

Mercati, infrastrutture, sistemi di pagamento

(Markets, Infrastructures, Payment Systems)

Fintech Classification Methodology

by Alessandro Lentini, Daniela Elena Munteanu and Fabrizio Zennaro





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The views expressed in the papers are those of the authors and do not necessarily reflect those of the Bank of Italy.

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FINTECH CLASSIFICATION METHODOLOGY

by Alessandro Lentini, Daniela Elena Munteanu and Fabrizio Zennaro*

Abstract

Since 2017, Banca d'Italia has been supporting and monitoring the Fintech sector, establishing Canale Fintech and Milano Hub and contributing to the launch and operation of the Regulatory Sandbox. These tools aim to provide an environment conducive to experimentation, with the ultimate goal of promoting responsible innovation.

In this context, it is important to define a taxonomy to classify the different actors and services present in the Fintech landscape.

The work proposes a taxonomy in line with international standards, with which it compares itself and articulated along two dimensions: services and technologies.

After describing the criteria adopted for the classification, the paper presents some examples that show how it also captures the 'vertical' dimensions of Fintech (e.g. technologies used, target market).

JEL: O30.

Keywords: fintech, classification, taxonomy, sectors, activities, technology, innovation.

Sintesi

Sin dal 2017 la Banca d'Italia ha avviato un'attività di supporto e monitoraggio del settore Fintech, istituendo Canale Fintech e Milano Hub e contribuendo all'avvio e al funzionamento della Sandbox Regolamentare. Questi strumenti hanno l'obiettivo di fornire un ambiente favorevole alla sperimentazione, col fine ultimo di promuovere un'innovazione responsabile.

In questo contesto, è importante definire una tassonomia che consenta di classificare i diversi attori e servizi presenti nel panorama Fintech.

Il lavoro propone una tassonomia in linea con gli standard internazionali, con i quali si confronta e articolata su due dimensioni: i servizi e le tecnologie.

Dopo aver descritto i criteri adottati per la classificazione, il lavoro presenta alcuni esempi che mostrano come essa consenta di cogliere anche le dimensioni 'verticali' del Fintech (es.: tecnologie utilizzate, mercato di riferimento).

^{*} Banca d'Italia, Directorate General for Payments and Market Infrastructures.

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Il lavoro propone una tassonomia in linea con gli standard internazionali, con i quali si confronta e articolata su due dimensioni: i servizi e le tecnologie.

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I. Foreword¹

1.1 Critical issues related to the description of the Fintech phenomenon

Technological evolution has induced a profound transformation of the banking, financial, payment and insurance worlds, deeply affecting traditional activities such as the collection of savings, the granting of credit, financial investment advice and support, and insurance activities. This evolutionary process, characterised by a variable pace and intensity depending on the contexts observed, has led to the offer of new products and services. The pervasive use of technology, together with the development of new forms of regulation, contributes to the ongoing transformation of the ways in which the financial industry operates, collaborates and relates with its customers, regulators and technology providers. The diffusion of such innovations may originate from the entry into the market of technology start-ups, non-financial Bigtechs or may be a response to changes in traditional companies already operating in the financial sector, such as banks or other financial intermediaries ('incumbents'). It has become customary to refer to this set of transformations as 'Fintech' (short for Financial Technology) even if, depending on the contexts of reference, the phenomenon is declined with different meanings. For the purposes of this work, 'Fintech' is considered to be 'financial innovation made possible by technology, which may take the form of new business models, processes or products, producing a decisive effect on financial markets, institutions, or the supply of services'² (Financial Stability Board, 2017).

The advent of Fintech is bringing a radical transformation to the traditional financial services industry, catalysing innovation and reshaping the customer experience. This phenomenon entails increased competitiveness and the creation of new products and services at lower costs³. Accessibility, a key element of Fintech solutions, takes the form of digital platforms for real-time financial management, with transparency on costs and conditions. The relevance of Fintech is articulated in: financial accessibility and inclusion, through mobile banking apps and digital payments; efficiency and cost reduction, with automation and advanced technologies; personalisation of services, with data analysis and artificial intelligence; innovation and competition, through new entrants (World Bank, 2023; WEF, 2024; BIS, 2021).

Although Fintech is a globally recognised and widely discussed phenomenon, there is a certain difficulty in identifying a univocal and internationally shared definition; the term Fintech is in fact used to indicate both the provision of services in an automated form and the use of new technologies to increase the efficiency of the financial system, making the boundary between

¹ The contribution refers to the Fintech Division of the Retail Payment Instruments and Services Service, as well as to colleagues from the Banca d'Italia and IVASS who participate in the Fintech Committee's steering committee, to the members of the working group on "Fintech Classification Methodology" set up within the Statistics Committee (see list at the end of the document). We also thank the anonymous referee for the suggestions.

 $^{^2}$ This definition focuses on innovations in the way financial services are offered rather than innovations in technology, avoiding the potential exclusion of innovative financial services from the fintech perimeter even if they are based on technologies that are not necessarily among the latest.

³ For more information see 'Fintech Survey in the Italian Financial System' (Banca d'Italia, 2024).

the two spheres often uncertain⁴; the consequence is the lack of a shared classification of the new products and services offered on the market, as well as a clear definition of 'Fintech operators'. Thus, while on the one hand there is a common language, represented by a taxonomy of individual services and technologies, which is used for a qualitative description of the phenomenon, on the other hand there is a difficulty in the quantitative measurement and representation of the market, the latter depending on the classification methodology used in the taxonomy itself.

The need for an unambiguous classification has been repeatedly discussed by various international institutions, e.g. in the *Irving Fisher Committee* report, which introduced it as one of the 'Fintech data issues' (BIS IFC, 2020 No.10), while the Financial Stability Board (FSB) highlighted the importance of a common taxonomy, proposing one of the first attempts to categorise Fintech activities (FSB, 2017). The Organisation for Economic Co-operation and Development (OECD) has also proposed a 'matrix classification' to analyse the impact of Fintechs on the financial sector (OECD, 2018). Against these difficulties in defining and classifying Fintech, the University of Cambridge has for instance developed a tool such as the 'Fintech Ecosystem Atlas' to map and better understand this rapidly evolving sector⁵, while other institutions continuously analyse the phenomenon in its areas of development and innovation (the World Bank (World Bank, 2023) and the World Economic Forum (WEF, 2024)).

In recent years, the various classifications of the Fintech phenomenon developed by institutions, international bodies and private companies (see APPENDIX I - Main Fintech Classification Schemes) are heterogeneous, both because they are affected by the specific objectives of the different publications and due to the lack of a common methodology. Individual entities pursue distinct goals that drive the purpose of market analysis. Consulting firms, for instance, tend to classify Fintechs according to their market value and growth potential, focusing on specific segments such as digital payments, peer-to-peer lending or InsurTech from time to time (Deloitte, 2020; E&Y, 2020; PwC, 2023). On the other hand, the Bank for International Settlements (BIS) and the European Forum for Innovation Facilitators (EFIF) adopt a regulatory perspective, ranking Fintechs according to the risks and opportunities they present for financial stability and consumer protection (BIS IFC, 2020; EBA, 2017). The methodological differentiation is a consequence of the fact that the current classifications of international authorities find it difficult to pigeonhole the different outputs into single, distinct categories, not least because it could be difficult to understand whether they actually constitute revolutionary innovations or are merely new ways of performing traditional financial activities (BIS IFC, 2020; EBA, 2019). This diversity of approaches reflects the complexity of the sector, which requires multidimensional analyses to fully understand its impact and potential.

A further element of complexity in the classification exercise stems from the high speed of evolution of the services offered and of the underlying technologies. New categories emerge continuously, such as Neobanks or WealthTech, while others consolidate or transform (see e.g. Politecnico di Milano, 2024; PwC, 2023; E&Y, 2020). Examples include digital payments which,

⁴ For example, the distinction between an innovative service and the development of a pre-existing service sometimes depends on subjective evaluations and is therefore difficult to identify *a priori*.

⁵ It is an interactive portal that has been mapping the market since 2010.

initially limited to simple online transactions, have evolved into a complex ecosystem that includes contactless payments, mobile wallets, crypto-assets and instant payment solutions. Another example at the technological level is that of robo-advisors, which initially started out as tools for developing low-cost investment strategies and later evolved to increasingly integrate advanced functionalities such as personalised financial advice and wealth planning.

Even from a regulatory point of view, a clear framing is sometimes difficult. The influence of the sharing economy and the drive towards disintermediation has pushed the evolution of the sector away from the classical legal categories, conceived in a historical context characterised by markets in which the demand and supply of financial services were more closely related to banking transactions, as well as to a greater physical presence of intermediaries and customers at branches. The consequence is that many Fintech services are placed in grey areas, halfway between the different sectors and the corresponding regulations, remaining unregulated or subject to regulations that are not always appropriate, i.e. not able to respond conveniently to their risks and peculiarities (EBA, 2019; BIS, 2020).

This technological dynamism and regulatory uncertainty contribute to the difficulty of establishing definitive classifications and require constant updating of methodologies and analysis criteria.

Furthermore, in the various publications analysed, the approach used to define the classification may vary. The BIS reports two possible approaches for defining the taxonomy: one based on the types of financial services (so-called top-down approach) and one based on the analysis of the activities carried out by the sample of companies operating in the sector (so-called bottom-up approach) (BIS IFC 2020). Although the final result of the classification presents similar results, the chosen approach analyses the market differently: in the top-down approach, the categories into which the companies will be classified are defined *a priori*, whereas in the bottom-up approach, it is the sample of companies analysed that determines the prevailing categories, basing the analysis on the services actually offered on the market.

The main national and international statistical institutes⁶ have also discussed ways of surveying the phenomenon, as part of their activities of collecting, analysing and disseminating data on different economic activities. Such surveys are essential for understanding the economic structure of a country or a specific sector, monitoring performance, formulating public policies and supporting business decisions. As such, statistical activities potentially represent an effective source of information of the Fintech market.

For instance, the UN, Eurostat and Istat respectively define ISIC⁷, NACE⁸ and ATECO⁹ in a coordinated and consistent manner. These bodies therefore play a crucial role in ensuring the

⁶ The main statistical bodies that carry out these surveys include, among others, the United Nations (UN), Eurostat (the statistical office of the European Union) and national statistical institutes, such as ISTAT in Italy.

⁷ ISIC (International Standard Industrial Classification of All Economic Activities) Rev.4 aims to facilitate comparability of economic data between countries.

⁸ NACE (Nomenclature of Economic Activities) Rev.2 is aligned with ISIC but adapted to European needs, with which Eurostat monitors economic activities also to provide support for EU policy decisions. This classification depends for the first two digits on the ISIC classification and is intended to systematise and standardise the definitions of economic/industrial activities in the various EU Member States.

⁹ ATECO 2007 is the classification of economic activities currently adopted by ISTAT, defined in a manner consistent with the European NACE Rev. 2 nomenclature.

coherence and comparability of economic statistics, supporting a wide range of applications, from economic research to public policy.

Harmonised surveys could allow for a better comparison of the Fintech phenomenon across jurisdictions and thus increase awareness of market trends. However, the rapid evolution of Fintech and the difficulty in distinguishing between new services and the evolution of existing ones pose significant challenges that, in past attempts at revision, have not led to the introduction of specific classes of services dedicated to Fintech activities (BIS IFC, 2020), emphasising the need to classify firms according to the nature of the services offered, regardless of the level of technology used, where technologies would make the economic function of the service more efficient, without altering it.

1.2 Objective of the classification methodology

Banca d'Italia has developed its own methodology for classifying Fintech, which includes a taxonomy and specific operational guidelines. This classification focuses on the activities carried out by Fintech entities, highlighting the evolution of banking, financial, insurance or payment services in terms of processes and technologies used. It is defined in coherence with the common language of taxonomies on the market, starting from the FSB's definition of Fintech, and developed by applying a particularly advanced methodological approach suitable for measuring and describing the market, designed to meet the Institute's specific market representation needs.

This publication aims to promote a common language in the interactions between Banca d'Italia and Fintech operators¹⁰, thus facilitating communication and supporting the innovation initiatives launched by the Institute. In this context, the proposed classification process is described, with particular attention to the definition and organisation of the different categories identified. The creation of a classification that combines consistency and accuracy is a significant challenge, as it requires the integration of different analytical perspectives, including regulatory requirements and those related to the economic evaluation of the service provided. This approach aims to ensure that the classification not only meets the criteria of clarity and unambiguity, but also that it can adapt to the evolving dynamics of the Fintech sector.

Despite efforts to devise an exhaustive classification, the inherent dynamics of the Fintech sector, together with the possible convergence between traditionally distinct sectors, such as finance and insurance, may generate ambiguities in the classification of certain cross-cutting activities. The proposed taxonomy seeks to favour an overall view of the market, while providing the level of detail required for effective segmentation.

The classification, despite its inherent limitations, represents a fundamental tool for understanding and monitoring this field, whose continuous evolution makes it necessary to constantly review the proposed taxonomy.¹¹

¹⁰ Reference is made, in particular, to the services provided by Canale Fintech, Milano Hub and Regulatory Sandbox.

¹¹ The Fintech Committee Steering Committee discusses and updates the taxonomy on an annual basis.

2. Classification needs analysis of the Fintech phenomenon

The definition of the classification started from the detection of specific internal representation needs of the Fintech phenomenon, with the primary objective of developing an effective methodology concretely applicable, first and foremost, to the internal processes of Banca d'Italia. However, since its conception, the classification was designed to be versatile enough to be adapted also to external contexts, such as that of sector operators (e.g. banks, insurance companies, Fintech start-ups), who might use it to analyse the market. To this end, a working group was set up with the task of developing a flexible methodology that could also be applied outside the institutional context. This methodology is currently used as the framework of support activities promoted by Innovation Facilitators, such as in the classification of the projects presented to Canale Fintech.¹²

Firstly, the importance of adopting unambiguous definitions (taxonomy) was considered relevant in guaranteeing greater comparability of the various analyses carried out, thus providing a common frame of reference that can also be used in dealing with the outside world.

It was then agreed on the need for a representation of Fintech activities that took into account both the service provided and the underlying technology, so that the profile of innovativeness on both dimensions could be distinguished.

The appropriateness of representing the phenomenon through specific dimensions of analysis was evaluated, e.g. the "target clients" (distinguishing between B2C or B2B business models), the "qualification of authorised/notified entity to operate in Italy", or the reference legislation¹³ (e.g. whether or not the services/activities provided fall within the perimeter of application of the EU digital finance package, which includes MiCAR (Markets in Crypto-Assets Regulation), DORA (Digital Operational Resilience Act) or the related PSD2 (Payment Services Directive 2)). However, as these dimensions of analysis are relevant but cross-cutting to other non-Fintech sectors and, therefore, not strictly relevant to the qualification of the activities under study, it was decided to consider them as additional information.¹⁴

When defining the entities to be included in the perimeter of Fintech companies, it was agreed that the assessment should be based on the services actually provided, irrespective of the legal qualification of the entity. The taxonomy of Fintech services must therefore also include traditional financial services offered by supervised intermediaries, such as banks and insurance companies. In addition, the importance of distinguishing the companies that provide the underlying technology for Fintech services, known as 'technology providers', was emphasised, by including them in the overall representation of the phenomenon due to their relevance.

Account was also taken of how the rapid evolution of the reference market may lead to

¹² Canale Fintech is the contact point through which operators can communicate quickly and informally with the Banca d'Italia by presenting projects in the field of financial and payment services based on innovative technologies or by proposing technological solutions addressed to banks and financial intermediaries.

¹³ It should be noted that phenomena lead to such rapid changes that even ordinary legislative techniques, even if they are based on a primary discipline 'of principles' supplemented by detailed secondary implementing regulations, cannot but give way to forms of *soft law* or other solutions, such as *regulatory sandboxes*, that are flexible enough to allow even the legislature to keep up with the times.

¹⁴ This information is collected and analysed separately, without being integrated directly into the main classification. In a *database*, this data could be represented as attribute information.

the development of new services or technologies of interest both to individual offices and to the Institute as a whole, transversally affecting departments of Banca d'Italia with specific competences and analysis needs, which may vary, for example, from risk analysis to supervision activities. Therefore, it has been essential to constantly monitor the development of the market and to periodically review the taxonomy, while ensuring statistical comparability over time. This activity is ensured by a group of experts who periodically check the taxonomy used and its congruence with the services and technologies on the market, documenting the changes made, correlating old and new categories, and maintaining 'historical' categories that, although no longer aligned with current market trends, are upheld in the taxonomy for a certain period of time, allowing the historical evolution of that particular area to be tracked.

Finally, it was pointed out that the classification criterion based on the prevalent service may limit the analysis of minor services, which may not be tracked, but are considered relevant to some of Banca d'Italia's activities. For this reason, it has been considered more appropriate to classify an entity according to each of the Fintech services provided, rather than limiting it to the main service provided.

3. Methodology and definition of classification

3.1 Features of the classification

On the basis of the methodological approach requirements outlined in the previous paragraph, Banca d'Italia has developed since 2022 its own methodology for classifying Fintech, which includes a dual reference taxonomy and specific operational guidelines. For the development of the classification, a hybrid approach was adopted: starting from the theoretical conceptualisation of the types of financial services relevant to the Institute (top-down approach) the validity and effectiveness was subsequently verified against the internal database of Fintech entities (bottomup approach).

The operational guidelines accompanying the Fintech classification of Banca d'Italia methodology therefore envisage: i) the use of a multiple services mapping approach (so-called multi-label) and ii) the revision of the taxonomy on an annual basis.

The multiple mapping approach of services and technologies allows to better manage the complexity inherent in the heterogeneity of the companies present in the market, which includes both start-ups specialising in a single Fintech product or service and mature companies operating in multiple sectors.

Therefore, Banca d'Italia has implemented a multi-label classification allowing a company operating in different Fintech sectors to be classified in several categories. This approach makes it possible to map also those operators whose main activities do not fall within the Fintech perimeter, but nevertheless offer one or more solutions that can be classified in this area. Although this classification criterion may entail a greater complexity in the processing of information than the more widespread approach based on the prevalent activity¹⁵, it offers potential users a more detailed and complete view of the different types of services provided by a company; in any case, the possibility of aggregating the analyses by prevalent activity remains for the purpose of synthetic overviews.

The periodic verification of the Fintech taxonomy is necessary to ensure its relevance, accuracy and adaptability to market developments, as well as to legal and regulatory changes¹⁶. An analysis of the existing literature on the classifications of the Fintech phenomenon highlights a difference in the timing of updates between institutional entities, which tend to favour a static classification, and private companies, which demonstrate a greater dynamism with respect to the evolution of definitions (see for instance EBA, 2017 vs Politecnico di Milano, 2024). The methodological choice adopted in this study aims to reflect a dynamic approach. Consequently, the comparability of data over time is less direct, requiring possible reclassifications of past schemes. However, in the context of such a rapidly evolving market, where new services or technologies can emerge within a few years, a static comparison may be reductive.

The classification of Fintech services has been organised according to a hierarchical structure,

¹⁵ The advantage of unambiguous classification is that it solves the problem of 'double counting', but at the expense of a more accurate representation of services on the market.

¹⁶ These take longer than market innovation, linked to factors such as, for example, the drafting of new regulations and the procedures for transposing European legislation.

which makes it possible to move from an overview of the market to a detailed analysis of individual activities. The taxonomy was defined on the basis of two dimensions: Fintech services offered (or under development) and technologies employed. It is presented in detail in the tables in the next section.

Fintech services are categorized into 5 sectors based on their economic functions, to facilitate the production of effective and comparable statistics that align with international practices (see Appendix I; see e.g. FSB, 2017; BIS IFC, 2020). The second level, consisting of 30 activities, allows for a more detailed identification of individual Fintech services within sectors and is characterised by greater dynamism over time. The technologies are divided into 11 classificatory categories that represent those most used to develop Fintech services.

In "Chart I - Fintech Taxonomy", a representation in the form of a "technological *bouquet*" is proposed to illustrate the Fintech taxonomy in its two dimensions outlined above. This visual metaphor, besides being intuitive, effectively conveys the concept of variety and continuous evolution of Fintech services. The flowers in the *bouquet* represent the main Fintech sectors (Credit, Investments, Insurance, Payments, and Financial related activities), while the petals are the specific activities, emphasising the diversity and granularity of Fintech offerings. The *bouquet* finds its 'lifeblood' in the fertile soil of the vase of technology, as an enabler and feeder for the growth of the entire Fintech ecosystem.



3.2 Fintech Taxonomy 2024

Fintech services taxonomy¹⁷

Below, for each of the five sectors identified (see table), the rationale behind the identification of the activities associated with each of them is explained, with the aim of providing end users with an operational guide to the practical application of the proposed taxonomy:

- 1. **Credit**: the most common credit activities (credit scoring, digital lending and NPL management) are represented in this sector, together with the residual category 'Other credit services'. The activities include specific and illustrative cases, which are listed in the description. Deposit is understood as an activity performed within the scope of banking activities.
- 2. Payments: the classification of payment activities can be conceptualised into four phases, representing the life cycle of money: issuing, transferring, clearing & settlement and storing. The breakdown in the table shows the different phases in disaggregated categories: issuing in "Digital money issuing", transferring and storing in "Digital payment services" and clearing and settlement in "Clearing & settlement services". For the sake of representation, the category "CBDC" is added, given its relevance and implications for the financial system, to allow the use of this particular payment instrument to be monitored also in combination with the previously identified activities (see multiple classification). The residual category 'Other payments' includes possible further cases (e.g. non-digital payment services). In the case of crypto payments, the activities reported here can be combined with those in the 'Financial related activities' sector (e.g. Digital payment services + Crypto asset services);
- 3. **Investments**: the most represented investment activities (foreign exchange, crowdfunding, investment management and real estate activities) are detailed here. Crowdfunding is classified according to an investor perspective and thus includes both equity and debt solutions. In the case of crypto investments, the activities reported here can be combined with those in the 'Financial related activities' sector (e.g. Exchange and trading + Crypto asset services);
- 4. **Insurance**: the peculiarities of the production cycle and of insurance products with respect to banking and financial products, which often lead the European legislator to provide specific legislative treatment for the sector, require a separate representation logic with respect to the previous sectors. The phenomena of embedded, instant and open insurance, together with the increasing use of new technologies, simplify the customer acquisition process, allowing the development of policies tailored to the specific risks of each individual by extending the benefits, in terms of increased efficiency resulting from the use of technology, to all stages of the insurance relationship, from on-boarding to the filing of claims and the payment of compensation. These are not new products, but radical transformations of the distribution and use mechanism of traditional ones, which may profoundly redefine the insurance market;

¹⁷ The descriptions offered concern services that qualify as innovative according to the Fintech definition.

5. Financial related activities: to complement and support the classification of Fintech sectors, we identify those activities that, while not directly falling within traditional sectors, are peculiar in terms of their means of delivery and impact on innovation. In this perspective, they can often be represented in conjunction with activities representing traditional economic functionality (e.g. Digital payment services + Crypto - asset services). The activity "Technological services supply" refers to the category of technology suppliers that, even if indirectly, play a crucial role in the delivery of innovative financial services. "Other fintech related services" completes the framework, reflecting an inclusive approach to identifying Fintech phenomena from their earliest development stages.

Sector	Activities	Taxonomy
	Credit scoring	Automated system for assessing the creditworthiness of counterparties based on the application of statistical methods or models or AI/ML (Artificial Intelligence/Machine Learning).
	Deposit	A contract by which one party (depositor) entrusts an asset to another (depositary) with the obligation of safekeeping and return at the depositor's request (time deposit) or at a predetermined time (term deposit). The depositary may pay the depositor a premium or interest on the deposited amount.
Credit	Digital Lending	Solutions for providing loans or financing through digital channels. Examples include instant lending, buy now pay later (BNPL), peer-to-peer lending, digital factoring, balance sheet lending, invoice trading and other innovative forms of digital financing.
	NPL management	Specialised services for the management of non-performing loans (NPLs) using innovative approaches such as artificial intelligence and data analysis to optimise management strategies.
	Other credit services	Other deposit or credit activities not included in the previous categories.
ayments	CBDC	Central Bank money made available in digital form. It represents a liability on the Central Bank's balance sheet alongside the other forms of money, i.e. notes in circulation and reserves (sight deposits) held by monetary policy counterparties at the central bank. The form being studied by the Eurosystem is called digital euro.
	Clearing & settlement	<i>Clearing</i> means the process of transmitting, reconciling and possibly confirming payments even before settlement, potentially including the netting of debit or credit positions and

	services	the determination of final positions for settlement. Settlement means the discharge of the debit or credit positions in accordance with the terms of the underlying contract.
	Digital money issuing	Activities and services enabling the creation and circulation of new forms of currency in digital format, which can be used as a medium of exchange, unit of account and store of value through digital channels.
	Digital þayment services	Alternative-to-cash payment services that enable the transfer and storage of electronic money through digital channels. These services encompass a wide range of payment solutions, including, mobile payments, instant payments, contactless, tokenized, peer-to-peer transfer, wearable payments and invisible payments. It includes storage services such as digital wallets and online payment accounts.
	Other payments	Other payment or settlement services not included in the previous categories.
	Exchange and trading	Activities that facilitate the buying, selling, custody, transfer and management of financial instruments through digital trading platforms. For example, trading platforms based on DLT (Distributed Ledger Technology) for the exchange of financial instruments or the development of algorithms based on advanced statistical techniques to support trading activity, copy trading and high frequency trading fall into this category.
	Investment-based Crowdfunding	Online capital raising from a plurality of investors. It includes equity and debt crowdfunding. Equity crowdfunding is used for raising venture capital by issuing instruments representing the share capital of the company, such as shares. Debt crowdfunding, on the other hand, is used for raising funds for personal use or to finance a project, to be repaid with interest.
	Proptech & real estate	Proptech (Property Technology) refers to technological solutions to improve and transform the real estate sector by optimising processes, products and services. The term real estate refers to the real estate market as a whole, including its operators, products and services.
	Wealth & investment management (Wealthtech)	The set of digital solutions that aim to improve management of wealth and the processes involved in it. Wealthtech includes companies, activities and technological/digital instruments for asset and investment management. This category also includes robo-advice, i.e. automated financial advisory services.
	Other investment	Other investment and asset management services not included

	services	in the above categories.
	Embedded insurance	Insurance policies that can be purchased in combination with the products to be insured, thus making a single transaction.
'ance	Instant insurance	A micro insurance policy that covers specific and often imminent events and can therefore be obtained quickly via digital channels; it covers a limited period of time, even daily, in conjunction with particular events. Typically, it is presented as a pay-per-use product: payment for the policy is made according to its actual use.
Insul	Open insurance	Access to and sharing of personal and other insurance-related data. It falls under the more general category Open Banking/Open Finance.
	Other insurance related services	Other insurance activities not included in the previous categories. It also includes insurance robo-advisory services, the use of artificial intelligence for risk assessment, digitised claims management and insurance policy comparison platforms.

	Crypto-asset issuing	It covers crypto-asset issuing services regulated by MiCAR - e- money tokens (EMT), asset reference tokens (ART), crypto- assets 'other than' (including utility tokens) - as well as non- fungible tokens (NFT) and MiFID financial instruments (or security tokens).
cial related activities	Crypto-asset services	It includes all services in crypto-assets, with the exception of issuing (see above "Crypto-asset issuing"). Leveraging multiple classification, it is possible to categorise these services according to their specific function within the scope of crypto-assets such as custody, trading, exchange (including e.g. exchange platforms, crypto-ATMs and crypto-brokers), transfer, order execution or advisory and investment services. It also includes other services in crypto-activities not defined by MICAR, such as crypto-lending, crypto-staging, crypto-farming, etc
Financ	Decentralised Finance (DeFi)	DeFi is an ecosystem of technological applications and protocols that reduce or eliminate the use of intermediaries or centralised processes in the offering or marketing of financial services by enabling users to carry out financial transactions directly on a peer-to-peer basis. One of the most relevant features of DeFi is that transactions, involving financial products and services, are carried out through the use of smart contracts (i.e. software programmes that are executed automatically when specific

		conditions are met). The main technology used in DeFi's solutions is DLT (Distributed Ledger Technology). Some of DeFi's main activities include: peer-to-peer lending and crypto lending, decentralised cryptocurrency exchange, derivatives and risk hedging instruments, investment portfolio management, parametric insurance, payments and funds transfers.
	FinTech for Good	Application of technology to financial services with the aim of pursuing one or more of the sustainable development goals defined within the UN agenda, particularly in the environmental and social spheres. Examples include investing solutions to generate a positive social or environmental impact in addition to financial returns, and initiatives for financial inclusion.
	Open Banking / Open Finance	Services based on access to payment accounts through which financial information is shared, with the customer's consent, between banks and external companies, so-called third parties (TPPs) or related fourth parties ¹⁸ , to develop innovative products and services. It includes also the activities offered by payment service providers introduced by PSD2 (PISP - Payment Initiation Service Provider and AISP - Account Information Service Provider) and API service integrators, which facilitate the connection and integration between different financial platforms and applications. Open Finance further expands these data-sharing principles, with customer consent, beyond payment accounts to encompass a wider range of financial products and data (such as savings, investments, loans etc.)
	Regtech	Contraction of Regulation Technology, i.e. the group of innovative technology-based application solutions that enable regulated intermediaries to comply with regulatory, compliance and reporting requirements. It includes products and services that support procedures for compliance, conformity, adherence to rules, regulations, laws and reporting.
	Security and Privacy	All initiatives aimed at protecting IT assets (digital information, devices, systems and resources) in terms of their availability, confidentiality and integrity. The protection of personal information, accounts, files, digital wallets is particularly important in Fintech. Data or information privacy concerns the proper handling, processing, storage and use of personal information. Cyber security and cyber resilience initiatives fall into this category.

¹⁸ The 'fourth parties' are often unsupervised entities (e.g. Fintech companies), which provide customised services based on the payment data accessible from TPPs, but which do not have the size, organisational and operational characteristics that would make the entire organisational and financial burden of acquiring authorisation as a payment institution to operate as a PISP/AISP sustainable.

Suptech	Contraction of Supervision Technology, i.e. the use of technological innovations by supervisory authorities to improve the effectiveness and efficiency of their institutional activities.
Taxtech	IT platforms for continuous collaboration between advisors and taxpayers, but also for assisting administrations in their work to ensure taxpayer compliance. In the financial field, three types of activities carried out by intermediaries may be covered by Taxtech: paying agents for the taxation of income from their own or others' financial assets managed or held in custody (mainly by withholding tax); providers of information to tax authorities on such income and, more generally, on transactions carried out by taxpayers, from current account balances and movements; providers of services linked to the payment system and having tax relevance, such as electronic invoicing.
Technological services supply	The provision of infrastructure and/or technological support to market players.
Other fintech related services	Other Fintech services not included in the previous categories.

Taxonomy of technologies

Categories	Taxonomy
Advanced Cryptography	 This category includes all approaches that use innovative cryptographic tools to ensure greater security and enable advanced functionalities, including: quantum-resistant cryptography (or post-quantum cryptography): development of secure cryptographic systems against quantum computers; homomorphic encryption: encryption that allows mathematical operations to be performed directly on encrypted data (albeit with some limitations), without revealing it.
gence (AI)	Area of computer science concerned with the development of systems capable of performing tasks normally associated with human intelligence, such as reasoning, learning and self-improvement. Natural Language Processing, Machine Learning, Automated Reasoning and Generative AI are among the main (non-zero overlap) fields of AI:
il Intelli,	 Natural Language Processing: focuses on AI techniques for understanding, interpreting and manipulating natural language (e.g. spell-checkers and machine translation systems are examples of NLP applications);
Artificia	 Machine Learning (inductive approach): an area of AI consisting of algorithms that synthesise knowledge from empirical observation of data, learning through a process of generalisation;
	- Automated Reasoning (deductive approach): area of AI dedicated to the

formal representation of knowledge (operated through knowledge representation and reasoning languages) aimed at deriving new knowledge from input data by means of an inference process.

Generative AI: refers to AI systems capable of generating content - such as text, images, video, software code - that reflects the characteristics of the examples used in the training phase, but without merely repeating them. Generation occurs on the basis of an input provided by the user, generally in text form, called a prompt. The training of generative models often requires vast amount of data and computational resources, which can be prohibitive for most organisations. In this regard, Foundation Models (generative models pre-trained with a self-supervised approach on huge amounts of non-annotated data) allow these models to be used for a possible subsequent sectoral specialisation through transfer learning operations, which do require the availability of annotated data in one's own domain of competence, but to a lesser extent than training a model from scratch.

Augmented reality (AR) refers to the enrichment of human sensory perception by means of information, usually electronically manipulated and conveyed, that enhances the amount of detailed data in relation to object under observation. Whereas in augmented reality the person continues to experience the common physical reality but benefits from additional or manipulated information from reality itself, in virtual reality (VR) the electronically added or subtracted information is preponderant, to such an extent that natural perceptions no longer even seem to be present and are replaced by others. This technology makes it possible to navigate in real time photorealistic environments, even completely abstract or fictional ones, interacting with the objects present in them by means of unconventional, extremely sophisticated interfaces, such as helmets with visors on which the scene is represented and sounds are reproduced, and gloves (datagloves) equipped with sensors to simulate tactile stimuli and to translate movements into software instructions. The virtual reality experience requires wearing devices that preclude contact with the surrounding environment. The Big Data paradigm is often characterized by the so-called '5 Vs', which describe three distinctive characteristics and two implications of Big Data:

- Volume: data available for analysis activities are often of terabytes or more;
- Variety: encompasses, alongside the more traditional structured data, also semistructured data (such as XML files) or unstructured data (such as documents or images);
- Velocity: data are produced at extremely high rates; necessitating technologies capable of processing them with adequate speed (even in real-time);
- Veracity: as data can be unreliable, incomplete or inconsistent, due to their generation and collection processes, it must be ensured that they represent the underlying reality as accurately as possible;
- Value: the ability to transform data into useful business information.

Therefore, Big Data are defined as sets of observations that exhibit at least one of the characteristics of high volume (in number of observations or number of attributes), high variety (in content or format) and speed of production or collection, such as to imply the use of non-traditional tools and techniques.

Depending on the case, both large volumes of transactions and payments, characterised by high granularity of information, as well as data in text format, such as e.g. the reason for an expense or bank transfer, as well as data from social network sources and those related to internet browsing, may belong to the category of Big Data.

Advanced analytics refers to the set of functionalities for advanced analysis of data (including unstructured data), such as predictive analysis and exploration in visual mode to discover non-obvious relationships and correlations.

A digital identity (ID) is the representation of a natural person's identity in digital form, using specific digital resources uniquely associated with them, which identify them and represent their intent during digitally performed activities. A digital identity is usually presented to access a computer or information system or to sign digital documents. In a broader sense, it consists of all information present online that can be traced back to an individual, including personal data, social media profiles and other digital traces. ID can be effectively verified and protected through the use of biometric recognition systems (*Biometrics*). Biometrics makes it possible to uniquely identify a person on the basis of biometric data (e.g. fingerprints, facial or iris conformation, voice timbre and tone), providing greater security in various areas such as access to systems, transactions and data protection.

Robotic Process Automation (RPA Blockchain platforms (more generally Distributed Ledger Technologies - DLT) are networks of nodes that share distributed data structures, where information about transactions can only be added (append-only) according to rules shared by the participants. Cryptographic techniques and consensus algorithms are used to reach consensus on a single version of the distributed ledger and make it uncensorable. Within this taxonomy, this category of technologies, by extension, can also encompass smart contracts, i.e., computerised transaction protocols that automatically execute the terms of a contract upon fulfilment of predetermined conditions.

Paradigm in which everyday objects can be equipped with identification, sensing, processing and networking capabilities that enable them to communicate with other devices and services over the Internet. The application of IoT in industry, where operational technologies (OT^{19}) are often used to monitor and control physical processes, can also include the use of connected devices such as black-boxes, which find application in the vehicle insurance sector.

It involves using the principles of quantum mechanics to perform complex calculations not otherwise feasible using traditional computing methods. *Quantum* computing refers to technologies that exploit the computational capabilities offered by a quantum computer.

It consists of the use of software to automate deterministic work processes through the use of robots, which can automatically perform repetitive tasks carried out by human operators, imitating their behaviour and interacting with computer applications. RPA, also known as Intelligent Automation in the financial sector, finds frequent application in the automation of back-office activities, logistics, and the handling and packaging of industrial products (e.g. banknotes). More generally, RPA represents an evolution of workflow management systems and, in some contexts, can make use of Operational Technologies to control and monitor physical processes.

¹⁹ Operational Technology (OT) refers to the use of hardware and software to monitor and control physical processes as well as manage industrial devices and infrastructure. OT systems can be found in a wide range of resource-intensive industries and perform a variety of tasks ranging from monitoring critical infrastructure (CI) to controlling robots in a production department. Unlike Information Technology (IT), which mainly focuses on digital information and data management, OT is closely related to the direct control of machines, plants, and physical systems.

Standard	It includes technologies that are widely adopted and established in the industry, such
technologies	as APIs (Application Programming Interface), Cloud or Web platforms.
Other emerging technologies	It includes other emerging or developing technologies, different from those previously listed, not yet widely adopted, that have the potential to radically transform financial services.

4. First practical applications

4.1 The classification application process

Generally speaking, the classification process of a Fintech company can be divided into three main phases: data acquisition (Data Gathering), analysis and classification (Data Analysis) and continuous updating (Update). In addition to these phases, multi-label classification considerations enrich the process (Fig. I).





Starting with data acquisition, it is essential to proceed with as comprehensive a data collection strategy as possible. This involves identifying reliable sources such as industry reports, academic publications and databases dedicated to Fintech companies. The aim is to gather information and data on the company's business, the underlying technologies, but also on the specific field of interest. An in-depth analysis of e.g. the company's website, any white papers, official documents and press releases can provide a deeper understanding of its product offerings, value proposition and strategic direction. Based on the data collected, the company is then classified according to its Fintech activities. This classification must take into account not

only the primary business scope, but also the technologies adopted and their alignment with industry trends. A comparative analysis with other companies operating in the same segment makes it possible to identify the congruence of the assigned classification and at the same time to assess the appropriateness of its position in the taxonomy.

The company's classification is then subject to regular updating, based on new taxonomic information or changes in the market due to variations in the company's business model and/or supply chain. Indeed, the classification of a Fintech company is not static, but can evolve over time in response to internal and external factors. Below are some anonymised examples of real cases analysed in the context of the Innovation Facilitators' activities, classified according to the relevant categories.

Alpha: company offering a service to identify potential 'money muling' activities by analysing possible anomalies in the transfer of funds using machine learning algorithms. Taxonomy of services: 'Financial related activities' sector, 'Regtech' activities.

Taxonomy of technologies: 'Artificial Intelligence

Beta: a company providing deferred payment services known as BNPL (Buy Now Pay Later) through digital platforms.

Taxonomy of services:

- 'Credit' sector', 'Digital Lending' activity
- 'Payments' sector', 'Digital payment services' activity
- 'Financial related activities' sector, 'Technological service supply' activities (the technological nature of these services, which are often integrated into e-commerce sites via plug-ins or APIs, also justifies inclusion in the 'technological service supply' category).

Taxonomy of technologies: 'Standard technologies'

Gamma: a company that offers its customers the possibility of subscribing to extended warranties via an online platform.

Taxonomy of services: 'Insurance' sector, 'Embedded insurance' activity.

Taxonomy of technologies: 'Standard technologies'

Note that the online sales service would be associated with one of the other Fintech activities only if the products are financial in nature.

Delta: company offering a crypto-assets exchange service via a digital platform that allows users to buy, sell and exchange crypto assets.

Taxonomy of services:

- 'Investments' sector, 'Exchange and trading' activity
- 'Financial related activities' sector, 'Crypto-asset services' activity;

Taxonomy of technologies: 'Distributed Ledger Technologies (DLT) / Blockchain'.

In the event that, among the crypto assets that can be purchased on the platform, the company also offers its token (appropriately qualified under the MiCA regulation), the classification would also include the activity of 'crypto-asset issuing'.

To make the process clearer and more understandable, the results of the application of the classification methodology to two case studies are presented below: the registry of unsupervised Fintech operators, developed by Banca d'Italia, and the study of the interactions with Fintech operators performed by Canale Fintech.

4.2 Application of the classification methodology to two case studies

A recent application of the classification methodology concerns the development of an internal database of unsupervised Fintech operators. The construction of such a database has proved complex, considering the heterogeneity of the types of Fintech firms (start-ups, mature companies, cross-sector companies), the emergence of new types of services and products offered by the same company (changes in the classification of services) as well as market turnover (new constitutions, acquisitions and terminations). Moreover, unlike supervised operators, there are no official registers to uniquely identify unsupervised Fintech operators.

The identification of companies is achieved through a process of aggregation of different types of data sources, both internal and external to the Institute, each of which adopts its own classification methodologies. The distinction between classifications requires that the aggregation process be completed by a 'reclassification' of all entities according to a single taxonomy. To this end, the classification methodology described here was adopted, homogenising the data and identifying the distinctive activities of the operators classified.²⁰

By applying a consistent classification framework, the bank managed to harmonise heterogeneous data sources, ensuring a uniform view of unsupervised Fintech operators in the Italian market.

The availability of a qualitatively reliable list of unsupervised Fintech operators opens up the possibility for market insights and analysis. For instance, such a list could be used to monitor changes over time in the number of companies offering specific services, such as open banking services, thus highlighting developments in the demand for data-driven financial services. Furthermore, by analysing the percentage distribution of services offered in a given sector, the bank could assess the competitive dynamics at work and investigate the potential causes of any changes over time in one or more sectors.

A second case study relates to the analysis of the dialogues conducted with Fintech operators by Canale Fintech, useful to assess the contribution of classification in facilitating the understanding and systematisation of the different financial solutions detected.

From 2017 to 2023, Canale Fintech held a total of 205 discussions with market participants,

²⁰ This led to the exclusion from the scope of the analysis of around 30% of the companies indicated in the public sources consulted, as their activities were not consistent with the definition of Fintech adopted; this exclusion allowed a more accurate assessment of the reliability of the sources used.

i.e., companies yet to be established, start-ups, academics, mature companies and supervised intermediaries.

The projects viewed were analysed annually using the described Fintech classification scheme. As an example, in 2023 the distribution of the 40 new projects on the basis of the prevailing sector shows a concentration on four categories: Payments (30%); Financial related activities (26%); Credit (23%); Investments (18%). Figure 2 shows the results of the analysis, which was conducted by dividing the projects according to their sector of activity. This means that each project was classified according to its main activity or the sector to which it is most closely related.



Figure 2 - Canale Fintech Projects 2023, % values by prevailing business sector



Figure 3 - Details of activities covered by the 2023 projects

Within these sectors, the survey focuses on individual Fintech activities in a more granular way, through the use of the multiple service mapping approach. Within the projects, a total of 96 Fintech activities were analysed: on average, each project involves almost 3 activities simultaneously. The most recurrent are Digital payment services, Other credit services, Crypto-asset services, RegTech and the provision of technology services. Credit scoring and activities related to crypto-assets as well as Open Banking/Open Finance are also relevant. Figure 3 shows how the overall picture of Fintech services encountered by Canale Fintech is captured. This more granular and less synthetic representation provides a more accurate indication of the distribution of services.



Figure 4 - Details of the technologies of the 2023 projects

The logic of 'multiple' representation was also applied to the analysis of the technological dimension, recording the use of multiple technologies per single project: new projects exploit on average between 2 and 3 technologies among those identified by the taxonomy. Figure 4 shows this information with Al, Big Data and DLT / Blockchain as the most frequently detected technologies in the new Fintech projects analysed.²¹

²¹ It should be noted that, as it is not recorded by prevailing technology, the sum of the technology cases does not give the total number of referrals.

5. Conclusions

Banca d'Italia has developed a methodology for the classification of Fintech activities, integrating in a specific taxonomy the most relevant features of methodologies already on the market with specific elements designed to meet the Institute's internal information and survey needs and facilitate communication with the outside world.

The purpose of this publication is to illustrate how the classification process and taxonomy work, providing concrete examples to better illustrate these concepts and to clarify how the different categories are defined and organised. The application of the classification to the Fintech operators' registry has proven its effectiveness in providing an in-depth understanding of the complexity and heterogeneous nature of the Fintech ecosystem. Furthermore, through the application of the taxonomy to the analysis of the projects submitted to Canale Fintech, it has been possible to highlight the concentration of activities on some specific areas, such as digital payment services and services related to crypto-assets (Crypto-asset services), as well as their issuing (Crypto-asset issuing). These results would thus seem to confirm the effectiveness of the proposed taxonomy in mapping the Fintech sector and provide a basis for further investigation.

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APPENDIX I - Main Fintech Classification Schemes

In this appendix, the classifications considered most relevant are presented and briefly compared in the table at the end of the document (see "Summary of the main classifications analysed").

The Financial Stability Board's (FSB, 2017) classification represents one of the first attempts to categorise Fintech activities. The proposed classification is mainly based on the types of 'financial service offered' rather than the technology adopted; in particular, the FSB identifies five macroareas of Fintech services. This classification formed the basis for many other taxonomic proposals and is still the current categorisation adopted by the FSB.

The Bank of International Settlements classification (BIS IFC No. 12, 2020) is based on the same criterion of "financial service offered", but includes a special entry for technology providers²² ("Tech providers") that do not directly provide financial services to customers but provide technologies used for the offer of innovative financial services. In addition, it considers a specific category of 'institutional enablers' ('policy enablers'), i.e., measures and initiatives of public utility (e.g. digital identification systems) that support the development of Fintech activities and the use of enabling technologies.

The Organisation for Economic Co-operation and Development (OECD, 2018) introduces a 'matrix classification' of Fintech, whereby the identified classes emerge from the intersection of the two fundamental dimensions 'financial service offered' and 'innovative technology' used. This makes it possible to map services and technologies belonging to multiple categories and observe which technologies have a wide range of applications in financial activities and services and which remain more limited. Specifically, the OECD classification identifies eight areas of financial services and services areas of 'digital technologies'.

At the European level, the European Banking Authority (EBA) conducted a classification based on an analysis of the companies present in the market by surveying the Fintech phenomenon through a survey submitted to the competent authorities of 22 EU and 2 EEA countries (EBA, 2017). The EBA thus identified 282 companies actually operating in the countries surveyed. It then drew up a two-tiered classification, i.e., identifying activities according to the financial service offered and grouping them by 'identity' of economic function.

Alongside the classifications of international institutions and organisations, a further contribution is that of the Cambridge Centre for Alternative Finance (CCAF), which has developed a classification system to consistently organise entities according to their business models. The 'Cambridge Fintech Ecosystem Atlas' (first version 2010) uses this system to classify Fintech companies. The structure is hierarchical and consists of three levels, allowing one to move from a general view of the Fintech market to an increasingly specific analysis through 14 main market segments, 63 sub-segments that further specify the type of business to 118 categories at the most detailed level.

In the private sector, the main analyses were conducted by internationally operating consulting firms. Deloitte analysed a sample of companies globally (including 3,482 European companies). The

²² The wording of technology providers is also different in the various taxonomies, taking on the labels of Tech providers, *TechFin*, Technology providers, *Tech Facilitators*. In this document, we standardise the definition to 'technology providers', highlighting the wording from the publication in brackets.

study maps the ecosystem of Fintech companies, grouping them into clusters²³ where there is no clear distinction between the financial service offered and the underlying technology, such as 'payment & billing' and 'blockchain' (Deloitte, 2020). Ernst&Young and Fintech District also propose a taxonomy based on a less theoretical and reality-focused analysis approach (E&Y, Fintech District, 2020). In the report, 345 start-ups are classified on the basis of a self-assessment survey of their activities with respect to the proposed taxonomy, to classify start-ups at a first level into two clusters (Pure Fintech and TechFin²⁴) and subsequently into 17 specific service areas. Price Waterhouse Coopers publishes an annual analysis of the Fintech market in which it provides an overview of companies operating in Italy (PwC, 2023). The 2023 study identifies 167 Fintech companies in Italy, broken down into segments according to the financial service offered. This breakdown is updated to reflect the financial services offered by the sample of Fintech companies analysed, according to a bottom-up approach.

Finally, the analyses of the Fintech and Insurtech Observatory of the Politecnico di Milano (2021, 2022, 2023 and 2024) periodically analyse the Fintech companies operating in Italy and propose a classification that, in addition to the dimensions 'type of service offered' and 'technologies used', also considers that referring to the target clientele, e.g. Business-to-Business (B2B) or Business-to-Customer (B2C). These dimensions are updated when the reports are published in order to reflect the evolution of the Fintech market.

In conclusion, the classifications examined above present definitions that differ both in terms of the scope of identification of Fintech services and in terms of their classificatory taxonomy.

	Dimensions	Applications	Taxonomy (activities)
FSB	Financial Services	Taxonomy	 Investment management & investor services Market support Deposits, lending & capital raising Payments, clearing and settlement Insurance
BIS	Financial Services	Taxonomy	 Payments Lending Savings and deposits Insurance Investments Financial planning and advisory Capital raising B2B tech providers
OECD	Financial Services + Technology	Taxonomy	 Advisory & agency services Planning Communications Insurance Investment & trading Lending & funding Operations Payment services Security
EBA	Financial Services	Taxonomy and subject master data	 (first level) I. Credit, deposit, and capital raising services 2. Payments, clearing and settlement services 3. Investment services/Investment management services 4. Other financial-related activities

Overview of the main classifications analysed

²³ The methodology for distributing the companies into the various clusters is an AI (Artificial Intelligence) textual analysis algorithm based on NLP (Natural Language Processing).

²⁴ Pure FinTech focuses on creating new digital financial solutions, while TechFin, develops new technology solutions that support the financial sector.

CCAF	Financial Services	Business Models	(first level) 1. Digital Lending 2. Digital Capital Raising 3. Digital Banks 4. Digital 5. Digital Payments 6. Cryptoasse 7. InsurTec 8. WealthTec 9. Personal Financial Services 10. RegTec 11. Tech. for Enterprise 12. Consensus Services 13. Exchange and trading 14. Proptech & real estate
DELOITTE	Financial Services + Technology	Taxonomy and subject master data	(first level) 1. Banking & Capital Markets 2. Investment Management 3. Insurance 4. Real Estate
E&Y	Financial Services + Technology	Taxonomy and subject master data	 Blockchain Capital Markets & Trading Chatbot Crowdfunding Crypto Cybersecurity Data Management DNA, ML, AI InsurTech Invoice & Tax Management Lending Neo banks Open Banking Services/API FFM RegTech Smart Payments & Money Transfers WealthTech
PWC	Financial Services	Taxonomy and subject master data	 Capital Markets & Trading InsurTech Lending Payments RegTech Asset & Wealth Management Open Banking
POLIMI	Fin. Serv. + Technology + Customers (B2B, B2C)	Taxonomy and subject master data	 Insurance (Insurtech) Lending & Financing Budgeting/Accounting Proptech Cryptoassets

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