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Beyond Traditions: Swiss Banking's Journey into Digital Assets and Blockchain

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Abstract: Swiss banks are at a pivotal moment as digital assets gain traction, presenting both challenges and opportunities. This study examines how Swiss banks can leverage their internal resources and capabilities to establish a competitive advantage in the digital asset ecosystem. Using the Resource-Based View and the VRIO framework, the study investigates the strategic importance of key services such as custody, staking, and tokenization. Drawing on expert interviews with Swiss banking leaders, the research identifies these services as vital for maintaining Switzerland's financial leadership. Findings suggest that Swiss banks' established reputation for trust, combined with regulatory clarity under the Distributed Ledger Technology Act, creates a strong foundation for digital asset adoption. While digital asset custody services address the growing demand for security, tokenization presents significant growth potential, particularly in real world asset markets. The study concludes that Swiss banks can sustain their competitive edge by investing in blockchain expertise, fostering fintech partnerships, and enhancing educational initiatives. By combining traditional banking strengths with innovative digital asset services, Swiss banks are well-positioned to capitalize on this evolving financial landscape.

Keywords: digital assets; banking; tokenization; staking; custody services; real world assets; RWA; decentralized finance; DeFi; non-fungible tokens; NFTs; business strategy

JEL Classification: G21; G28; E42; O33

1. Introduction

The global ascent of blockchain technology and digital assets is fundamentally transforming financial services, presenting unparalleled opportunities for innovation and efficiency. As a global leader in financial excellence, Switzerland has actively embraced this shift, leveraging its strong regulatory framework and renowned banking tradition to integrate digital assets. The introduction of the Distributed Ledger Technology (DLT) Act, which offers legal clarity for blockchain-based applications, has firmly positioned Switzerland as a trailblazer in this rapidly evolving domain [1].

Swiss banks, however, find themselves at a crossroads, grappling with dual pressures: the imperative to remain competitive against nimble fintechs and crypto-native firms, and the necessity of meeting increasingly sophisticated customer demands for secure and innovative digital asset services. Institutions such as Sygnum, Swissquote, and Maerki Baumann have set exemplary benchmarks, yet many traditional banks lag in fully embracing blockchain technologies and aligning their offerings with the expectations of the market [2–4].

This digital transformation arrives at a pivotal moment. With the global market for tokenized real world assets (RWAs) forecasted to reach USD 16 trillion by 2030 [5], Swiss banks risk forfeiting a monumental opportunity if they fail to adapt swiftly. Moreover, the surging interest in non-fungible tokens (NFTs) and decentralized finance (DeFi) underscores the urgency for these banks to develop

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technical expertise and foster innovation to maintain their leadership in the global financial ecosystem. The global NFT market is projected to expand from USD 17.7 billion in 2021 to USD 125.6 billion by 2027, reflecting a compound annual growth rate (CAGR) of 27.3% [6]. Similarly, the DeFi market is anticipated to grow from USD 20.48 billion in 2024 to USD 231.19 billion by 2030, with a CAGR of 53.7% [7].

In response to these developments, traditional financial institutions are actively integrating blockchain technology into their operations. For instance, JPMorgan has expanded its digital assets unit, Onyx, to manage digital payments and assets, handling USD 1 billion in daily transactions with its stablecoin, the JPM Coin [8].

Consequently, the impetus for this study stems from the need to explore how Swiss banks can effectively leverage their unique strengths- such as their reputation for trust and their expertise in compliance- to navigate this digital revolution. By examining their internal resources and strategic capabilities, this research seeks to offer actionable insights to position Swiss banks at the forefront of the digital asset ecosystem.

Consequently, the central questions guiding this research are twofold: First, this study explores which internal resources and capabilities provide Swiss banks with a competitive advantage in the digital asset ecosystem. Understanding how Swiss banks can optimize their existing strengths, including compliance expertise, operational efficiency, and brand trust, is essential for maintaining their leadership position in the digital asset space. Secondly, this study explores how Swiss banks can develop or acquire the resources needed to sustain leadership in digital asset services. As technological evolution accelerates, banks must evaluate whether internal development, external partnerships, or a hybrid approach offers the most viable path forward in the competitive digital finance landscape.

To understand how Swiss banks can best integrate digital assets into their operations, this study seeks to identify the key internal resources and capabilities that can provide a sustainable competitive advantage. By analyzing the strategic levers available to these institutions, it aims to shed light on the potential pathways for digital asset adoption within the regulatory and operational frameworks of Swiss banking. Furthermore, the study seeks to develop actionable strategies that banks can employ to build the necessary expertise, whether through internal resource development or strategic partnerships with fintech firms and blockchain specialists. By outlining concrete steps for resource acquisition, knowledge expansion, and capability enhancement, this research provides a structured approach for Swiss banks to navigate the evolving digital asset landscape while maintaining their leadership position in the global financial ecosystem.

By addressing these research questions and objectives, this study aims to provide a comprehensive analysis of the evolving role of Swiss banks in digital asset services. Through a resource-based perspective, it examines the fundamental drivers of competitive advantage and offers strategic recommendations that can help shape the future of banking in a blockchain-powered world.

1.1. Blockchain Technology and Digital Assets

Blockchain serves as the foundational technology underpinning cryptocurrencies, tokenized real world assets (RWAs), and NFTs. Its decentralized, transparent, and immutable characteristics enable the emergence of new forms of asset ownership and financial services [9].

Operating as a distributed ledger, blockchain records transactions across multiple nodes, ensuring transparency, security, and immutability [10,11]. By eliminating the need for intermediaries, it reduces transaction costs and enhances operational efficiency [12,13]. Within the realm of financial services, blockchain technology facilitates features such as 24/7 trading, accelerated settlement processes, and improved traceability of assets [14,15].

Moreover, blockchain enables the fractionalization of assets, allowing investors to acquire smaller portions of high-value items, such as real estate or art. This democratization of investment opportunities expands access to previously illiquid markets, as noted by Chen [16]. Additionally,

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smart contracts - self-executing agreements embedded in the blockchain - enhance transaction automation and compliance, mitigating risks associated with errors and fraud [17].

Cryptocurrencies such as Bitcoin1 and Ethereum represent the most prominent applications of blockchain technology. Initially designed as digital payment systems, cryptocurrencies have since evolved into speculative assets and investment tools. Swiss banks, including Swissquote, Valiant Bank, Zuger Kantonalbank and Postfinance have responded to the rising consumer demand by offering cryptocurrency custody and trading services [19]. With approximately 21% of Swiss citizens owning cryptocurrencies (Statista, 2023), this market presents a substantial opportunity for financial institutions. Swissquote, a frontrunner in cryptocurrency adoption, reported over 100,000 crypto clients by 2022, underscoring the potential for Swiss banks to leverage this expanding trend [20]. Nonetheless, the inherent volatility of cryptocurrencies, coupled with regulatory concerns, poses significant challenges that banks must address to sustain consumer trust.

Tokenized Real World Assets (RWA) refer to physical or financial assets, such as real estate or bonds, that are represented as digital tokens on a blockchain. Tokenization of these assets offers several advantages, including improved liquidity, reduced transaction costs, and enhanced transparency [21]. By dividing high-value assets into smaller, tradable units, tokenization democratizes investment opportunities, making them accessible to a wider range of investors [13]. Tokenized RWAs are projected to grow annually exceeding 68% until 2030 [5]. Swiss banks, drawing on their wealth management expertise and robust regulatory frameworks, are particularly well-positioned to lead in this domain. UBS's issuance of tokenized bonds through the Swiss Digital Exchange highlights the early adoption of this transformative innovation [22].

Non-Fungible Tokens (NFTs) are unique digital assets typically linked to art, music, and intellectual property. Unlike cryptocurrencies, NFTs are non-fungible, meaning each token is unique and cannot be exchanged on a one-to-one basis [23]. There is increasing interest in NFTs for applications beyond art, including real estate and luxury goods authentication [24]. Although the NFT market remains in its infancy, its projected massive growth highlights its potential as a significant new revenue stream for financial institutions [6]. However, issues such as intellectual property disputes and market volatility need to be addressed to ensure long-term sustainability [25].

Despite their numerous benefits, the integration of blockchain and digital assets into traditional banking systems presents several challenges. These include the need for advanced technological infrastructure, adherence to complex regulatory requirements, and the education of consumers. The collapse of unregulated platforms like FTX has heightened consumer demand for secure, regulated alternatives, creating a significant opportunity for Swiss banks to fill this void [26,27]. Additionally, the rapid pace of innovation in the digital asset space demands continuous investment in research and development. By leveraging their well-established reputation for security and regulatory compliance, Swiss banks can position themselves as trusted leaders in the digital asset ecosystem [28].

1.2. Products and Services for Digital Assets

Swiss banks have begun to explore and integrate a range of innovative products and services to meet the demands of the digital asset ecosystem. The following paragraphs provide a comprehensive overview of these offerings, emphasizing their growing relevance and strategic potential.

Custody Services are foundational in the digital asset ecosystem, enabling banks to securely store cryptocurrencies and tokenized assets [29]. Swiss banks such as Sygnum [30] and Swissquote [31] have pioneered regulated custody services, leveraging Switzerland's reputation for security and trust. These services provide institutional and retail clients with peace of mind, especially in an environment where cybersecurity risks are prominent.

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[1] While we acknowledge that some notable sources suggest that Bitcoin is not an ordinary cryptocurrency, see e.g. Böhme et al. [18], we label it as such for the discussion in this paper.

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Tokenization Services represent another promising areas for Swiss banks. By converting traditional assets such as real estate, bonds, or art into digital tokens, banks can unlock liquidity and broaden market access [32–34]. Swissquote and UBS have been at the forefront, offering tokenization platforms and issuing tokenized bonds, respectively [22].

Staking and Yield-Generating Services. Staking allows clients to earn rewards by participating in the validation of blockchain transactions [35]. Swiss banks, such as Swissquote, have introduced staking services for assets like Ethereum, enabling clients to generate passive income while maintaining asset custody within a regulated framework [36,37].

Lending Services. Digital asset-backed loans are emerging as a popular product. These services allow clients to use cryptocurrencies or tokenized assets as collateral to secure loans. This offering bridges traditional banking practices with the digital asset economy, providing liquidity without requiring clients to sell their assets [38,39].

Investment Products. Swiss banks are increasingly incorporating digital assets into investment portfolios. Structured products, such as exchange-traded products (ETPs) or exchange-traded notes (ETNs) tied to cryptocurrencies, offer clients exposure to the digital asset market while benefiting from the security and oversight of a traditional bank [40,41].

Advisory and Wealth Management. Advisory services tailored to digital assets are becoming integral to Swiss banks' offerings [42]. These services guide high-net-worth individuals and institutional clients in managing portfolios that include cryptocurrencies, tokenized assets, and NFTs [43]. Tax optimization and estate planning for digital assets are emerging as key areas of focus [44].

Education and Awareness Initiatives. Given the nascent stage of the digital asset market, education is critical. Swiss banks are developing initiatives to educate their clients about blockchain technology, investment risks, and opportunities. These efforts aim to build trust and encourage adoption.[45–48]

Switzerland's banking sector benefits from a robust regulatory framework under the Distributed Ledger Technology Act [49,50]. Early adopters, such as Swissquote and Sygnum, have introduced services including digital asset custody, staking, and lending [31,36,51]. However, most traditional banks lag in fully leveraging digital assets.

1.3. Regulatory Framework

Switzerland's regulatory framework for digital assets and blockchain technology is recognized as one of the most advanced and comprehensive worldwide, playing a critical role in establishing the country as a global leader in the digital asset ecosystem. This section provides a detailed analysis of the DLT Act and associated regulations, with a particular emphasis on their implications for Swiss banks and the broader financial sector. The discussion draws on established sources and industry insights to offer a comprehensive perspective on Switzerland's regulatory landscape and its impact on the adoption and integration of digital assets.

The DLT Act, introduced in 2021, provides a comprehensive legal framework for blockchain applications and digital assets, aiming to ensure legal certainty, promote innovation, and strengthen Switzerland's position as a global financial hub [1,50]. By amending multiple federal laws, the act incorporates provisions specifically tailored to DLT and blockchain-based applications. Its key features include the following three [49]: The first feature is DLT trading facilities. The Act establishes a regulatory foundation for DLT-based trading platforms, enabling the trading and settlement of tokenized securities. This development enables secondary market trading of digital assets, increasing liquidity and encouraging broader market participation. The second aspect concerns the segregation of digital assets in cases of bankruptcy: To safeguard investors, the DLT Act ensures that digital assets held in custody by financial institutions remain the property of the client, not the institution, during bankruptcy proceedings. The third characteristic is the registration of rights: The framework allows for the digital representation of rights, such as shares, bonds, and other financial instruments, enabling their issuance and transfer directly on a blockchain.

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Tokenization presents a transformative opportunity under the DLT Act. By converting RWAs such as real estate, bonds, and commodities into digital tokens, Swiss banks can unlock enhanced liquidity, improved transparency, and broader accessibility for investors. UBS and Swiss Digital Exchange (SDX) have provided such an example: UBS has issued tokenized bonds through SDX, showcasing the potential for institutional adoption and innovation in the tokenization space (Swiss Digital Exchange, 2022).

Custody Services and Security. The DLT Act underpins the provision of regulated custody services for digital assets. Custody is identified as a foundational service for Swiss banks entering the digital asset ecosystem. The act's guidelines ensure security standards in the sense that custodians must meet stringent technical and operational security requirements to safeguard digital assets. Yet it also yields protection to clients as assets held in custody remain client-owned in bankruptcy scenarios, enhancing trust [52].

Anti-Money Laundering (AML) Compliance. Switzerland's Financial Market Supervisory Authority (FINMA) has established clear guidelines for digital asset businesses to ensure compliance with AML regulations. These include transaction monitoring and travel rules. Transaction monitoring on the one hand enhances due diligence and reporting obligations for blockchain-based transactions to prevent illicit activities [53,54]. Travel rules, on the other hand, which are aligned with the Financial Action Task Force (FATF) travel rule, require the exchange of transaction information between counterparties, enhancing transparency and accountability [55–57]. These measures combined effectively address concerns regarding the misuse of digital assets for money laundering purposes and uphold Switzerland's reputation for stringent regulatory oversight.

Switzerland's regulatory framework thus provides Swiss banks with a distinct advantage in establishing themselves as global leaders in the digital asset ecosystem. The DLT Act empowers banks to offer innovative services such as tokenization, custody, and trading of digital assets within a legally secure and compliant environment. By capitalizing on their long-standing reputation for trust and regulatory excellence, Swiss banks can attract a diverse clientele seeking reliable and regulated digital asset solutions.

The DLT Act thus provides a robust framework for tokenization, addressing critical challenges such as compliance with AML and know-your-customer (KYC) requirements, ensuring adherence to global financial standards [1,58]. These provisions empower Swiss banks to offer custody, tokenization, and trading services in a legally secure environment, bolstering client trust and ensuring compliance with regulatory standards.

Swiss banks are increasingly recognizing the need to adapt their services to meet the growing demand for digital assets. For instance, the launch of tokenized bond offerings by UBS and the introduction of cryptocurrency custody services by several cantonal banks highlight the evolving landscape. However, challenges such as technological readiness and consumer education remain significant hurdles to broader adoption [59,60].

1.4. Resource-Based View (RBV)

In analyzing how firms establish and sustain competitive advantages in the evolving financial landscape, this study adopts the Resource-Based View (RBV) as its theoretical foundation. RBV emphasizes that a firm's long-term success depends on its ability to develop and manage internal resources that are valuable, rare, inimitable, and effectively organized. This perspective is particularly relevant in the context of digital asset integration, where firms must leverage unique capabilities to differentiate themselves in a rapidly changing market. The following sections explore the core principles of RBV and apply the VRIO framework to assess the strategic potential of firm-specific resources.

Rooted in strategic management theory, the RBV posits that a firm's sustained competitive advantage is primarily derived from its internal resources and capabilities rather than external market conditions [61,62]. By emphasizing the unique attributes and strategic potential of resources

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within an organization, the RBV provides a robust framework for analyzing how firms can achieve and maintain a competitive edge in dynamic markets.

The VRIO framework is a critical tool within the RBV of strategic management, designed to assess a firm's resources and their potential to create and sustain a competitive advantage. First articulated by Barney [61], the framework evaluates resources against four sequential criteria: Value, Rarity, Inimitability, and Organization. For a resource to provide a sustainable competitive advantage, all four attributes must be satisfied.

A resource is deemed valuable if it enables a firm to exploit market opportunities or mitigate external threats, thereby enhancing customer satisfaction, operational efficiency, or market positioning [63]. For instance, proprietary technology that reduces production costs or improves product quality can enable a firm to compete more effectively. Apple's design capabilities exemplify this principle, consistently delivering products that align with consumer preferences for aesthetics and functionality, resulting in a dominant position in consumer electronics [64].

The rarity of a resource lies in its exclusivity, meaning it is not widely available to competitors [65]. Unique resources, such as Google's search algorithm or exclusive supplier relationships, provide differentiation and prevent competitors from achieving similar levels of value creation. This rarity underpins Google's dominance in the search engine market, driven by its unparalleled data processing capabilities [66].

Inimitability refers to resources that are difficult or costly for competitors to replicate [67]. This can arise from factors such as complex social dynamics, historical path dependency, or causal ambiguity. For example, the reputation of luxury brands like Rolex, rooted in their history, craftsmanship, and prestige, is exceptionally difficult for competitors to duplicate [68] .

Lastly, the organization criterion emphasizes that even if resources are valuable, rare, and inimitable, a firm must have the systems, processes, and leadership in place to fully leverage them. Southwest Airlines exemplifies this by structuring its operations around rapid turnaround times and excellent customer service, aligning its workforce and systems to support its low-cost strategy effectively [69].

To sustain a competitive advantage, a firm must satisfy all four VRIO criteria. However, given the dynamic nature of business environments, continuous reassessment is essential, as the value, rarity, or inimitability of resources can evolve over time, necessitating strategic adaptation [70].

2. Methods

The following sections outline the research design of the study at hand, the data collection method applied, its sampling strategy, data analysis approach, and measures taken to ensure reliability, validity, and ethical integrity.

This study employs a qualitative research design, which is well-suited for exploring complex and evolving phenomena such as digital asset integration and resource-based strategies. Qualitative research provides a deeper understanding of participants' perspectives and contextual insights, which are essential for assessing the strategic use of resources [71].

The data collection process which took place in the second half of 2023for this study employed a multi-method approach, combining qualitative expert interviews, document analysis, and case studies. This triangulation of methods ensured a robust and comprehensive understanding of the strategic role of digital assets in Swiss banking.

Expert interviews with senior-level managers served as the primary data source, leveraging insights from a purposive sample of industry executives, blockchain specialists, and financial analysts. Semi-structured interviews were chosen for their ability to balance structure with flexibility, allowing researchers to explore emergent themes while maintaining consistency across respondents [72]. The interview questions centered on key aspects of digital asset integration, including resource deployment, organizational challenges, and opportunities within the evolving financial landscape.

To complement the primary data, a systematic document analysis was conducted. This involved reviewing secondary sources such as industry reports, academic publications, and regulatory

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guidelines. Notable references included foundational blockchain whitepapers, e.g. Nakamoto [73], Swiss regulatory frameworks for digital assets, e.g. Swiss Federal Council [1], and market analyses assessing institutional adoption trends such as Deloitte [74], Ernst & Young [75], and Fidelity [76]. The integration of these sources facilitated a comprehensive background assessment and provided empirical support for the study's findings.

Additionally, this research examined case studies of organizations that have successfully implemented digital asset strategies. Firms such as Sygnum and Swissquote were analyzed for their pioneering roles in regulated blockchain services [77,78]. These case studies offered valuable insights into best practices and challenges encountered by financial institutions navigating the digital asset landscape. By drawing from real world applications, the study gained a practical dimension that enriched its theoretical framework. Through this multi-faceted data collection approach, the study was able to construct a nuanced and well-substantiated analysis of digital asset adoption in Swiss banking.

Purposive sampling was used to ensure the inclusion of participants with specialized knowledge and relevant experience. This approach targeted individuals in traditional banking, fintech, and blockchain industries, enabling a diverse range of perspectives [79].

An inductive content analysis method was employed to identify recurring themes and patterns in the data. This approach ensures flexibility in coding and categorization while minimizing bias [80]. The analysis was guided by the VRIO framework, which provided a lens for assessing the strategic significance of identified resources.

To ensure reliability, interview transcripts were cross-verified by participants, and coding consistency was maintained throughout the analysis. Triangulation was achieved by comparing findings across interviews, documents, and case studies [81]. Validity was further enhanced through member checking, where participants reviewed preliminary interpretations to confirm accuracy.

3. Results

This section presents the key findings of the study, starting with an overview of the company demographics, providing essential background on the institutions analyzed. The results then summarize insights from expert interviews, highlighting each firm's approach to digital assets, tokenization, and blockchain integration. Finally, the VRIO framework is applied to assess the competitive positioning of these institutions, evaluating their resources in terms of value, rarity, inimitability, and organizational alignment. Through this structured analysis, the study identifies strategic advantages, market trends, and potential challenges shaping the digital asset landscape in Swiss banking.

3.1. Company Demographics and Interview Summaries

This section provides a descriptive analysis of the companies interviewed for this study. This contextual information offers a foundation for understanding how these firms leverage their internal resources and capabilities to integrate digital assets and blockchain-based services. By examining the operational profiles of these institutions, the study establishes a comparative framework to evaluate their competitive strengths and strategic opportunities in the evolving digital asset market.

The following table provides a comparative overview of the seven institutions surveyed.

Table 1. Company Demographics.

Name	Founding Year	Number of Employees	Location	Industry	Focus
Hypothekarbank Lenzburg	1868	~400	Lenzburg, Switzerland	Regional Banking	Custody, APIs for Fintechs

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Maerki Baumann	1932	~100	Zurich, Switzerland	Private Banking	Wealth Management, Tokenization
Swissquote	1996	~900	Gland, Switzerland	Online Banking	Cryptocurrency Trading, Custody
BX Swiss	1884	~30	Zurich, Switzerland	Stock Exchange	Tokenized Securities
Kaleido Privatbank	1995	~50	Zurich, Switzerland	Private Banking	High-Net-Worth Individuals
Sygnum	2018	~150	Zurich, Switzerland	Digital Asset Banking	Staking, Tokenization, Custody
Blockchain Innovation Group	2017	~20	Zug, Switzerland	Blockchain Advisory	Infrastructure, Consulting

This table reports on the company demographics of the entities interviewed for the study.

The subsequent paragraphs present summaries of interviews conducted with key representatives from the aforementioned companies involved in the digital asset space. Each summary outlines the institution's strategic approach to digital assets, including insights into market opportunities, challenges, and recommended business models.

3.1.1. Hypothekarbank Lenzburg

Founded in 1868 and located in Lenzburg, Switzerland, Hypothekarbank Lenzburg is a regional bank renowned for its innovative approach to digital banking services. The bank has embraced digital transformation through initiatives such as APIs for fintech integration and digital asset custody. During the interview, the representative underscored the foundational role of custody services for digital assets in the banking sector, emphasizing regulatory clarity and investor trust as critical enablers. They identified RWAs as the area with the greatest growth potential, driven by increasing institutional adoption. Advisory services, staking, and tokenization were highlighted as essential offerings to meet evolving customer demands. The executive suggested transaction-based revenue models as a means to monetize these services and recommended focusing on strategies to enhance user trust in digital assets.

3.1.2. Maerki Baumann

Established in 1932 and headquartered in Zurich, Maerki Baumann is a private bank specializing in wealth management and bespoke banking solutions. The official highlighted the bank's strategic interest in digital assets, particularly tokenized RWAs. While acknowledging the current challenge of limited liquidity in RWAs, they emphasized the significant growth potential enabled by technological advancements and regulatory developments. Tax guidance, token issuance, and education were identified as high-value services for clients. The representative advocated for a volume-based revenue model for tokenization services, aligning the bank’s success with market

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growth. Collaboration with regulators was recommended to address challenges and build a robust ecosystem for digital assets.

3.1.3. Swissquote

Founded in 1996 and based in Gland, Switzerland, Swissquote is a leader in online banking and trading, including cryptocurrency services. The bank emphasized its pioneering role in retail crypto adoption, driven by strong customer demand for trading and custody solutions. While recognizing RWAs as a growing market segment, the bank acknowledged that cryptocurrencies currently drive significant revenue. Trading platforms, staking, and lending were identified as additional services to enhance customer engagement. The officer highlighted the importance of education and market awareness in driving adoption and recommended secure custody solutions to build trust. The bank's staking rewards-sharing model was presented as an effective strategy for generating revenue while providing value to customers.

3.1.4. BX Swiss

BX Swiss, a Zurich-based stock exchange founded in 1884, provides a platform for trading traditional and digital assets. The interviewed officer emphasized the need for a robust exchange infrastructure to support tokenized securities. RWAs were identified as the most promising asset class for future growth, with liquidity and secondary market development highlighted as key drivers. The respondent also pointed to lending, advisory services, and NFT custody as areas for banking innovation. Challenges such as fragmented market readiness and limited institutional adoption were noted. Trading fees and asset management models were recommended as viable strategies to capitalize on the growing interest in digital assets.

3.1.5. Kaleido Privatbank

Founded in 1995 as AP Anlage & Privatbank and based in Zurich, Kaleido Privatbank is today a boutique private bank focusing on personalized wealth management and blockchain solutions. The representative discussed the bank's tailored approach to high-net-worth individuals interested in digital assets. RWAs were identified as having the greatest scaling potential, alongside the growing relevance of customized blockchain solutions, staking, and research services. Fee-based models for bespoke services were recommended as a means to monetize offerings, while tokenization technology was highlighted as a critical factor for growth. The offical also stressed the importance of securing RWA tokenization processes to build investor confidence.

3.1.6. Sygnum

Established in 2018 and headquartered in Zurich, Switzerland, Sygnum is one of the first digital asset-focused banks to receive regulatory approval. The bank emphasized its leadership in institutional staking and tokenization services. RWAs were identified as the dominant growth area, with their market value significantly outpacing that of cryptocurrencies. The executive highlighted institutional staking, DeFi tools, and yield services as innovative offerings with high potential. Regulatory clarity and technical expertise were cited as critical external factors for growth. Institutional partnership fees were recommended as a sustainable revenue model, and the importance of adapting DeFi models to align with traditional banking frameworks was underscored.

3.1.7. Blockchain Innovation Group

Founded in 2017 and based in Zug, Switzerland, Blockchain Innovation Group specializes in blockchain advisory and infrastructure development. The firm emphasized its role in enabling businesses to adopt blockchain technology. RWAs were identified as a key area for institutional innovation, driven by public perception and security concerns. The representative proposed Blockchain-as-a-Service and consulting as lucrative offerings for banks entering the digital asset

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space. They highlighted the need for partnerships to address technical expertise gaps and enhance blockchain onboarding. Consulting fees and infrastructure licensing were recommended as effective revenue streams to support sustainable growth in digital assets.

3.2. VRIO Framework Analysis

The integration of digital assets into Swiss banking offers valuable insights into the competitive positioning of these institutions through the VRIO framework, which evaluates resources based on their value, rarity, inimitability, and the organization's ability to utilize them. This analysis underscores the importance of strategic resource management in maintaining Swiss banks' leadership in the evolving financial landscape.

The ensuing table presents a summary of the key digital asset services offered by the interviewed institutions. It categorizes services such as custody, staking, tokenization, and advisory, providing a clear comparison of each bank's strategic focus. The table highlights emerging trends and areas of competitive differentiation in the digital asset landscape.

Table 2. VRIO Analysis Overview.

	Value	Rarity	Inimitability	Organization
Hypothekarbank Lenzburg	Custody services address critical customer demand for secure digital asset management. RWAs represent high growth potential due to increased investor interest and institutional adoption.	Fintech APIs and digital asset expertise are rare among regional banks, giving a competitive edge in custody services.	Reputation for trust and compliance built over decades is difficult for competitors to replicate. Regulatory clarity enhances inimitability.	Aligned digital asset strategies leverage trust and regulatory clarity to meet evolving customer expectations.
Maerki Baumann	RWAs offer significant growth driven by regulatory clarity and demand for tokenization. Tax and token issuance services meet complex client needs, adding tailored value.	Specialized knowledge in tax guidance and tokenization services differentiates the bank from competitors. Strong client relationships reinforce exclusivity.	Customized banking solutions and a focus on RWAs create barriers due to the depth of client relationships and tailored offerings.	Volume-based revenue models incentivize organizational focus on scaling tokenization and tax services.
Swissquote	Strong demand for crypto trading and custody due to a large retail client base. Early adoption of staking services boosts revenue streams.	Early entry into retail crypto creates a large and loyal customer base. Unique staking rewards-sharing model attracts specific client segments.	Strong brand presence and early adoption of crypto and staking create first-mover advantages. Operational expertise supports differentiation.	Efficient models for crypto custody and staking enable seamless integration of services, supporting operational goals.
BX Swiss	Tokenized securities add liquidity and facilitate new investment opportunities. NFT custody taps into an	Proprietary infrastructure for digital asset trading is a rare offering in the Swiss market, appealing to institutional clients.	Specialized trading infrastructure requires significant investment and technical know-how, making it difficult to imitate.	Processes for tokenized asset trading are well-structured, supporting market

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	emerging market with high-value potential.			growth and institutional demand.
Kaleido Privatbank	Customized blockchain solutions and RWAs cater to high-net-worth clients. Personalized services are aligned with market trends for bespoke offerings.	Personalized blockchain wealth management and secured tokenization processes are niche services, not widely available.	Secure and bespoke RWA solutions are underpinned by proprietary processes and client-specific approaches, hard to replicate.	Fee-based bespoke services are well-integrated into organizational offerings, reflecting leadership commitment to innovation.
Sygnum	Institutional staking and tokenization meet the needs of professional clients seeking secure and profitable blockchain solutions.	Regulatory approval as a fully digital asset-focused bank sets it apart, combined with deep technical expertise.	Leadership in staking and tokenization stems from advanced technical capabilities and regulatory alignment, both challenging to emulate.	Institutional partnerships and adaptive DeFi frameworks ensure the bank can fully leverage its resources for sustained growth.
Blockchain Innovation Group	Blockchain-as-a-Service aligns with the need for seamless integration of blockchain into businesses. Consulting services support strategic blockchain adoption.	Proven expertise in implementing blockchain solutions for businesses is a scarce and valuable capability.	Established reputation in blockchain advisory and infrastructure development is rooted in years of expertise, creating high entry barriers.	Collaborative partnerships fill technical gaps while the organization capitalizes on consulting and infrastructure expertise.

This table reports on the outcomes of the VIRO analysis applied on the interviewed firms.

3.2.1. Value of Digital Asset Services

Digital asset services, including custody, tokenized RWAs, and staking, represent highly valuable resources for Swiss banks, not only due to their revenue-generating potential but also their role in reinforcing strategic positioning within the financial ecosystem. Custody services have become a fundamental offering as demand for secure digital asset storage grows. The importance of custody is underlined by the increasing institutional participation in digital assets [31,75,76]. Given the vulnerabilities associated with unregulated crypto exchanges and self-custody solutions, the ability of Swiss banks to provide secure, regulated, and insured custody services positions them as essential intermediaries in the digital asset economy (Deloitte, 2021).

Moreover, RWAs have emerged as a transformative segment in asset management and investment banking. The tokenization of real estate, commodities, and corporate debt enhances liquidity, reduces transaction costs, and facilitates fractional ownership, making high-value assets more accessible to a broader investor base [21,82,83]. Boston Consulting Group & ADDX estimate that the RWA tokenization market could reach USD 16 trillion by 2030, with Switzerland positioned as a hub for compliant tokenized asset markets [5]. The RBV literature supports this perspective, as firms that control valuable, non-substitutable resources - such as regulatory expertise in tokenized assets - tend to achieve sustained competitive advantage [61].

Staking services further solidify the role of Swiss banks in digital asset infrastructure. As proof-of-stake (PoS) blockchains continue to replace proof-of-work models due to energy efficiency and

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scalability, institutional investors seek reliable partners to facilitate staking while ensuring compliance with financial regulations [84,85]. Swiss banks, particularly those with banking licenses such as Sygnum and Maerki Baumann, have capitalized on this trend, offering institutional-grade staking services with built-in risk mitigation mechanisms. Their ability to meet compliance requirements under the Swiss Financial Market Supervisory Authority (FINMA) places them ahead of crypto-native competitors lacking such regulatory oversight.

3.2.2. Rarity of Specialized Offerings

Swiss banks distinguish themselves through highly specialized digital asset services, including blockchain integration, tokenization platforms, and bespoke solutions for high-net-worth individuals (HNWIs). The scarcity of such offerings is crucial in establishing competitive differentiation. According to Porter [66], firms that offer unique, hard-to-replicate services gain a sustainable competitive advantage in highly competitive markets. Swissquote's early leadership in retail cryptocurrency trading and Sygnum's institutional staking services exemplify this principle, as these capabilities remain limited among traditional banks globally.

A 2023 study noted that only 55 European banks currently provide direct exposure to digital assets [86]. A 2024 study then yielded insights into the barriers towards crypto adoption with most responding institutions citing pricing volatility followed by security concerns and regulatory uncertainty [87]. This places Swiss banks in an advantageous position, as their regulatory clarity under the DLT Act enables them to offer a broad suite of digital asset services ahead of competitors and Switzerland's banking tradition of discretion, security, and wealth management expertise aligns well with the needs of HNWIs seeking blockchain-based investment products, reinforcing the competitive rarity of services like Kaleido Privatbank's tailored digital asset solutions.

From an RBV perspective, firms derive sustained advantage when they control resources that are valuable, rare, inimitable, and effectively organized [61]. The unique ability of Swiss banks to navigate tokenization regulations, execute cross-border digital asset transactions, and integrate on-chain finance with traditional banking models ensures that their service offerings remain scarce and differentiated. In the context of RWAs, rarity is further reinforced by the lack of comparable banking institutions that have successfully developed secure, compliant tokenization frameworks outside of Switzerland.

3.2.3. Inimitability as a Competitive Barrier

Swiss banks benefit from resources that are difficult to replicate, creating significant barriers to entry for potential competitors. These barriers stem from a combination of regulatory expertise, institutional reputation, and proprietary technologies. In line with RBV literature, resources that are valuable, rare, and inimitable contribute to long-term competitive advantage, particularly when they are embedded in firm-specific historical and institutional capabilities [88].

A critical aspect of inimitability is the regulatory advantage Swiss banks possess. The Swiss DLT Act provides a well-defined legal framework that few other financial jurisdictions have implemented with comparable clarity and depth. This framework enables legally secure tokenization of RWAs, offering Swiss banks a unique competitive advantage that is not easily imitable by banks in less developed regulatory environments [1]. Furthermore, Switzerland's long-standing trust-based banking model reinforces its inimitability, as institutional investors prefer regulated environments that emphasize security and compliance.

Swiss banks also leverage technological exclusivity as an entry barrier. The development of proprietary digital asset trading, staking, and custody platforms requires substantial investment, specialized expertise, and adherence to stringent compliance standards. For example, Swissquote's staking reward-sharing model and Sygnum's integration of DeFi services within a regulated framework create further barriers to imitation. These offerings demand advanced blockchain development capabilities, which are difficult for new entrants to replicate without years of technical refinement and regulatory approval [68].

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Network effects and first-mover advantages further enhance inimitability. Banks that establish early partnerships with DeFi platforms, institutional investors, and blockchain protocols create ecosystem dependencies that competitors struggle to replicate. According to Reed and DeFillippi [67], firms that embed unique processes within complex industry networks make it difficult for new entrants to displace them. The Swiss financial ecosystem has already integrated a broad range of digital asset services, reinforcing its position as a dominant force in the global blockchain landscape.

3.2.4. Organizational Alignment

The ability to strategically align digital asset services within a bank's organizational structure is essential for maintaining long-term competitive advantage. Effective alignment ensures that a firm's resources - whether technological, regulatory, or human capital - are fully utilized to maximize innovation, market adoption, and customer satisfaction [64].

Swiss banks that have successfully integrated digital asset strategies into their core offerings exhibit superior organizational agility. For instance, Hypothekarbank Lenzburg has leveraged fintech partnerships to develop an API-driven approach to digital asset custody and services. This strategy allows seamless integration with external digital platforms, broadening market accessibility. Meanwhile, Sygnum Bank has structured its model to incorporate both centralized banking practices and DeFi innovations, blending security with blockchain-based automation. These examples demonstrate the RBV principle that firms that effectively organize their valuable, rare, and inimitable resources sustain their market position despite rapid technological change (Barney, 1995).

To optimize organizational alignment, Swiss banks are collaborating with fintech firms and blockchain infrastructure providers to close internal capability gaps. According to Murinde, Rizopoulos [89], banks that integrate external fintech solutions can accelerate digital asset adoption and maintain a competitive edge. Moreover, a study by Accenture (2023) highlights that traditional banks leveraging external blockchain partnerships achieve 30% faster adoption rates compared to those relying on in-house development. This supports the RBV perspective that effectively structured resource utilization leads to long-term strategic advantage.

Finally, Swiss banks must align their tokenization strategies, staking services, and blockchain-based lending products with flexible, modular banking infrastructures. This will allow them to swiftly adapt to market changes, regulatory developments, and evolving customer demands, ensuring sustained leadership in digital assets. Continuous investment in training and digital expertise will further strengthen Swiss banks' ability to maintain organizational efficiency while navigating the rapidly evolving digital asset landscape [64,70].

4. Discussion

Swiss banks' leadership in the digital asset ecosystem is underpinned by their ability to leverage valuable, rare, and inimitable resources effectively. Their reputations for trust and regulatory compliance, combined with early investments in digital asset infrastructure, position them as key players in this emerging market. However, gaps remain, particularly in technical expertise and organizational readiness. To address these, banks must invest in blockchain education and research, build strategic partnerships, and expand their focus on high-growth areas such as RWAs.

The strategic alignment of resources and organizational priorities will be pivotal in maintaining Swiss banks' competitive edge in the global digital asset ecosystem.

The integration of digital assets into Swiss banking, as outlined in this study, aligns with and extends existing literature on financial innovation and competitive advantage in the financial services sector. Prior research has long emphasized that a firm's ability to leverage technological advancements determines its success in evolving markets [61,66]. This study corroborates these findings by demonstrating that Swiss banks' early adoption of blockchain technology, combined with their regulatory expertise and reputation for trust, provides them with a strategic advantage in digital asset services. However, it also highlights critical gaps in technological capabilities that have not been sufficiently addressed in prior literature.

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A fundamental tenet of the RBV is that sustained competitive advantage arises from the control of valuable, rare, inimitable, and well-organized resources [61,88]. This framework has been widely applied to banking innovation, particularly in assessing the role of intangible assets such as regulatory knowledge and customer trust [64]. Our findings support this perspective, reinforcing that Swiss banks' leadership in digital assets is underpinned by their ability to navigate complex regulatory environments while ensuring security and compliance. However, in contrast to studies that suggest RBV-based advantages are self-sustaining [70], our research indicates that without continuous investment in blockchain expertise and fintech partnerships, these advantages may erode over time.

Furthermore, previous research has extensively examined the role of fintech firms in driving financial sector disruption [90,91]. While much of the literature views fintechs as competitors to traditional banks [92–94], our study aligns with recent arguments that successful incumbents increasingly embrace collaboration rather than competition [95,96]. The findings indicate that partnerships between Swiss banks and fintechs can serve as a mechanism to close capability gaps, particularly in blockchain development and tokenization infrastructure. This stands in contrast to earlier assumptions that regulatory compliance alone would provide a sufficient barrier to entry for fintech challengers [97–99].

Concerning tokenization, this study builds upon prior work that projects exponential growth in the market for tokenized RWAs [5]. While previous analyses have largely focused on the theoretical benefits of tokenization - such as enhanced liquidity and fractional ownership [16,21,33] - this study contributes by emphasizing the practical challenges of integrating tokenized assets within the existing banking framework. Swiss banks' success in tokenization will ultimately hinge on their ability to provide seamless integration with traditional financial products, a challenge that has not been thoroughly explored in existing literature.

Finally, this study provides new insights into the role of staking and yield-generating services within traditional banking, a topic that remains underexplored in financial research. While staking has been widely discussed in crypto-native environments, its incorporation into regulated banking models is a recent phenomenon. The findings suggest that Swiss banks have an opportunity to leverage their regulatory credibility to offer institutional staking services, differentiating themselves from decentralized competitors [100,101]. However, regulatory uncertainty surrounding staking remains a potential constraint, warranting further investigation.

In sum, this study validates and extends existing literature by demonstrating that Swiss banks' strategic positioning in digital assets is a function of both their traditional strengths, such as regulatory expertise, and their ability to adapt to emerging technologies. While prior research has emphasized the theoretical advantages of blockchain and tokenization, our findings underscore the practical considerations necessary for successful implementation. Future research should continue to explore the evolving interplay between traditional banks, fintechs, and decentralized financial models to better understand the sustainability of Swiss banking's competitive advantage in digital assets.

4.1. Implications

The findings of this study carry significant implications for Swiss banks as they navigate the evolving digital asset ecosystem. A key takeaway is that banks can leverage their established reputation for trust and compliance to dominate custody and tokenization services. Unlike crypto-native firms, which often struggle with regulatory challenges, Swiss banks are well-positioned to offer legally secure and institutionally trusted digital asset solutions. This advantage provides an opportunity to attract institutional investors who seek stability and compliance in digital asset markets.

Additionally, this study reinforces the growing necessity of collaboration between Swiss banks and fintech firms. While banks possess strong regulatory frameworks and client trust, they often lack the technical expertise needed to scale blockchain-based services effectively. Strategic partnerships

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with fintech firms can bridge this gap, accelerating innovation and enabling Swiss banks to remain competitive in an industry increasingly shaped by technological advancements. Prior research has already highlighted the role of fintechs in fostering financial sector innovation (Schueffel, 2016), and this study confirms that an integrated approach - combining traditional banking strengths with fintech agility - will be critical for long-term success.

Moreover, this study underscores the urgency of investments in blockchain education and research and development (R&D). As blockchain technology continues to evolve, the financial sector must adapt to keep pace with emerging innovations. Banks that fail to invest in internal expertise risk falling behind more technologically agile competitors. Dedicated R&D initiatives focused on tokenization, smart contracts, and DeFi will enable Swiss banks to proactively shape market developments rather than react to them. Institutions such as Sygnum and Swissquote have already demonstrated the benefits of embracing digital assets early, and further investments in this area will ensure sustained leadership in the sector.

In summary, Swiss banks have a unique opportunity to establish themselves as global leaders in digital asset services. However, realizing this potential requires a multifaceted strategy that combines regulatory expertise, fintech collaboration, and investment in blockchain innovation. By capitalizing on these areas, Swiss banks can secure their competitive advantage and drive the next phase of financial sector transformation.

4.2. Limitations and Future Research

However, it is important to acknowledge the limitations of this study. Given its qualitative design, the generalizability of findings remains constrained [102]. The reliance on expert interviews means that insights are subject to individual perspectives, which may not fully capture broader industry trends. Future research should complement these findings with quantitative analyses to assess customer adoption rates, financial performance impacts, and market penetration metrics. Additionally, while this study focuses on Swiss banks, comparative studies examining digital asset adoption in other jurisdictions could offer deeper insights into global competitive dynamics.

Lastly, the regulatory landscape for digital assets remains fluid, and banks must actively engage with policymakers to shape future frameworks. By leveraging their regulatory expertise, Swiss banks can contribute to the development of industry standards that balance innovation with risk management. Clear regulatory guidance will not only enhance market confidence but also provide a stable foundation for long-term growth in digital asset services.

While this study provides a structured analysis of the digital asset strategies available to Swiss banks, several avenues for further investigation remain. First, and as mentioned afore, empirical research quantifying the financial impact of digital asset adoption - measured through revenue growth, market share expansion, and customer adoption rates - would provide valuable insights into the sustainability of digital asset strategies. Understanding the extent to which custody, staking, and tokenization services contribute to banks' profitability would enable a more granular assessment of their long-term viability.

Second, a comparative analysis of global regulatory approaches could shed light on best practices for Swiss banks navigating cross-border digital asset operations. While Switzerland's regulatory framework is among the most advanced, the evolving stance of international regulatory bodies, such as the European Central Bank and the U.S. Securities and Exchange Commission, may influence how Swiss banks structure their digital asset services in the coming years.

Finally, further research should explore the long-term implications of DeFi on traditional banking institutions. As DeFi protocols gain traction, Swiss banks will need to determine whether they should integrate these solutions within a regulated framework or develop competitive alternatives that maintain the principles of decentralization while offering the security and oversight expected by institutional clients.

By integrating these dimensions into future research, Swiss banks can refine their digital asset strategies and continue leveraging their unique strengths to secure their place in the evolving

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financial landscape. The transformation of banking through digital assets is still in its early stages, but Swiss financial institutions are well-positioned to play a leading role - provided they proactively adapt to the challenges and opportunities that lie ahead.

5. Conclusions

The rapid evolution of digital assets presents both opportunities and challenges for Swiss banks. This paper has demonstrated that while Swiss financial institutions possess significant competitive advantages - rooted in regulatory clarity, trust, and operational expertise - the extent to which they can translate these advantages into sustained leadership in digital assets remains contingent on their ability to adapt strategically.

This study sought to answer two central questions: (1) Which internal resources and capabilities provide Swiss banks with a competitive advantage in the digital asset ecosystem? and (2) How can Swiss banks develop or acquire the resources needed to sustain leadership in digital asset services? The findings suggest that the foremost resources underpinning Swiss banks' leadership include their well-established reputation for trust, robust regulatory framework, and expertise in compliance. These attributes serve as valuable assets in an environment where digital asset security, legal certainty, and investor confidence remain paramount. Among the most critical capabilities identified is the ability to offer institutional-grade custody services, a function that aligns seamlessly with Swiss banks' legacy of financial security. Additionally, tokenization of RWAs is poised to become a defining factor in differentiating Swiss financial institutions from their global competitors. However, while these capabilities provide a distinct advantage today, they are not immune to disruption. The digital asset landscape is characterized by a rapid pace of innovation, necessitating ongoing investment in blockchain expertise, infrastructure, and collaborative ecosystems.

The second research question underscores the need for strategic resource acquisition. While Swiss banks can leverage their existing strengths, they must also address capability gaps - particularly in blockchain development and DeFi integration. Strategic partnerships with fintech firms emerge as a practical means of acquiring such expertise, allowing Swiss banks to remain at the forefront of innovation without overextending internal development resources. Likewise, investments in training programs and regulatory advocacy will be crucial in ensuring that Swiss banks retain their leadership position in a landscape shaped by shifting compliance requirements and evolving customer expectations.

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