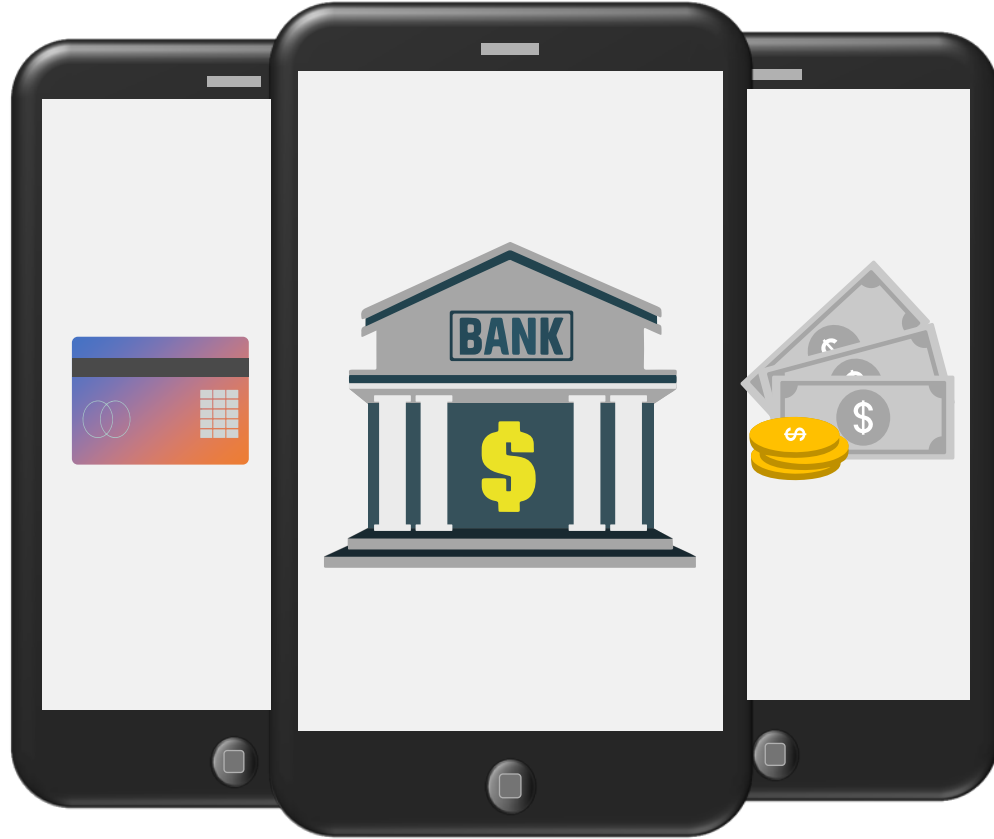


European Dimension in International Finance: Focus on digitalization and sustainability

Digital Finance

Part I. Digital Finance

What is digital finance?



Digital finance is the term used to describe the impact of **new technologies** on **the financial services** industry. It includes a variety of products, applications, processes and business models that have **transformed** the **traditional way** of providing **banking** and **financial services**.

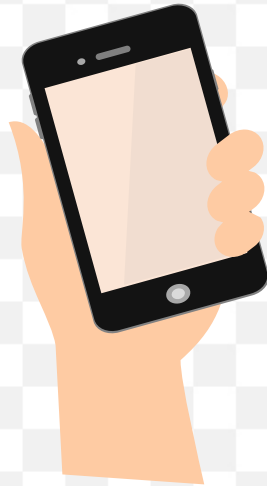
Expected learning outcomes



1 Understanding of the nature of digital revolution in finance

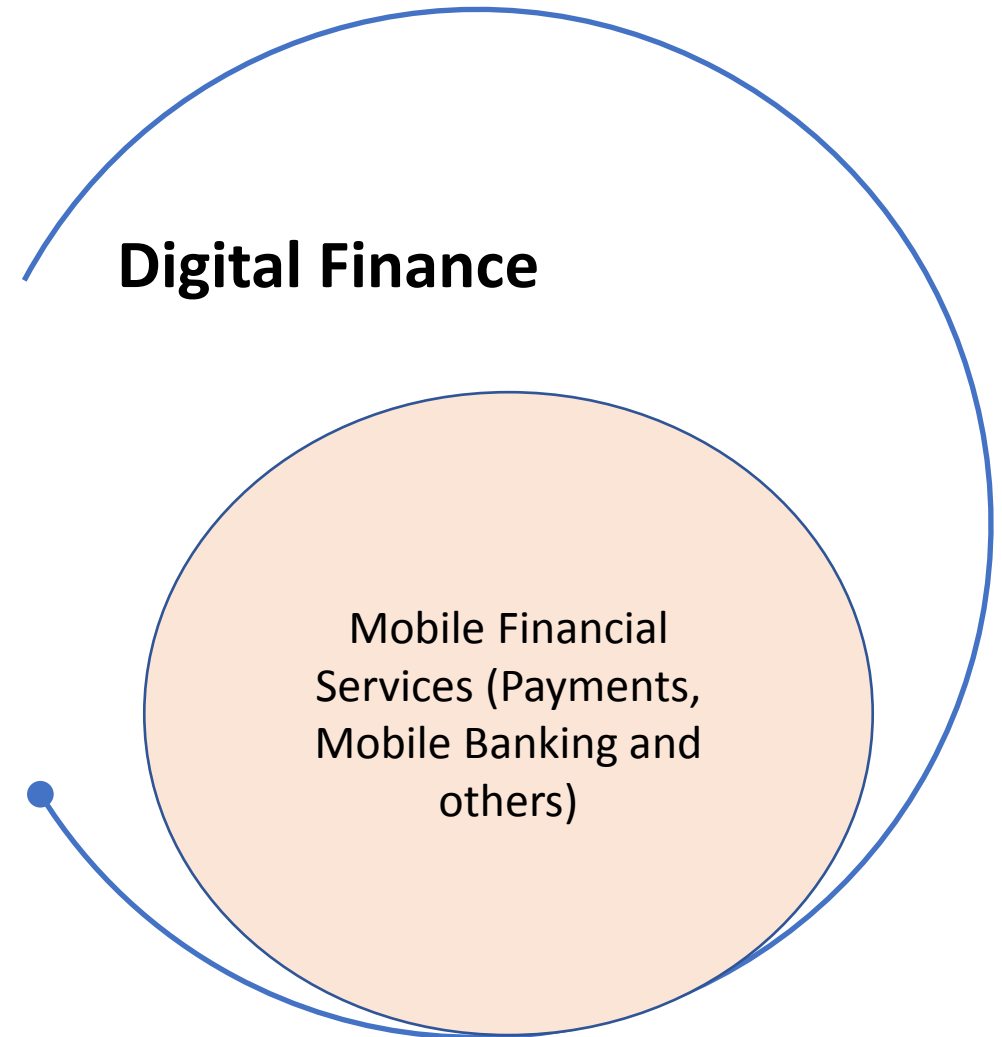
2 Knowledge of key digital technologies and products

3 Understanding of the customer behavior in digital environment

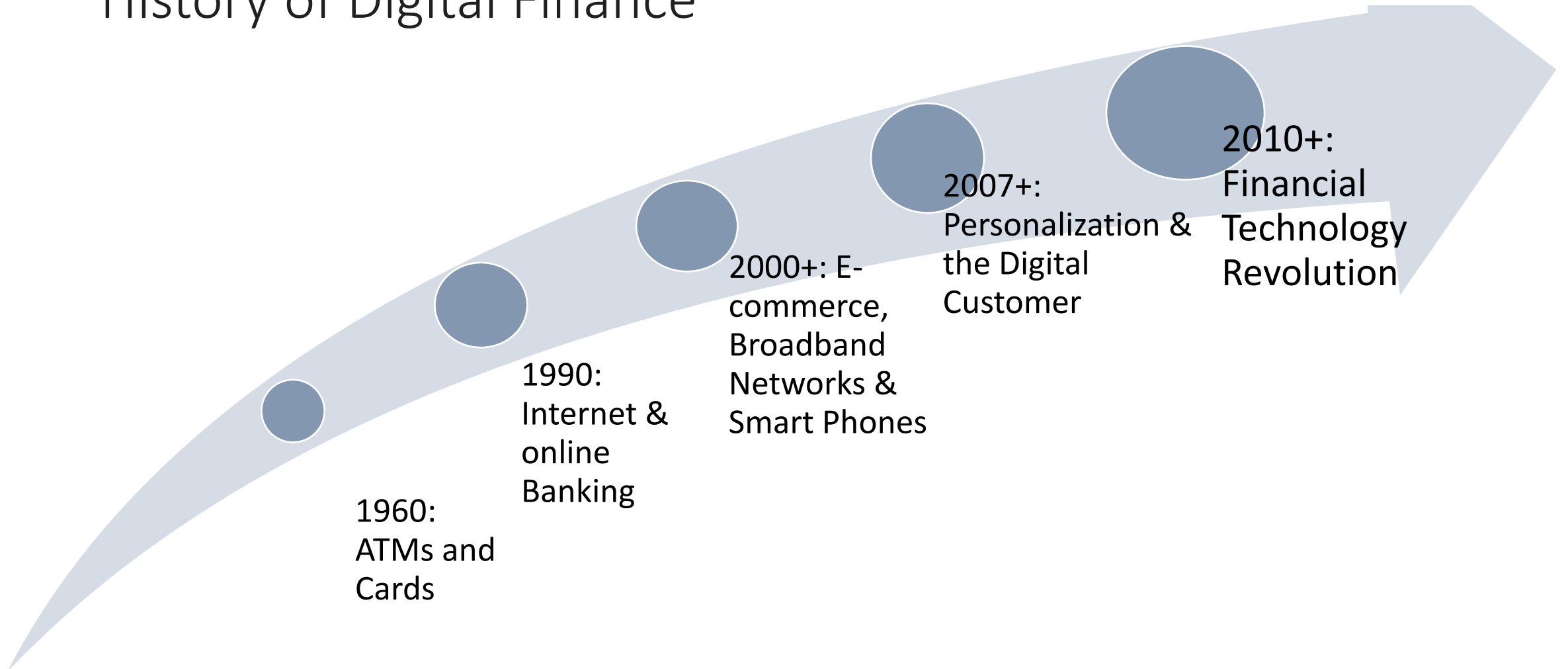


Digital Finance Services overview

- 1** Branchless Banking
- 2** Internet Banking
- 3** Mobile Money and Mobile Financial Services
- 4** Cryptocurrencies



History of Digital Finance



Digital Finance: Benefits for Institutions



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BUSINESS EFFICIENCY & PRODUCTIVITY:

- Internal functions made more efficient resulting in accelerated productivity

COST SAVINGS:

- Increased automation and fewer manual and error prone tasks
- Digital Branches have way less operational costs than traditional branches

INCREASED ACCURACY:

- Digital tasks are more accurate
- Business process reengineering for efficiency and regulatory compliance

DIGITAL CUSTOMER DRIVEN OPERATIONS:

- CRM for financial institutions enables targeted marketing and lowers costs for attracting customers
- Loyalty and customer satisfaction improvements that reduce churn rates

GREATER AGILITY:

- Faster detection of risks
- Easier and more flexible responses to market pressures

IMPROVED SECURITY:

- Increased protection against cyber and physical security attacks
- Customer and data protection

Importance of Digital Finance Services

- **Accessibility:** Traditional Financial Services are inaccessible to many people (especially poorer countries)
- High costs of Bank Branches
- Complex documentation required
- Banking products and experience not designed for low income customers for the banks
- Technology can lower outreach and operations' costs
- Lower transaction costs and lower Agency costs
- Low cost of infrastructure translate to high access and scalability
- Digital Finance Services are very appealing to millennials and the younger generation

Fintech is just technology that is used to improve the delivery of financial services





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Digital financial landscape: Providers, products, and services

Table 1. Evolution of financial products and services via digitalization

Financial services	Traditional products and services	New digital products and services
Payments and transfers	<ul style="list-style-type: none"> ▪ Cash/ATM ▪ Check ▪ Wire/MTO ▪ Debit/Credit cards 	<ul style="list-style-type: none"> ➤ Mobile payments, mobile money, mobile PoS ➤ Peer-to-peer (P2P) payments ➤ Business-to-business (B2B) transactions ➤ Digital wallets, e-wallets, mobile wallets ➤ Digital money, virtual currencies
Savings and investments	<ul style="list-style-type: none"> ▪ Bank deposits ▪ Mutual funds ▪ Bonds ▪ Equities 	<ul style="list-style-type: none"> ➤ Mobile banking ➤ Micro-saving and micro-investing apps ➤ Mobile market funds ➤ Blockchain stocks and bonds ➤ Online brokers ➤ Mobile trading ➤ Crowdfunding or equity crowdfunding ➤ Social trading
Borrowing and financing	<ul style="list-style-type: none"> ▪ Bank loan ▪ Microcredit and microloans ▪ Bonds ▪ Mortgages ▪ Trade credit 	<ul style="list-style-type: none"> ➤ Crowdsourcing and alternative financing ➤ Crowdfunding (crowdlending, P2P lending, social lending) ➤ Online business lending ➤ Blockchain bonds ➤ Electronic or e-leasing ➤ Electronic or e-invoicing ➤ Electronic or e-factoring
		<ul style="list-style-type: none"> ➤ Credit scoring and modeling
Risk management	<ul style="list-style-type: none"> ▪ Insurance ▪ Brokerage underwriting ▪ Structured products ▪ Trading regulation ▪ Compliance KYC 	<ul style="list-style-type: none"> ➤ Digital or e-insurance ➤ Peer-to-peer (P2P) insurance ➤ Social insurance (Friendsurance) ➤ Online business insurance ➤ Smart contracts ➤ Regtech, Suptech

Payments and transfers

- Mobile money
- Digital wallets (or e-wallets or mobile wallets)
- Peer-to-peer (P2P) or business-to-business (B2B)
- Digital money

Mobile money is a digital technology that can be used to deposit or withdraw funds, pay bills, or transfer funds between financial accounts or people using a mobile phone. Mobile money is unique from other DFS because of its strong linkages to a wide range of collaborators, spanning mobile network operators (MNOs), fintechs, banks, nonbank financial institutions, retailers, governments, and so on

Peer-to-peer (P2P) or business-to-business (B2B) payment tools are another subcategory of digital payments, which allow clients to easily send money to retailers or family and friends. Examples include PayPal and Venmo, which are non-bank centric models where individuals instruct a non-bank intermediary to transfer funds to another party. However, to use these services, clients must register using their bank account information, which can exclude those without an account and can also raise security concerns if the service provider has not yet established themselves.

Digital wallets (or e-wallets or mobile wallets) offer customers a means of storing money digitally on a mobile device. They are digital versions of a physical wallet made accessible typically via a smartphone or other smart device

Digital money (or digital currency, virtual currency, or e-money) has also garnered considerable attention in recent years. Note that digital payments refer to electronic payments using traditional fiat currencies, whereas digital money refers to newly established digital currency that is a virtual medium of exchange independent of fiat currencies. Unlike traditional money, digital money exists only virtually. There is no central issuer (e.g., a central bank). Instead, the currency is based on a decentralized autonomous network. For example, a cryptocurrency is a digital currency that can be used to buy goods and services based on blockchain technologies, which is an online ledger system with strong cryptography to secure online transactions

Savings and investments

- Mobile banking
- online brokers or “e-brokerages”
- online stock trading companies
- Crowdfunding or equity crowdfunding

Savings and investments

Mobile banking, as well as micro-saving and microinvesting applications such as Acorns and Qapital. Acorn members can invest their spare change in a diversified portfolio to grow their wealth. Qapital is a free micro-savings app that is designed to motivate users to save money in small increments by gamifying their spending behavior. Specifically, it directs users to set savings goals and then moves money from the user's checking account to a separate savings account when certain daily activities are completed

online brokers or “e-brokerages” where clients can invest in the securities markets directly. Clients use a digital platform and specialized trading software provided by the firm to buy and sell securities and to obtain investment information.

online stock trading companies make it easy for both novice and sophisticated investors to participate in the capital markets using a mobile investment app

Crowdfunding or equity crowdfunding is yet another example of how digitalization is changing the investment markets globally. Crowdfunding is a type of crowdfunding used by private companies to raise money and capital online. The company sells securities to online investors via an online crowdfunding platform. Businesses, especially start-ups and early-stage companies, can use it instead of relying on a bank or establishing a corporation

Risk management

- Digital insurance is commonly defined as any insurance company that relies heavily upon digital technologies to sell and manage insurance policies and to interface with its clients
- peer-to-peer (P2P) insurance a group of individuals (or policyholders) create a risk sharing network and pool their premiums together to insure against potential risk. If the pool of premiums is insufficient to pay for the claims of its members, the P2P provider pays the excess from its retained premiums and reinsurance. Conversely, if the pool exceeds the amount paid out in claims, the "excess" or "profit" is given back to the pool as a cash-back bonus or as a payout to a cause the pool members care about.
- Digital IDs and e-KYC processes have also revolutionized how financial institutions are able to electronically verify the credentials of their customers. The most well-known example of digital IDs and e-KYC can be found in India. technology applications are regularly used to support compliance and reporting requirements by regulated financial institutions

Digital delivery of financial advice



Virtual advisors

- In the post-pandemic environment, financial advisors have seized on the power of virtual platforms (such as Zoom, Microsoft Teams, among others) to facilitate “in-person” contact with clients remotely . From the practitioner perspective, estimates have shown that switching to a virtual model can reduce costs by as much as 40% to 50% and created an opportunity to reach client groups that they have previously found difficult to attract and serve – in particular, younger clients and those with assets between \$100,000 and \$1 million USD

Robo and hybrid advisors

- The financial industry has also seen the emergence of robo-advisors, which deliver and execute financial advice and investment management services using algorithms on digital platforms (Gerlach & Lutz, 2021; Iannarone, 2018; Tertilt & Scholz, 2018). The algorithms automatically allocate, manage, and optimize clients' investment portfolios according to their risk preferences and desired rates of return

Personal finance communities

- Finally, it is important to acknowledge the increasingly important role that social networks are playing in the transmission of financial advice and the adoption of new DFS and fintech. The use of such social networks facilitates interaction among buyers and sellers, while also improving financial literacy and inclusion

DFS and financial inclusion

Financial inclusion is most often defined as having universal access to a full range of safe, secure, and affordably priced financial products and services

Demand-side constraints have been associated with:

- (1) high service fees and costs,

- (2) the distance to financial institutions,

- (3) lack of personal identification and other required documentation, and

- (4) emotional barriers related to financial confidence and trust in the financial industry

Supply-side problems have been related to:

- (1) high operating costs,

- (2) the continued usage of legacy business models,

- (3) information asymmetries,

- (4) gaps in geographical coverage, and

- (5) lack of competition and innovation

High-level principles of Financial Inclusion



Customer expectations about Financial Services

Personalized

Personalized services involve providing individualized services to meet each customer's individual needs:

- ✓ tailored advice and recommendations
- ✓ arranging exclusive events or experiences
- ✓ creating personal messages
- ✓ any other way of tailoring an experience for a customer

Mobile

Allowing customers to access or interact with the service on their device, such as mobile checkout, mobile banking, mobile payments, and mobile applications.

The mobile features of a service should be designed to offer a convenient and easy-to-use experience for customers.

Customizable

Customizable services are services that can be tailored to meet the needs, wants and desires of a particular customer or client:

- ✓ customized in terms of the product or service being offered
- ✓ the way the product or service is delivered
- ✓ (the pricing structure, additional add-on options, and more)

Accessible

Accessibility of services refers to the availability and ease of use of services by all users regardless of their physical, sensory, linguistic, cognitive, or economic abilities.

- ✓ making sure physical and digital environments
- ✓ designed in an inclusive manner to allow everyone to access and use goods, services and programs
- ✓ removing barriers to access and meeting the needs and preferences of individuals.



Financial literacy



Digital financial literacy

Lyons and Kass-Hanna (2021) lay out a multidimensional framework for digital financial literacy that identifies five core dimensions:

- basic financial knowledge and digital skills;
- awareness of available DFS;
- practical know-how of how to use and operate DFS applications;
- ability to make appropriate financial decisions within the digital context; and
- self-protection from online scams and frauds

DFS and regulatory challenges

DFS regulation seeks to strike a balance between:



stimulating innovation
and competition
among existing and
new DFS providers;

ensuring customer
protection and trust

Fintech regulation focuses on two areas of digital financial solutions:

- digital banking operations
- and digital advisory services

DFS and regulatory challenges

While a few jurisdictions have designed specific regulatory frameworks for digital banks and related activities, they still follow requirements that are similar to those for traditional banks.

When it comes to regulating the entry of non-bank DFS providers (e.g., fintechs, start-ups), authorities may:

require a partnership with a bank;

grant a special license of financial service provision to start-ups and companies' subsidiaries; or

grant a license to non-financial sector entities

DFS and regulatory challenges

On the consumer protection front, regulators are working to improve on the DFS delivery side the following:

the electronic disclosure of terms and conditions related to DFS,

the security of electronic funds and transactions,

DFS providers' responsibilities and liabilities, and

consumers' recourse mechanisms in the event of fraud, scams and bad business practices

Digital advisory services

Traditional goals of the regulation of intermediaries revolve around ensuring:

- competence of intermediaries to provide appropriate advice and related services;
- honesty with customers through disclosure
- suitability of the financial advice or service recommended to the client