curacao and Sint Maarten. GammalT's target markets Caribbean and South America countries. Primarily a technology shop, the firm develops local partnerships in each country, where the partner manages sales, marketing etc. for non-Government clients. However, given the complexity of work undertaken for the Government of Aruba, the firm manages that client specifically.

GammalT's product suite includes HR and Payroll software packages. In that regard, it boasts that 80% of the employed market in Aruba is paid through the GammalT platform. This is estimated as high as 95% of the market in St. Maarten. Further, GammalT has ventured into eGovernment, including Border Control platforms. In that regard, it has established a subsidiary, Radix.

With respect to concerns of potential market dominance, GammalT noted that there is an open access for market entry in the sector and highlighting that the software is run on clients' infrastructure so there is limited barrier to exit. Accordingly, no competition issues should arise, and none have so far. They further noted that there is one locally based competitor in the HR business, with other competitors from Curaçao.

#### **Perspectives on the regulatory environment.**

Market led adherence to EGDPR because of the experience of Principal. Notes that the EGDPR may be enforced for implementation by 2027.

#### **Market opportunities for fintech, DLTs and AI**

AI is popular to support development process (internal not to the client).

Aruba does not have a Payment Gateway. Instead GammalT uses a Curaçao based Payment Gateway. IDEAL (the largest payment gateway in Europe) does not have access in Aruba. These are definite opportunities:

- For a fintech that provides a Payment Gateway to support e-commerce in Aruba.
- For a fintech that provides automatic interfacing between QuickBooks (Accounting software) and the banks. There is a precedent for such development in Curaçao.

## Market development

Initially brought in talent with degrees. However, because of high candidate churn, and attitude of candidates through this approach, the firm has moved away from this strategy. Further, there are bureaucratic challenges associated with the importing of skilled labour.

To overcome these challenges, GammaIT has shifted its strategy: now onboarding local talent which are not necessarily trained in ICT, but with passion and appropriate attitude to facilitate training and upskilling. Based on this emergent approach, employees can migrate to areas of business depending on their interests, including:

- Design
- Database and
- Integration/ UX

Further, they also focused on hosting coding camps, targeting children, teenagers, and young adults. Although predominantly male participation thus far, there may be targeted initiatives towards women specifically. The camps include elements of dynamic problem solving as a means to identify potential talent. GammaIT reportedly receives no tax rebates or other government incentives to carry out these programmes.

## D. Innovators, academia and practitioners

### Common Themes

#### (1) Economic Context

The private sector and civil society are filling some of the gaps identified in the CBA reports, especially with respect to human capital development. Is it enough?

#### (2) Regulatory/economic context

- The private sector forging ahead with export-oriented activity, largely having to work around the regulatory environment.
- CBA application of AML/CFT regulations overly onerous. Is there over-regulation?
- CBA approach to regulation of market is opaque to the practitioner.

#### (3) Public access and protection

- Implementation of GDPR and AI Act should precede the implementation service sectors in fintech and AI.
- There is a need to prepare the market, through adoption of revised approach to privacy as a precursor to developments in fintech, AI and DLTs.

#### (4) Technological context

- Consensus that there is a role and future for fintech and AI in Aruba.
- Divergence in opinion on the feasibility of DLT and Blockchains

## 1. Academia, innovators and practitioners

### Overview

The interviews included a cohort of innovators and practitioners in the wider ICT Sphere, as well as those with professional pursuits in fintech, or personal interests in AI and blockchain. Furthermore, perspectives were gleaned from those in Aruban academia on their perspectives of these potential of these fields.

These innovators boasted a wide breadth of experiences upon which their perspectives were honed: from decades of experience in software development implementing ERP platforms for large firms, through platform development for Government departments leveraging AI & ML, blockchain and PKI, to the provision of targeted project management services in the fintech industry in Aruba, these contributors provided significant context and depth to appreciating the experienced reality of the ICT professional in Aruba.

A common experience referenced by all, however, was some time working or studying abroad, either in Netherlands or Europe, which expanded their expectations of what could be achieved in the appropriate, enabling environment. Some of these persons returned to Aruba, and at least one, is still abroad but with a keen interest to assist in curating the appropriate local context to facilitation repatriation. Common issues raised about the regulatory context were:

- The absence in Aruba of GDPR, seen by most as an absolute prerequisite to broader eco-system development, closely followed by
- The need for clarification on intellectual property and ownership of data between clients (such as the Government) and third-party service providers.

Another common experience referenced was the need for leaders, both in the public and private sector, to recognise and clearly identify the core benefits they seek to pursue. These business or operational needs should guide the implementation of technology - as appropriate technology solutions flow from functional requirements. In that regard, it was noted that for both e-Government and e-commerce implementation:

- Process automation and digitalization are key operational outcomes that should be codified in the programme's expectations.
- Standardization, key when it comes to efficiency. This would mean standardization in protocols, standards and practices provide for benefits which can be accentuated by the use of technology.

Another common experience was the curtailing of innovations by regulatory intervention. There was a concern about the lack of clarity of what triggers regulatory actions. This lack of predictability increases the uncertainty associated with technology projects which require significant capital outlays to initiate.

In this regard, there was specific concern about introducing a platform into the environment which could support increased transparency in the field of financial services. The participant expressed reticence about developing this project privately because of the expectation is that the CBA intervene seeking would over-regulate access to the platform, require all participants to register which will destroy this market of SMEs. If this were to occur, it would be the opposite of what is intended, creating instead a default monopolistic environment where parties cannot meet the registration requirements. While entirely speculative, this exchange highlighted the perspective of the smaller participants in the broader financial sector that CBA operates with broad discretion and without transparency in decision-making. If true, this is a recipe for abuse that must be curtailed. If not, this suggests that work must be done to introduce more trust into the system by smaller operators, generally the source of the greatest innovations.

### (a) Social context

The discussion on the social context among this cohort of respondent centred on the question of broader market readiness for the changes that will be required to support these developments. In that regard, the Brain Drain phenomena took centre stage. Most of the respondents posited that the phenomenon is due to either:

- The lack of opportunities for employment outside of the Hospitality and Finance sector, or
- Capacity of the domestic environment to support their interests, pursuant to their studies and experiences abroad.

Indeed it was noted that where Arubans do return, most remain internationally active. To repatriate expertise from Netherlands, the following non-legislative environmental pre-requisites needed to be addressed:

- The skills gap between the international marketplace and local practitioners;
- The eco-system tech gap, which included functionalities such as:
  - Easy online payments.
  - compliance around fintech standards.
  - tokenized assets and their legal status.
  - the infrastructure to facilitate real-time settlements).
- The establishment of a Regulatory Sandbox to test AI and DLT in real-world application.
- Think Tank framework that will entrepreneurs' access to capital and business networks.

Of these, it was noted that the latter two pre-requisites were exacerbated by Financial Regulations. In that regard, the impact of CBA Regulations on fintech development were raised. A fintech practitioner noted that the CBA regulations included provisions that increase risk profile for non-face-to face ID verification. This increased risk profile required more stringent conditions on business-to-client engagement. Arguing that these conditions were more onerous than the FATF requirements, it was posited that these could create another soft barrier to entry to customers.

Other than the Brain Drain issue, the most pressing social concerns was the readiness of the Aruban community to the changes necessary to be truly digitally enabled, transforming the culture to use these platforms appropriately. However, the question arises: what is appropriate use of these technologies? Whatever that may emerge to be, there must be the business and social recognition of:

- Great risk in introducing DLTs and AI, based on democratizing of power and autonomy of the end user; and
- The need to enhanced security and privacy practices as a priority.

This view underscored a belief that the real transformation would be achieved with the movement of minds, to change perspectives on how things are done, in business and society. This view argued that this "soft" transformation is more important than technology. Any great change needs a great, island-wide movement. So it is imperative that there is concerted thrust from both public and private sectors, establishing a single vision, with a big supporting action, which is then communicated together in partnership – consistent across different channels for different audiences: through the school, the wider workforce, and government. This movement must be a precursor to the application of regulations for compliance. To enable this movement, there would be a need to stimulate literacy within the wider community, as there are limited persons who understand these spheres outside of those who have special interest and training. This view saw wider mainstreaming of:

- The key concepts of privacy.
- Pitfalls of the current way of working.

- The benefits of adopting the new modalities powered by AI, fintech and DLT as key to empowering the general public towards making the shift to the digital economy.

In addressing the discussion on the identified skills gap in Aruba, the STEM<sup>3</sup> Programme in University of Aruba was highlighted. It was however noted that the programme, which has approximately an annual intake of about 20 persons (70% men on average), it was highlighted that it was seen as an engineering/technology programme. This may not be the best vehicle to introduce skills for blockchain development and AI, which are Computer Science fields of study. This highlighted that there is no academic product at the University offering for a 4-year Computer Science degree. In this regard, it was suggested that there be more focus on the education mix, to expand on the limited options for IT studies specifically.

Further developing the conversation about areas of focus to close the skills gap, using a scale of 1 to 5, with 1 being the highest priority and 5 being the lowest priority, respondents were asked to prioritise the areas of study which should be developed to support development in the broader ICT space. The mean rankings are displayed below:

(i) General programming	1.6
(ii) Cybersecurity	2.4
(iii) Infrastructure and telecommunications	2.0
(iv) Fintech	4.6
(v) Distributed Ledger Technologies	5.6
(vi) Artificial Intelligence	4.2

Evident from this snapshot survey are:

- “General programming” and “Infrastructure & telecommunications” were both given the highest priority.
- Along with “Cybersecurity”, these three were consistently considered the areas of human capital development worth focusing on. Each respondent saw a combination of these three as the bases upon which expertise in other skills can be built.
- Most consistently just outside the “top 3” is “Artificial Intelligence”.
- “Distributed Ledger Technologies” is consistently the least prioritized of the areas of study.

More pragmatically, the fintech practitioners among the cohort posited that, as software applications are largely imported, the employment sector with the most potential to grow would be in project management, citizen developers, and re-engineering activities, that is, positions that are less technical with a focus instead on change management and facilitation. They further conceded that the wider adoption of these technologies will eventually result in a shift in jobs, not necessarily loss. There was the opinion that the severity of impact on the job market would depend on the willingness of employees to learn new skills, enabling them so as to grow into opportunities that will emerge as the job market shifts.

The last major socially sensitive context that was discussed among this cohort of respondents were the issues of Economies of Scale, or more accurately the lack thereof because of size of Aruba and its population. Given the market size, business cases with adequate returns on investment would be hard to achieve. This can mitigate the development of independent private sector driven fintech initiatives. Indeed, it was posited that this challenge of lack of Economies of Scale impacts the policy focus on DLTs and AI as well.

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<sup>3</sup> Science, Technology, Engineering and Mathematics.

## **(b) Technological context**

A widely held opinion among these commentators was the belief that cybersecurity is not taken as seriously as it should be, despite the fairly frequent occurrences which suggest that there should be more focus. In particular, the ransomware attack on the hospital was mentioned a number of times. The commonality of the concern is only highlighted that these parties were still unclear on the specifics of the matter, reaffirming that a more concrete administrative approach is required, if only from the perspective of public perception. The conversation thus reflect on the point that there are no mandates or incentives for firms who have operations within the ICT space to adhere to any ISO certifications. To encourage greater trust of users of domestic systems, there was an opinion that the Government should seek to stimulate/ incentivize better standards for ICT in business.

## **(c) Opportunities for fintechs, AI and DLTs**

Each of the stakeholders has strong opinions not only on where AI can be used, but also how this should be adopted to improve overall sector development.

There was consensus that saw AI as introducing radical changes to the way work is done. However, it was also highlighted that as a catalyst for change, is not very well understood. In that regard, to facilitate structured appreciation of the impact of AI, one participant suggested that there be, initially, a focus on digitizing a particular office of Government, as a proof of concept. Thereafter, with experience and a growing body of knowledge and practitioners, efforts can be made towards building a community around any such early successes. Ideally this should be linked with a private sector partner to facilitate the commercialization and exportability of the knowledge and expertise.

All respondents believed that selling this transformation thrust would involve leveraging change management expertise, to create a platform to foster the idea that automation should be adopted as an opportunity for personnel upskilling. Only then is there a belief that people, that is the general public, will support the change.

With respect to DLT, there was a distinct split in opinion on the viability of the platform. On one side, some argued that cryptocurrency and blockchain are a hard sell to the Aruba marketplace. Even divorcing blockchain from the specific cryptocurrency use case, it was felt that there is great skepticism in the use of blockchain, that after the initial hype around the technology, that excitement has since died down. Alternatively, the other side saw opportunity for blockchain, especially for use cases that did not involve cryptocurrency. Indeed, ironically, the use case raised most often was the use of blockchain in a user authentication framework, initially targeted to tourist sector and mitigate fraud. Examples cited included the use of DLT based Contracts for properties sale/ rental. Even then however, it was noted that the use of tokenized assets would require the development of specific infrastructures. Another aspect of blockchain which seemed to rouse interest in proponents was the inherent redundancy in storage infrastructure associated with the use of blockchain.

Both sides did agree that the pushback from established players and regulators about the cryptocurrency and tokenized asset use cases is not unexpected. However, the proponents insisted that the platform could support other applications.

Finally, looking at these challenges through the regulatory context, this group of industry stakeholders broadly accepted areas that as important as putting regulatory frameworks in place, was the sequencing of these introductions. In that regard, it was proposed that, in terms of sequencing:

- There should first be the introduction of GDPR, and the work done to adjust the culture of how business is done, mindful of privacy concerns. The earlier discussion of curating an island-wide movement refers.

- Then there should be the introduction of law similar to the AI Act. There was some divergence here in perspective, where:
  - One stakeholder said that AI Act and its impact is on the forefront on larger clients' requirements for service products, demanding the creation of guidelines to better manage the use of AI.
  - Another stakeholder cited the upcoming milestones of AI Act compliance. In that regard he believed EU is struggling with the implementation of the AI Act, so there should be due consideration of how Aruba approaches the introduction of similar statute.

There was consensus though, that these legislative steps should be taken before pushing these two technologies (DLT and AI). It was agreed that these legislative frameworks would create a robust framework of rules within which the private sector and innovators can operate.

More broadly, it was believed that Government's role is not to be the lead actor. Instead, Government has a role to identify low hanging fruit to achieve quick wins and gain momentum and thereafter be an example advocate: practicing what it preaches. Government should otherwise focus on being an enabler, so that the private sector frontrunners can lead the way.

## 2. Other market participants

### (a) Qredits

#### Who is Qredits?

Begun in Netherlands, Qredits focuses on:

- Businesses Microfinance to SMEs, guiding and coaching to assist business and financial plans, coaching sessions in marketing etc.
- All applications are via website. All its back-office processes are in the Netherlands, only three persons run the business in Aruba. More office oriented in the Caribbean because of cultural norms.
- Market development to prepare entrepreneurs in having the right tools to access its microfinancing services.
- Advises on the best registration modality with the Chamber of Commerce, to facilitate short and medium-term development of the SME.

Qredits' local office licenced by the CBA to operate providing financing up to Afl200,000. However, Qredits' internal limit for start-ups in Afl100,000.

There is a good working relationship with Aruba Bank, complementary business models where when startup Qredits, when the client gets big enough, migrates to Aruba Bank. Indeed, Qredits' main competition are that of its Dutch Head Office are fintechs who provide business microfinancing.

#### Market development

Qredits supports a number of education programmes, as part of its mandate to prepare the market for entrepreneurship. These programmes are all focussed ultimately in assisting participants to gain the skills of developing a business plan, financial plan and the necessary prerequisites to leverage its core, microfinancing business. Notably AI has been included as a topic in their training guidance for two years.

Examples of their market development efforts include:

- Be Your Own Boss (BYOB) is a training product geared for students from ages 14 to 16. Qredits partners with banks and other organizations in hosting the programme annually. The series ends

with a fair and pitch event. BYOB education modality is based on a licensed software platform, supported by a textbook, which is delivered in a classroom environment. Most of the product is mediated online. The implementation partner banks fund the licences for each student. The student enrolment in 2024 was estimated at 400.

- BYOB wants to do a new session with a partner with ICT focus. The major challenge with this programme is the lack of technological resources at schools to facilitate the concept-to-product development aspect of the programme.
- Small Business Academy (SBA) is a programme geared to youths who are 18 years and over. The SBA programme is a 10-week course, which, like BYOB ends with a pitch event. Qredits does not monitor conversion rate from their programme to registered SMEs. The SBA has had multiple partnerships, focusing on different specific industries:
  - Partnership with Aruba Tourism Authority (ATA) and the SBA in the last 3 years, with a programme focusing on entrepreneurship in tourism niche markets. These are branded the Aruba Signature Experience. ATA assists with the marketing via consultancy to support online presence is in accordance with standards. The student enrolment in 2024 was 20 persons.
  - Partnership with the Ministry of Economic Affairs and SBA in the Creating Business Academy. This programme is focused on attracting existing creative entrepreneurs to support their efforts towards structuring business and financial plans. In this programme Qredits did capture demographics of participants. The enrolment in this programme for 2024/ 2025 is 40 persons.
  - Agri-Businesses Academy was a programme held for 12 weeks in 2024. Again, focused on assisting participants in the structuring and business and financial plans. Here too Qredits captured the demographics of participants but also captured crops of interest to ensure diversification of proposals. The student enrolment in 2024 was 60 persons.

Qredits' Social Impact Report has been completed to quantify the impact of its efforts throughout the Dutch Caribbean islands. The Report further contextualises that impact on eight key Sustainable Development Goals (SDGs). In that regard, the Reports identified that, in the Aruban context, Qredits has created over one thousand (1000) in the last seven years).

### III. Conclusions

The stakeholder feedback raised many issues to the fore, particularly regarding the role of the Government in encouraging sector development and pointing to possible intrinsic weaknesses in the current regulatory mix.

A review of Table 3.1 below underscores that the perspectives of stakeholders on the same matter can be drastically different based on the positioning of the stakeholder. It is particularly noteworthy that there is significant divergence in the perspective of the CBA as a regulator, particularly as it looms so large over the economy given its various roles. It is evident that the banking sector exclusively endorses the CBA as transparent, forward-looking and somewhat dynamic. This is contextualised by commentaries that suggests that the CBA consults more closely with banking interests than other industry and sector participants, as well as the robust suite of publications publicly available on CBA's website. The divergence in perspective is also evident regarding the application of necessary AML/CFT regulations on the market. It is noteworthy that the only the banks have no issue with implementation, whereas all other respondents, including other large participants in the financial sector, raised concerns about the proportionality of risk concerns with application of AML/CFT obligations.

It is also noteworthy from a review of Table 3.1, that the lead actors in both:

- Directly addressing the issue of skilled labour supply in the ICT space, as well as
- Ensuring the application of GDPR standards in the wider commercial environment, are industry associations, civil society and smaller participants in the commercial sector.

Finally, a major takeaway from the review of Table 3.1 is the recognition of the need for significant regulatory reform, particularly in the context of institutional development, in areas identified in fintech Aruba Paper 1. Namely, the areas of:

- GDPR advocacy and compliance.
- Cybersecurity, and the reporting and subsequent treatment of events.

- Competition Management.
- Following the lead set by EU's Artificial Intelligence Act.

A notable issue that emerged from the consultation is the need for Aruba to properly introduce competition in the telecommunications sector. The dominance of one party across the integrated value chain of that sector has raised notable concerns in terms of limiting commercial options of consumers and creates an increased risk of single points of failure to key enabling infrastructure. Another aspect of the same issue of market dominance is the evident expansion of Setar to be the single provider beyond telecommunications, but also in the realm of broadcasting and fintech.

Finally, it is widely suggested that any development in these sectors should be primarily export-oriented. Accordingly, there would need to be a review of the regulations associated with the movement of foreign exchange, into and out of Aruba, as this seems to be a major pain point for those firms already engaged in export-oriented knowledge-based services. This is a major cornerstone of CBA's monetary policy function that may need to be given careful review from the perspective of broadened export potential.

**Table 1**  
**Comparison of key themes across participant groups**

<b>Regulators</b>	<b>Industry by sector</b>	<b>Innovators and academia</b>
<b>Economic context</b>		
AML/CFT and KYC compliance are essential to maintain correspondent banking relationships	<p>Intrinsically small market impacts the feasibility of market entry to service Aruba alone.</p> <p>Traditional business interests do not see ICT-based industry as a priority. Highly educated population, however lack of opportunity leads to the "Brain Drain" challenge.</p> <p>Anticipated labour demands in Tourism/ Hospitality will compete for available candidates.</p> <p>Smaller firms are targeting this directly through the introduction of new jobs, outside of hospitality and banking, within the ICT Sector.</p> <p>AML/CFT compliance is the major concern of the banking sector and its regulator.</p>	<p>The private sector and civil society is filling some of the gaps identified in the CBA reports, especially with respect to human capital development. Is it enough?</p>
<b>Regulatory/operational context</b>		
<p>Limited regulatory awareness of ICT sector issues – is there an institutional gap?</p> <p>CBA is the regulatory authority that looms largest over the sector.</p> <p>DTZ has limited scope of oversight of telecommunications sector regulation, which has resulted in an environment that is hostile to innovation.</p> <p>AFTA can provide a big impact to the environment, but its capacity to do so will be limited by its size, and the scope of challenges that need to be addressed.</p>	<p>GDPR to be implemented in Aruba as a <i>sin qua non</i> to further digital development.</p> <p>Financial regulations with respect to 60% domestic investment is widely seen as a constraint to investment and innovation.</p> <p>Banks believe CBA is dynamic in respect of digital business. All other sectors think CBA regulations overly stifling, particularly with regard to: capital requirements for small and medium-sized enterprises (SMEs) one-size fits all application of AML/CFT may be doing more harm than good.</p>	<p>Private Sector forging ahead with export-oriented activity, largely having to work around the regulatory environment.</p> <p>CBA application of AML/CFT regulations overly onerous. Is there over-regulation?</p> <p>CBA approach to regulation of market is opaque to the practitioner.</p>

<b>Regulators</b>	<b>Industry by sector</b>	<b>Innovators and academia</b>
<b>Social context - public access and protection</b>		
Use of cryptocurrencies frowned upon due to heightened AML/CFT risk.	Industry is leading in the compliance to international standards such as EGDPR. However, lack of institutional structure limits public protection.	Implementation of GDPR and AI Act should precede the implementation service sectors in fintech and AI.
Trade in cryptocurrencies fall under the rubric of general foreign exchange regulations.	Strengthening of systems that support competition essential.	There is a need to prepare the market – through adoption of revised approach to privacy as a precursor to developments in fintech, AI and DLTs.
<b>Technological context</b>		
	The completion and deployment of the Unique Digital ID project as a key to e-Government and e-commerce is identified by stakeholders outside of the banking sector.  Implementation of certification authorities in Aruba is critical to e-Government implementation. Lack of Government leadership on Cybersecurity, despite significant Ransomware attacks in the recent past.	Consensus that there is a role and future for fintech and AI in Aruba, Divergence in opinion on the feasibility of DLT/ Blockchains.

Source: Authors' compilation.

This interim report provides a comprehensive overview of stakeholder perspectives on the opportunities and risks associated with the development and administration of fintech, distributed ledger technology and artificial intelligence in Aruba. The Government of Aruba aims to diversify its economy away from its reliance on tourism by developing its information and communications technology (ICT) sector. The report is based on consultations with stakeholders from the public and private sectors, civil society and academia, conducted during an on-site mission in February 2025. Key findings highlight the potential for Aruba to become a base for export-oriented ICT services, leveraging its strong infrastructure and well-trained labour force. However, challenges have also been identified, including regulatory and institutional constraints, limited job opportunities and the risk of brain drain. The report emphasizes the need for a supportive regulatory environment and targeted initiatives to foster innovation and competition in the ICT sector, ultimately contributing to Aruba's economic diversification and resilience.



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