BANCA D'ITALIA
EUROSISTEMA

FINTECH SURVEY IN THE ITALIAN FINANCIAL SYSTEM

July 2024

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This report presents the main results of the FinTech survey in the Italian financial system carried out by the Bank of Italy in 2023.

Collected exclusively for analysis purposes, the data are processed in aggregate form in compliance with privacy legislation. We would like to thank the intermediaries who participated in the survey.

The survey was edited by Alessandro Scognamiglio and Mattia Berruti, who wish to thank the following contributors: Enrica Accomando, Jacopo Appodia, Alessio Beninati, Francesco Cavalieri, Andrea Ianni, Federica Laurino, Valerio Minichiello, Giorgio Occasi, Isabelle Pietroletti, Eugenio Rubera, Diego Ruggeri, Carlo Salandi and Chiara Torriero.

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Graphics by the Publishing and Printing Division of the Bank of Italy

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GENERAL INFORMATION

Unless otherwise specified, Bank of Italy calculations; for Bank of Italy data, the source is omitted. Further information can be found in the Methodological Notes to the Annual Report and the Regional Annual Report.

Conventional signs:

– the phenomenon does not occur;

.... the phenomenon occurs but its value is not known;

.. the value is known but is nil or less than half the final digit shown;

:: the data are not statistically significant.

Introduction

This report presents the results of the fourth FinTech survey conducted by the Bank of Italy during 2023.

The two-year survey involved the entire banking system and 67 non-bank intermediaries; the latter were selected based on their size and business model.

The participation rate was 96.5 per cent overall.

The first part of the report highlights the investments, technologies, and collaborative partnerships between intermediaries and IT companies.

The second part examines the effects of these investments on the governance of intermediaries, on business models and on risks.

The third and fourth sections focus on FinTech projects related both to open banking and to the fight against money laundering.

List of acronyms

AI: Artificial Intelligence

AIS: Account Information Service

AML: Anti Money Laundering

API: Application Programming Interfaces

BFM: Business Financial Management

CIE: Electronic Identity Card

CFT: Combating the Financing of Terrorism

CRM: Customer Relationship Management

DLT: Distributed Ledger Technology

IOT: Internet of Things

EMI: Electronic Money Institutions

IP: Payment Institutions

KYC: Know Your Customer

ML: Machine Learning

NLP: Natural Language Processing

OCR: Optical Character Recognition

UCITs: Undertakings for collective investment in transferable securities

PFM: Personal Financial Management

PIS: Payment Initiation Service

POC: Proof of Concept

PSD: Payment Service Directive

RPA: Robot Process Automation

SGR: Asset Management Company

SIM: Securities Investment Firm

SPID: Public Digital Identity System

Main results[1)]

Investment profile – Investments[2)] in innovative technologies amounted to €600 million over the two-year period 2021-22; it is estimated at €901 million for the two-year period 2023-24. Additional expenditure of €380 million is foreseen starting in 2025, until the completion of the projects. Overall, expenditure related to the identified investment projects amounts to €1.88 billion.

Other aspects of the digital transformation process are also recording growth, such as the scale of the projects, the number of workers involved, partnerships with IT firms, and the value of shareholdings in FinTech companies.

The adoption of digital technologies, however, remains limited and polarized. The share of FinTech expenditure in the IT budget for the banking system averages 5.0 per cent; the share of the top 10 investors increased further, reaching 87.5 per cent of the total.

Partnerships and shareholdings – Investment plans can be carried out by collaborating with companies and technology providers in order to obtain the necessary technologies and skills from external sources and to speed up the time-to-market of the projects. Compared with the previous survey, both the percentage of intermediaries that entered a partnership and the number of agreements increased (from 46 per cent to 51 per cent, and from 330 to 470 respectively).

Another option for adopting FinTech technologies is to hold shares in companies specialized in the provision of IT services: the nominal value of the units held amounts to €1,114 million, five times that observed in 2021.

The technologies – About half of the projects are based on: web and mobile platforms (20.5 per cent), artificial intelligence or AI (16.5 per cent) and Application Programming Interfaces or APIs (14.9 per cent). Compared with the previous survey projects based on web-mobile platforms, AI, digital signatures, DLTs and big data increased; by contrast, projects related to APIs and biometric technologies decreased in both number and value. Finally, while fewer in number, cloud computing projects recorded an increase in expenditure.

Impacts on the business model – Lending, savings and deposits, and payments attracted most financial resources, accounting for 43.7 and 39.4 per cent of the digital transformation budget respectively. Business operations was the strongest area in terms

1) FinTech projects represent investment initiatives focused on technological and financial innovation capable of generating new processes, products, services and business models. The list and description of the technologies are contained in the Methodological Notes.

2) Carried out during 2023, the survey identifies the investment projects launched in the two-year period 2021-22 and those that the intermediaries intend to undertake in the two-year period 2023-24. Annual expenses and revenues are recognized for each project during the period 2021-24; subsequently and until the projects are put into production, expenses and revenues are recorded cumulatively. The data for the two-year period 2021-22 are final outturns.

of the number of projects (almost a quarter).[3)] The ratios of FinTech expenditure to operating costs do not exceed 1 per cent in each area.

Lending projects mostly aim to digitalize and automate credit processes, from requests for loans to disbursement, including the potential management of problematic and non-performing loans (digital lending). In the payments area, the most recurrent innovations concerned instant payments and the integration of payment instruments into digital wallets. Business operations-related projects, mainly based on AI and Robotic Process Automation (RPA), affected back office and customer interactions (through chatbots). RPA-based projects also affected asset management and consulting investment services.

The impact of the projects is expected to be most significant for operational risks: on the one hand, less fraud and lower legal fees would improve intermediaries' reputations; on the other hand, ICT outsourcing risks are expected to increase in view of the growing use of cloud providers. Third-party risk management is therefore a fundamental component of an ecosystem characterized by frequent collaborations with technology partners.

Open banking – New open banking projects have limited resources and the related budget has decreased sharply, from €156 million to €46 million. These new initiatives regard payment services, digital identities, digital wallets and business support. More specifically, the main areas of innovation are in: credit scoring, know-your-customer (KYC), personal and business financial management, and customer due diligence. Open finance projects are also still very limited.

Anti-money laundering – The share of intermediaries using or developing anti-money laundering (AML) technologies is high and increasing compared with the previous survey (from 62 per cent to 80 per cent). The most widespread solutions adopted are digital identities, used for remote due diligence, optical character recognition (OCR) and digital signatures in the field of customer data collection. Cloud solutions also played a significant role, especially in data retention, whereas AI tools are still less frequently used.

3) Lending, Savings and Deposits includes projects involving the collection of savings and the granting of credit. Business operations includes projects affecting back office, business and customer support.

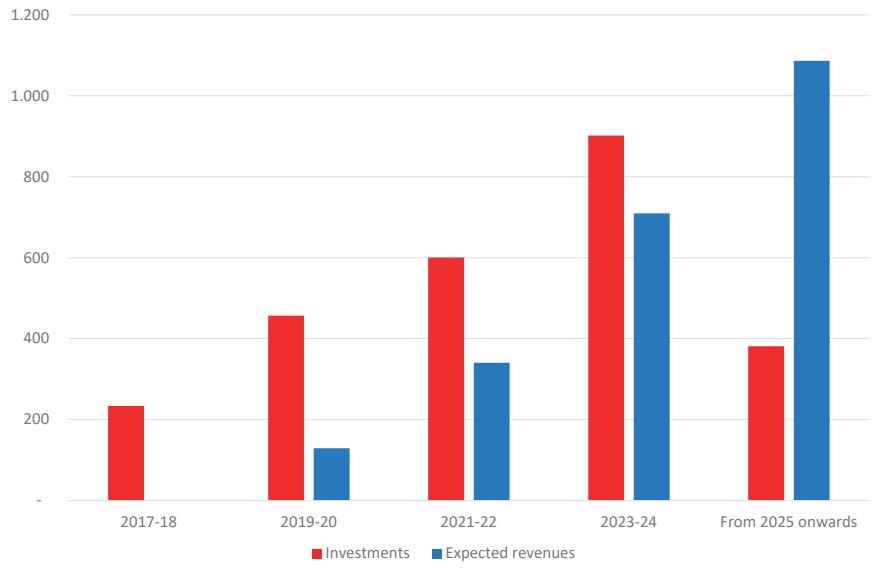
1 Investments

1.1 Characteristics of investments

Investments and expected revenues from projects – Investments in innovative technologies amounted to €600 million over the two-year period 2021-22; it is estimated at €901 million for the two-year period 2023-24; additional expenditure of €380 million is foreseen from 2025 until the completion of the projects. Overall, total investments amounted to €1.88 billion. Spending on FinTech projects increased in the period 2017-24 (Figure 1): expenditure for the two-year period 2023-24 is 3.8 times that observed in the two-year period 2017-18, when it was first recorded.[4)]

Figure 1

INVESTMENTS AND EXPECTED REVENUES
(millions of euro)



While it remains limited in absolute terms, expenditure has increased gradually over time: in the two-year period 2021-22, FinTech expenditure by the banking system averaged 5.0 per cent of IT budgets[5)]; it was 3.1 per cent in the two-year period 2019-20 and 1.5 per cent in 2017-18.

This trend could hint at both a lower propensity of intermediaries to undertake innovative projects in the context of a general economic slowdown and an increased capacity to select innovative projects for which more resources can be allocated.

4) Considering only the projects related to intermediaries present in all three surveys, this trend does not change.

5) 2022 is the last year for which supervisory reports are available for banks' IT spending. However, this information is not available to non-bank intermediaries.

The expected revenues arising from the projects amounted to €340 million in the two-year period 2021-22 and €709 million in the following year; as of 2025, projects are expected to generate additional revenues of almost €1.1 billion. Over the three years considered, the ratio of the expected revenues generated by the initiatives to the corresponding costs rose from 28.3 to 78.7 per cent.

Interoperability between FinTech projects and existing IT systems continues to be the main obstacle to investment activity (16.8 per cent of the sample; Table 1), followed by insufficient demand (11.4 per cent) and the lack of adequate human resources (10.8 per cent).

The scarcity of skilled human resources, together with the complexity and immaturity of technologies, represent the biggest challenges, especially compared with the previous survey; other factors, such as cyber security risks, uncertainty about the evolution of the regulatory framework and a corporate culture that is ill-equipped for technological innovation have receded appreciably.

Table 1

FACTORS THAT SLOW DOWN FINTECH INVESTMENT
(per cent)

Factors	Survey		
	2021	2023	Change
Low degree of interoperability of projects with pre-existing systems	16.5	16.8	0.3
Insufficient demand	12.7	11.4	-1.3
Staffing difficulties	8.9	10.8	1.9
Investments that are not financially sustainable	9.5	9.0	-0.5
Change management has more costs than benefits	7.6	7.8	0.2
FinTech is not part of the corporate strategy	8.2	5.4	-2.8
Overly restrictive regulations	8.2	4.2	-4.0
The technology is too complex or underdeveloped	0.6	4.2	3.6
IT security is difficult to ensure	4.4	1.2	-3.2
Regulation is lacking or incomplete	0.0	0.6	0.6
Other or no answer	23.4	28.7	5.3

Banks are the main investors in the projects, accounting for 95 per cent of total expenditure (76.5 per cent in the previous survey); the rest is spent by other financial intermediaries.

Over the three surveys, the share of expenditure of the top 10 intermediaries increased by around 10 percentage points, from 77.2 per cent in 2019, to 84.7 per cent in 2021, to 87.5 per cent in 2023. The share of the top 5 intermediaries has grown even more intensively: from 61.9 per cent to 81.0 per cent.

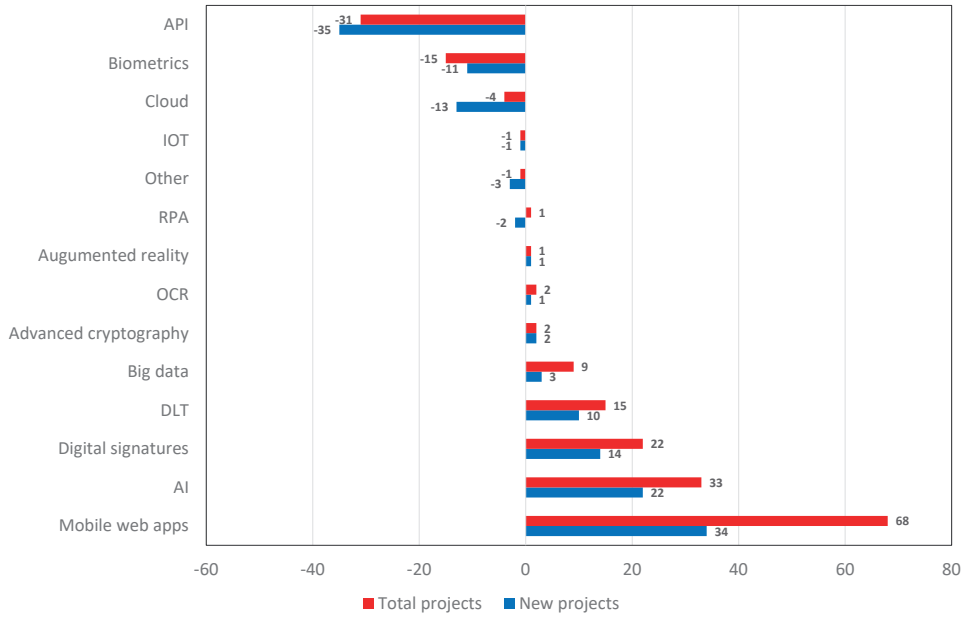
The average investment per intermediary rose from €10.6 million to €18.8 million, but is affected by some large projects without which it would have been €12.4 million.

A measure less sensitive to extreme values is the median, which stood at around €1.2 million, double that of the previous survey.

The technologies employed[6] – About half of the projects are based on web and mobile platforms[7] (20.5 per cent), AI (16.5 per cent) and Application Programming Interfaces (APIs; 14.9 per cent). Compared with the previous survey projects based on web-mobile platforms, AI, digital signatures, DLTs and big data increased; by contrast, projects relating to APIs and biometric technologies have decreased in both number and value; cloud computing projects, while fewer, have grown in terms of spending (Figure 2).

Figure 2

PROJECTS BY TYPE OF TECHNOLOGY
(units)



Internet of Things (IOT), advanced encryption and augmented virtual reality technologies are extremely rare and feature in 3, 2 and 1 projects respectively; finally, there are no quantum computing-based projects.

THE APPLICATION OF RPA AND AI

Robotic Process Automation (RPA) and Artificial Intelligence (AI) enable the automation and improvement of business processes and procedures. The former automates deterministic work processes through the use of software automata (robots) capable of performing repetitive tasks carried out by human operators, imitating their behaviour and interacting with computer applications. AI, instead,

6) The projects are based on a reference technology, which is usually combined with other technologies. Projects based on two and three technologies account for 58.6 per cent and 33.7 per cent of the total, respectively. The estimates reported always refer to the reference technology.

7) These are platforms and applications that are accessible via the web through a network.

denotes the ability of computers to synthesize their knowledge based on the empirical observation of data and learning from this through a process of generalization.

The financial sector is progressively adopting these technologies to ensure more accurate execution modes and faster turnarounds, while mitigating operational risks. More generally, intermediaries expect to see improvements in the productivity and effectiveness of the business functions affected by these technologies.

Thirteen projects that leverage both technologies (RPA and AI) were examined simultaneously, involving a total investment of €14 million.[1)]

Although the scope of application of these technologies differs, some common rationales can be identified. Most of the projects examined are developed to optimize or innovate business processes, especially back office or business support, with particular reference to credit; others aim to make risk management – especially operational risk management – more effective.

More specifically, for credit-related applications, RPA and AI are used at all stages of the process, simplifying and speeding up the screening and credit disbursement phases, and thereby improving the service offered. Moreover, they make the subsequent monitoring phase more accurate, with AI used for activities such as automating the calculation of customers' credit scores and the early detection of situations that need to be monitored in advance. In the business support area too, these technologies are capable of exploiting fully all available information. Massive amounts of data on existing and potential customers, such as personal profiles and portfolios, are analyzed to identify clusters of similar customers, with a view to suggesting the most appropriate and consistent financial products to sales functions.[2)]

RPA and AI are also applied in document management processes, reducing working times, standardizing activities and making process phases more accurate. In particular, AI is used for the semantic analysis of compliance opinions in order to produce draft opinions aligned with those provided in the past on similar issues. There are additional applications of these technologies in the field of AML. Indeed, they can ensure more standardized and efficient data collection for the execution of customer due diligence (through RPA). They can also make the identification of suspicious transaction reports more effective (through AI).

In general, while these projects highlight the effectiveness of RPA in making recurrent and standardized manual operations automatic, thus ensuring faster execution, they nonetheless limit the use of AI, employing it primarily as a decision support tool. The degree of reliability of this technology continues to be impacted by the quality and quantity of input data: where intermediaries do not have sufficient in-depth time series, the tool can prove unreliable.

1) Therefore, projects based on only one of the two technologies are not included in the analysis in this box. However, our findings suggest that RPA and AI, even if present in the same project, do not exhibit relationships of strict complementarity; at most, they are incorporated in two distinct phases of the same project.

2) Compare with paragraph 2.4, which describes the effects of projects on brokerage and operations.

Project progress status – Some 14.0 per cent of projects are at the proof-of-concept stage, about 20 per cent are at an advanced stage and the remainder are in production; these percentages are close to those recorded in the previous survey with a slightly higher share of projects in the production phase.

The projects that show a more advanced status concern web and mobile applications, APIs, cloud computing, big data, RPA and biometrics. At the opposite end of the spectrum are DLTs, with more than 40 per cent of projects in the proof-of-concept phase.

The duration of a production cycle of a project is about 48 months: 18 months are dedicated to the study of the prototype and to the start of production; after the roll out, it takes 30 months to achieve the breakeven point.

PROJECTS BASED ON DLT

There are 40 DLT-based projects in the survey.[1] Together, they account for 9 per cent of the total with an expected overall investment of €23.2 million; these projects are mainly concentrated in the areas of loans (51.8 per cent), payments (22 per cent) and client investment services (18.3 per cent). They are mostly undertaken by banks (approximately 90 per cent); only a minority of the projects relates to asset management companies (SGRs) and electronic money institutions (EMIs).

The projects often involve a variety of actors: these include not only intermediaries, but also non-supervised entities, such as consulting companies, technology service providers, FinTech companies, along with trade associations and consortia.[2]

DLTs apply to different areas of the banking and financial business, such as guarantees, customer onboarding, and the issuance of security tokens.[3]

The projects linked to guarantees aim to create digital platforms for the issuance and management of covenants, enabling real-time notarization.[4] Leveraging transparency and immutability, blockchain technology permits a more efficient circulation of certified information among participants. DLTs are also linked to the digitalization of onboarding and KYC processes: for example, DLT platforms can be used to certify the sharing of information for onboarding purposes among intermediaries.

Crypto-asset projects – Among the projects involving the use of DLTs, 13 concern the tokenization of assets and the provision of services covered by the Markets in Crypto-assets Regulation (MiCAR).[5] Almost all of these projects, which involve a

1) See the Methodological Notes for the definition of DLT.
2) Many of the projects use permissioned DLTs, where only authorized nodes participate in the consensus process and are therefore accountable for the validation and writing of information on the ledger.
3) The projects also include participation in the *Spunta interbancaria* initiative, coordinated by the Italian Banking Association (ABI), which was already analyzed in the previous survey and was therefore not included in the reported statistics.
4) This term refers to an immutable proof that at a certain date in time a given document has been certified and those who receive it can verify any change on it.
5) Please see the Methodological Notes for the definition of tokenized assets.

total investment of €13 million, are being undertaken by banks; over half of them are in the proof-of-concept phase. More specifically, projects concern custody and trading services for crypto-assets, the issuance of stablecoins, the tokenization of fund shares, and the issuance of bonds and certificates on DLT.[6)]

6) Certificates are derivatives issued by banks or other financial intermediaries both in the form of plain vanilla and structured securities, which replicate the performance of the underlying asset, with or without leverage.

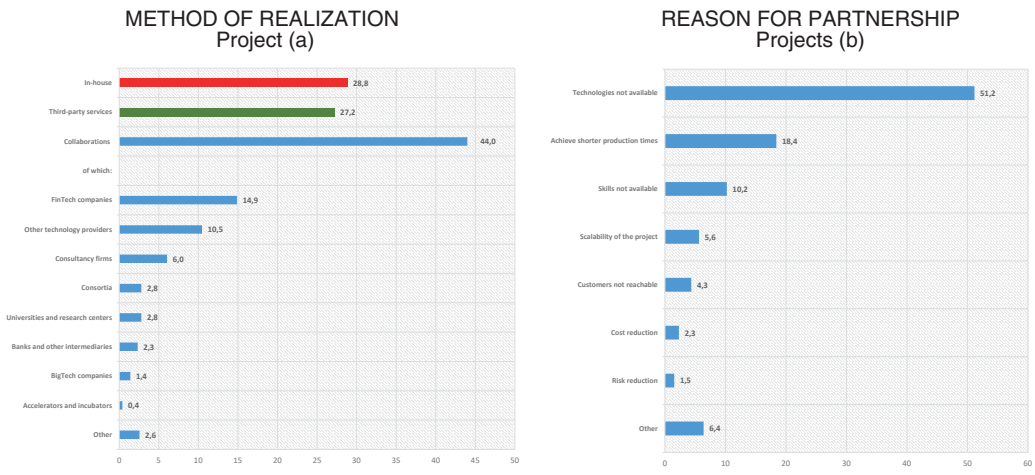
Implementation methods[8)] – Partnerships are the main way of implementing the projects (44 per cent of cases), while in-house production and direct acquisition of IT services account for 28.8 per cent and 27.2per cent respectively (Figure 3a).

Partnerships typically involve FinTech companies, other technology service providers and consulting companies (with shares of 14.9, 10.5 and 6.0 per cent respectively). Partnerships with universities, research centers and BigTechs are less frequent and even less so, partnerships developed with accelerators and incubators (Figure 3b).

Partnerships provide banks with advanced digital technologies otherwise not available within the company (51.2 per cent of projects; Figure 3, right-hand panel). They also speed up processing times (18.4 per cent) and provide skilled human resources (10.2 per cent). Increasing the scalability of projects and the number of digital customers seem to be less incisive factors (5.6 and 4.3 per cent respectively).

Figure 3

NUMBER OF PARTNERSHIPS
(per cent)



8) This section is dedicated to the analysis of all possible ways of implementing a FinTech project, including though partnerships; see the next paragraph for a detailed analysis of the partnerships.

1.2 Partnerships and holdings in FinTech companies[9)]

Investment projects can be carried out in collaboration with third parties starting from companies and technology providers; another option is the direct acquisition of shares in entities specialized in the provision of information technology.

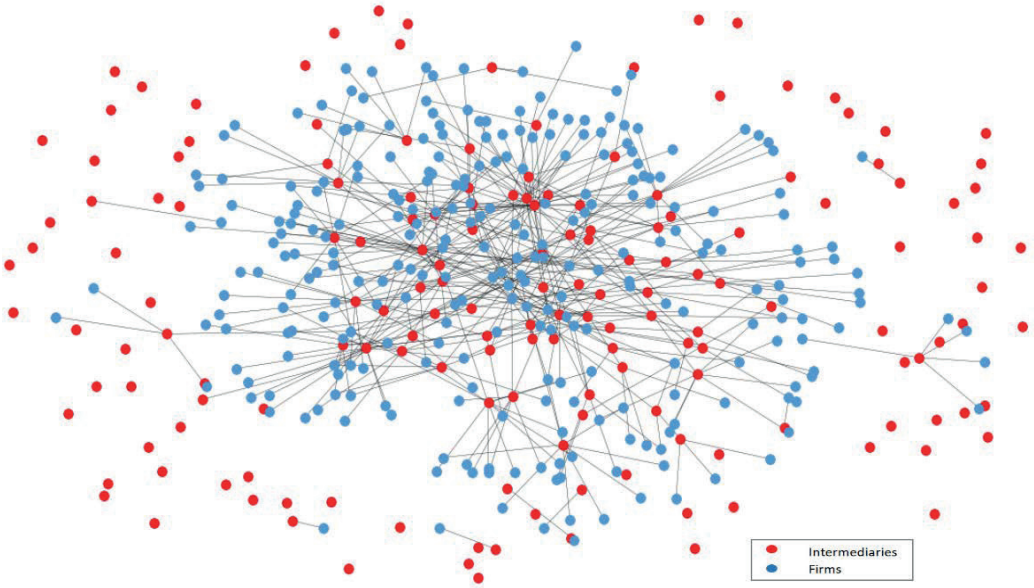
Network of partnerships – Some 51 per cent of intermediaries collaborate with at least one FinTech firm (it was 46 per cent in 2021); the total number of partnerships is equal to 470 (140 more than in 2021) involving 274 different firms (75 more than in 2021).

Figure 4 shows the network of partnerships between intermediaries and companies;[10)] the network density, measured by the ratio of the number of actual links to the maximum number of possible links, is less than 1 per cent: connections are very scattered, indicating that relations between firms and intermediaries are frequently exclusive.[11)]

D*egree centrality* – This is used to measure the level of connection of each intermediary.[12)] For 62 per cent of intermediaries the indicator has a value of less than 1 per cent (no more than two collaborations) and for no intermediary exceeds 10 per cent, corresponding to 27 collaborations (Figure 5a).[13)]

Figure 4

NETWORK OF PARTNERSHIPS



9) The scope of FinTech entities comprises companies providing technological services, consulting companies, universities, incubators, accelerators, districts, and supervised intermediaries.

10) This is a bipartite graph showing two disjointed sets of nodes, with the nodes of one set connected only with those of the other. The two sets are made up of intermediaries and businesses.

11) Only one fifth of companies collaborate with more than one intermediary and only five companies collaborate with at least ten intermediaries. On average, each company collaborates with 1.6 intermediaries, the median is equal to a single collaboration relationship. Some 42 per cent of intermediaries work with more than one partner company; furthermore, each intermediary relates on average to 2.7 firms (with the median of 1).

12) Degree centrality is the ratio of the number of existing connections (with different nodes) divided by the number of different nodes. For example, to say that the degree centrality of a company is 12 per cent means that it is connected with 12 per cent of intermediaries.

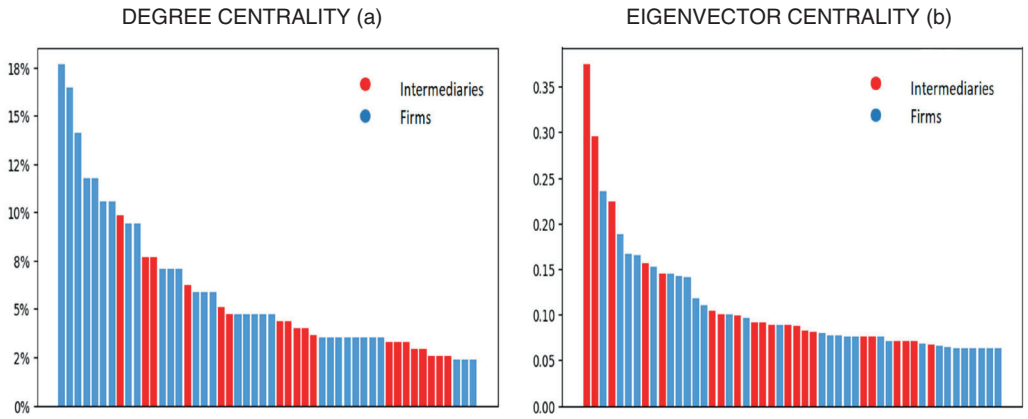
13) Five intermediaries account for 21 per cent of total partnerships, while the top 15 companies account for 44 per cent.

The same indicator, calculated for companies, shows greater variability; on the one hand, the share of firms with a degree centrality value of less than 1 per cent is much higher and equal to 80 per cent, indicating that companies tend to enter into exclusive partnerships with intermediaries, at most one at a time; on the other hand, it is possible to identify firms with degree centrality values greater than 10 per cent, which give them a higher level of connection to intermediaries.[14)]

A second measure of centrality, known as *eigenvector centrality*, has been used in order to identify critical nodes with respect to their importance rather than to the number of adjacent nodes (Figure 5b):[15)] a node, for example an intermediary, is considered important if it is connected with important firms, not necessarily with many of them. Using this second measure the most important nodes are now intermediaries rather than firms.

Figure 5

CENTRALITY MEASURES



Other features of the partnerships – Most partnerships are in the business operations and payments and lending areas, with shares equal to 19, 16 and 13 per cent respectively of the total (Figure 6). In operations, most partnerships are for business and back office support; in credit, most develop credit scoring models and, to a lesser extent, lending crowdfunding platforms; in the area of payments, the focus is instead on digital wallets.

In most cases firms provide intermediaries with IT services (52 per cent); less frequently firms sell their products to the clients of the intermediary (14 per cent) and provide R&D activities (13 per cent). The acquisition of the rights to a product, technology, or intellectual property from the firm are rarer (7 per cent; *licensing in*).[16)]

14) The five most involved partner companies account for 15 per cent of total partnerships; the top 15 partner companies account for 30 per cent.

15) Eigenvector *centrality scores,* ranging from 0 to 1, are assigned to network nodes based on the principle that a high-scoring node connection contributes more than a low-scoring node connection: a high score means that the node is connected to many nodes that in turn have high scores.

16) This method of collaboration differs from the supply in that it does not provide for the transfer of ownership of the service or product.

The technological know-how provided by companies mainly consists of the development of APIs and web-mobile applications, especially in connection with the open banking paradigm (in both cases these account for one fifth of the total partnerships for which the technology has been indicated). AI-based partnerships (14 per cent) are also relevant, mainly for the development of risk management and credit projects. There are no partnerships for developing IOT technologies, advanced encryption and quantum computing.

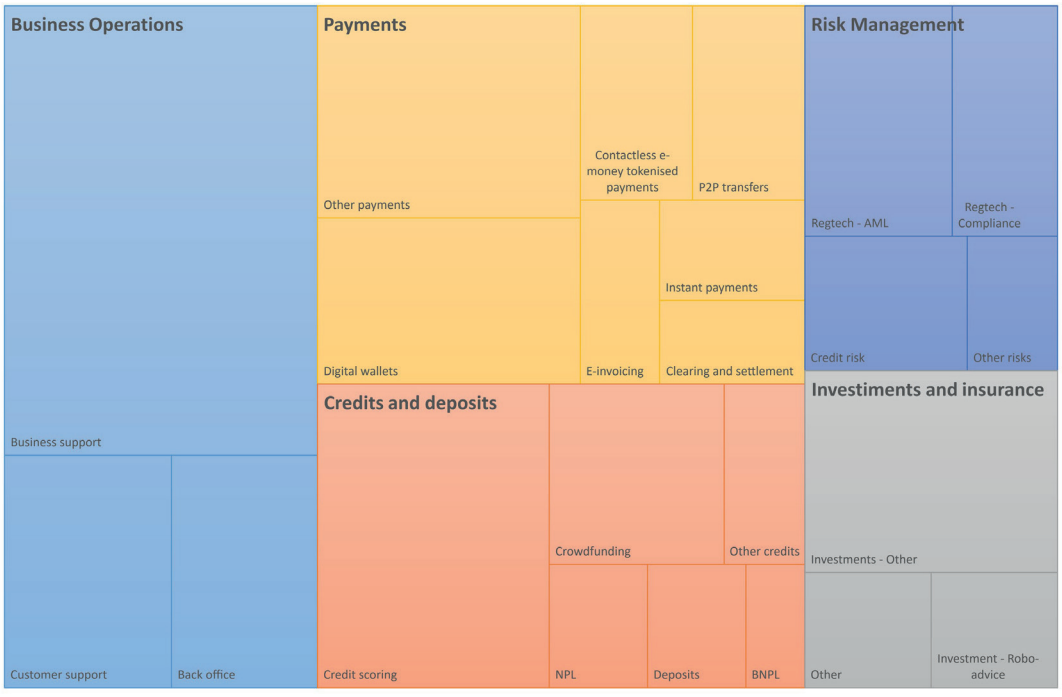
Some 81.5 per cent of partnerships take place with companies based in Italy; the remainder involve companies located in the EU (9 per cent), North America and the United Kingdom (4 per cent in both cases).

Shareholdings – The nominal value of the shares held in FinTech companies amounts to €1.114 million, five times the value observed in 2021; the holdings are held by 36 intermediaries, 8 more than in 2021. The share held represents on average 21 per cent of the company's value (16 per cent in 2021) and for 16 companies it exceeds 50 per cent.

The shareholdings relate to 97 companies (62 in 2021), mainly established in Italy, the United States and the United Kingdom (with shares of 64 per cent, 14 per cent and 7 per cent respectively). Companies are specialized in business support, payments, investment management, lending crowdfunding and insurtech; the technologies involved are mobile web applications, APIs, big data and AI.

Figure 6

IMPACT OF PARTNERSHIPS ON INTERMEDIARIES' BUSINESS AREAS



2 The effects of projects on intermediaries' governance, business model and risk profile

2.1 Governance of projects

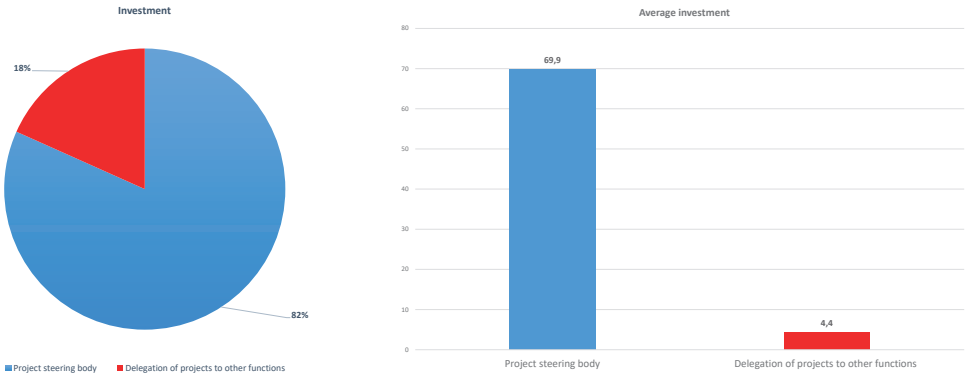
In order to manage and coordinate FinTech projects, 15 per cent of intermediaries set up an *ad hoc* steering body. The activities carried out by these units are mainly focused on: the screening of FinTech companies and of the technology providers they collaborate with; promoting the testing and development of digital technologies applied to business processes; preparing information flows to the management body; the inter-functional coordination of initiatives.

Intermediaries that set up an ad hoc steering body accounted for 82 per cent of total investments (Figure 7); this figure is in line with previous findings and shows that intermediaries which invested a lot have also made changes to their internal governance to steer the projects more effectively.

Figure 7

ORGANIZATIONAL SOLUTIONS ADOPTED

(percentages and millions of euro)



The organizational solutions adopted by intermediaries that have not set up an *ad hoc* steering vary; the coordination function is often attributed to the IT function (22.7 per cent) and to top management[17] (in both cases with shares of 7.7 per cent).

The number of project workers came to just over 2,800, accounting for around 1.3 per cent of the total staff in the sample of intermediaries (compared with 1,400 and 0.3 per cent in the previous survey); on average, each intermediary employs 20 employees with a median value of 3 workers. The small number of employees directly related to the projects reflects both the limited size of the overall investment and frequent recourse to partnerships with other companies.

17) Board of Directors and Directorate General.

2.2 Expected investments and revenues

The projects were divided according to the prevailing business areas where the greatest effects are foreseen: these are the areas of intermediation (credit, deposit and capital raising), payments, operations, risk management, investment and insurance services.

Table 2 summarizes the number of projects, investments and expected revenues broken down by area. Projects related to credit and payments are the most significant in terms of investment, absorbing 43.7 and 39.4 per cent of the total; this is followed by projects dedicated to innovation in the operations area, which accounts for 8.9 per cent, and those related to risk management and investment, with shares of 2.5 per cent.[18] The highest expected revenues are attributable to projects related to credit, payments and operations.

The breakdown of the projects by number, rather than by investment amount, which owing to some exceptionally large investments would instead have polarized the distribution around the areas of intermediation and payments, paints a largely similar picture to the previous survey. From this perspective, the area of operations becomes the most active, accounting for a quarter of the projects; risk management and investment projects also account for higher shares (14.0 and 11.4 per cent).

In order to assess the profit and loss impact of FinTech projects on banks' balance sheets, investments and revenues have been compared with the operating costs and the contribution margin. Neither exceed 1 per cent in any business area.

Table 2

FINTECH PROJECTS BY BUSINESS AREA
(units and millions of euro)

Areas	Number of projects			Investments			Expected revenues		
	New	Old	Total	New	Old	Total	New	Old	Total
Intermediation	62	35	97	767.6	50.8	818.4	653.4	275.5	928.9
Payments	38	23	61	96.2	642.5	738.7	42,6	437.6	480.2
Investments and Insurance	32	17	49	17.9	29.4	47.2	14.3	38.4	52.7
Operations	63	46	109	115.5	51.2	166.7	589.9	19.8	609.6
Risk Management	40	20	60	36.5	9.8	46.3	1.4	33.3	34.7
Other	36	18	54	22.8	33	55.8	10.7	19.4	30.2
Total	271	159	430	1,056.5	816.7	1,873.2	1,312.4	824.0	2,136.4

18) Investments in the intermediation area are mainly linked to new projects, whereas those for payments come from pre-existing projects.

2.3 Objectives of the projects

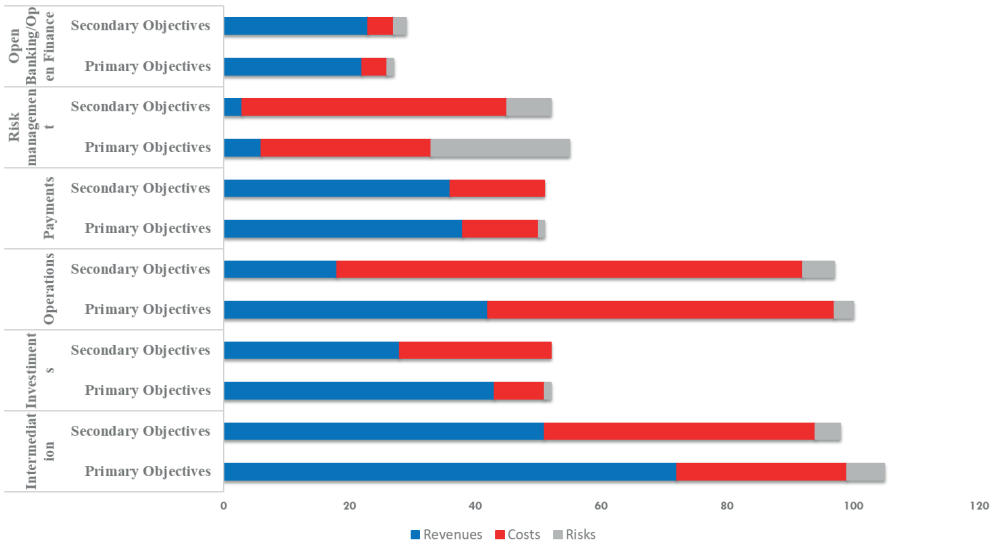
The main objectives of the projects are to increase revenues and reduce costs (Figure 8).

Revenue targets have been identified in 373 projects out of 430, and are especially prevalent in the areas of intermediation, payments and open banking.

Cost reduction objectives, identified in 333 projects, are mostly indicated as secondary objectives and are particularly commonplace in projects related to operations and risk management, where the goal is to improve operational efficiency by automating processes and modernizing IT infrastructures. Risk objectives are not widespread (34 projects) and are concentrated almost exclusively in the risk management area.

Figure 8

NUMBER OF PROJECTS BY PREDOMINANT PURPOSE
(units)



2.4 Characteristics of projects in different business areas

Intermediation – 41 intermediaries reported 62 new projects.

While very diverse, the projects can be divided into four broad categories: i) digital lending; ii) buy-now-pay-later; iii) funding and deposits; iv) lending crowdfunding.

Digital lending. This refers to the partial or entire digital provision of a loan, from the initial request to its monitoring. There are 37 projects in this category, accounting for 60 per cent of the total number of new projects. Almost half of digital lending initiatives involve the digitalization of the entire process while the remaining projects only automate some stages (see the next box 'Digitalization of credit supply').

DIGITALIZATION OF CREDIT SUPPLY

Digitalization of the entire process – Projects in this area are based on a platform that automate all phases of the credit process. Customers can interact with the intermediary at any time, following a simple and user friendly process. Among other services, these platforms offer personal loans, salary-backed loans, factoring services and lending upon pledged assets.

Digital onboarding – The innovation adopted in these projects mostly refers to the introduction of remote recognition via the public digital identity system (SPID), biometric analysis and digital signatures.

Credit scoring – Some projects use transactional data (i.e. based on current account movements or point of sale (POS) transactions), or innovative data (such as information on sustainable customer behaviour, measured, for example, by the ability to maximize driving in electric mode) for customers' creditworthiness assessments.

NPL management [1]– Innovations in non-performing loan management processes consist of: a) the development of highly automated platforms dedicated to the management of unlikely-to-pay loans or UTPs;[2] b) the use of new management software with the inclusion of Enterprise Resource Planning (ERP), which permits manual work to be reduced and ensures greater monitoring of activities; c) the integration of the Early Warning System (EWS) to strengthen the monitoring of positions, anticipating the potential credit deterioration of the counterparty, including of clients who are not in a difficult situation.

1) *Non-performing loans*: non-performing loans or exposures to entities for which, due to a worsening of their economic and financial situation, debtors are unable to fulfil all or part of their contractual obligations.
2) *Unlikely-to-pay*: likely defaults or exposures to entities whose repayment difficulties can be overcome through the restructuring of the debt position or the granting of new finance.

Payments – New projects in this area aim to develop new products and services (approximately 40 per cent), mainly offering integrated, secure and fast payment solutions and cash management tools for retail and corporate customers.[19]

The number of new initiatives using DLT/blockchain as their main technology (approximately 20 per cent) has risen. These projects aim to create digital wallets, set up systems for the execution of smart contracts, experiment the minting of stablecoins or support broader initiatives (e.g. digital euro).

Partnerships with technological firms are widespread (approximately 90 per cent of cases), mainly driven by the need to gain access to technologies and professional skills that are not available in-house (47 per cent) as well as to have the possibility of implementing projects more quickly (30 per cent).

19) The remaining 60 per cent focus on a variety of objectives, such as process optimization, customer acquisition and improvement of existing products and services.

INNOVATIONS IN PAYMENTS

Digital wallets – The largest investments were made in this area (about € 473 million), with 6 new initiatives. The goal is to offer digital wallets for cash management purposes, purchases of goods and services, and for storing assets (including those based on blockchain technologies).

Contactless and tokenized assets – These projects are characterized by low investments, although the number of projects have increased compared with the previous survey (5 initiatives against 1); they are mainly focused on the development of stablecoins and on the support of a digital euro.

Instant payments – New initiatives are being undertaken to speed up payment transactions: solutions are being developed that allow funds to be transferred in a few seconds, for instance with a link received by the user via text message.

Peer-to-peer transfers – There are 3 new projects in this area with low investments. They include solutions that use smart contracts to make payment transactions and the development of an application that allows the exchange of money between individuals via mobile devices.

Operations – The overall volume of investments generated is around € 21 million, corresponding to 18 per cent of the total. Most of the new projects are related to three main areas: back office, internal functions' support (business support) and customer support.

DIGITALIZATION OF INTERNAL PROCESSES

Back office – New projects in this sub-area mainly leverage AI and RPA technologies in order to optimize internal processes and thus reduce costs. This sub-area includes 18 projects with an overall investment of about €10 million.

Business support – Projects supporting the internal functions represent the first sub-area by investments, with an overall amount of € 72 million spread over 24 new initiatives (accounting for more than 60 per cent of new investment in the operation area). These projects are diverse; they include methods to price financial products and services, platforms for the automation of document collection, and the introduction of BOTs to support internal employees.

Customer support – This sub-area includes projects aimed at transforming customer services and communication models; it includes 12 new projects for an investment of € 13 million. New initiatives include the development of virtual assistants (Chatbots) and remote interaction systems in order to foster relationships between customers and intermediaries (video meetings).

Investment and insurance services – Projects in this area can be divided into three groups according to their purpose: investment advice and management; the development of new financial products, services and distribution channels; insurance services.

Investment consultancy and management – The majority of projects and investments are concentrated in this category. The technologies used – mainly APIs, web-mobile applications, big data, AI, cloud computing – are deployed to build digital wealth management and robo-advisory platforms and High Frequency Trading algorithms.[20)]

New products, services and distribution channels – These projects permit the widening of the range of investments available to customers (e.g. equity crowdfunding). This category also includes projects that deploy DLT technologies for trading financial instruments, such as asset tokenization projects (see the DLT box).

Insurance services – Only two new insurance-related projects have been reported, costing only € 150,000. These projects, which frequently involve partnerships with insurance companies, concern the development of a micro-instant digital insurance offer, i.e. to cover specific needs and expectations in specific contexts and times.

Risk management – The largest share of the projects (62.5 per cent) are focused on AML and compliance functions, followed by risk management (25 per cent of the new initiatives). A smaller share of the new initiatives is dedicated to internal audit innovation (12.5 per cent).

AML/Compliance – The main objectives of AML projects focus on the strengthening of customer onboarding and the monitoring of suspicious transactions (e.g. through alert models based on machine-learning algorithms). Other initiatives are dedicated to the compliance function and are based mostly on machine readable regulation, which assures the monitoring of the regulation in order to provide alerts in the event of relevant amendments.

Risk management – Half of the 10 projects reported are dedicated to the management of credit risk; the most recurrent objective is to increase the predictive ability to evaluate the Probability of Default, by leveraging alternative sources of data, such as transactional data[21)] and through the use of artificial intelligence algorithms.

Internal audit – There are five projects for the innovation of internal control activities to set up instant fraud identification processes and monitor unauthorized access to corporate databases.

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20) Automated high-frequency trading strategies designed to identify and benefit from rapid liquidity imbalances or very short-term price inefficiencies.

21) Data on transactions carried out on the current account.

CYBER SECURITY PROJECTS

There are 9 FinTech projects regarding Cybernetic Security with an overall investment of just below € 15 million; they are mainly based on AI and biometric recognition. The Cyber Security area includes projects that introduce advanced anti-fraud systems, using AI algorithms to analyze transactions made by customers in real time. Other initiatives allow for more secure customer authentication and permit the secure digital signature of contracts.

2.5 Industry analysis

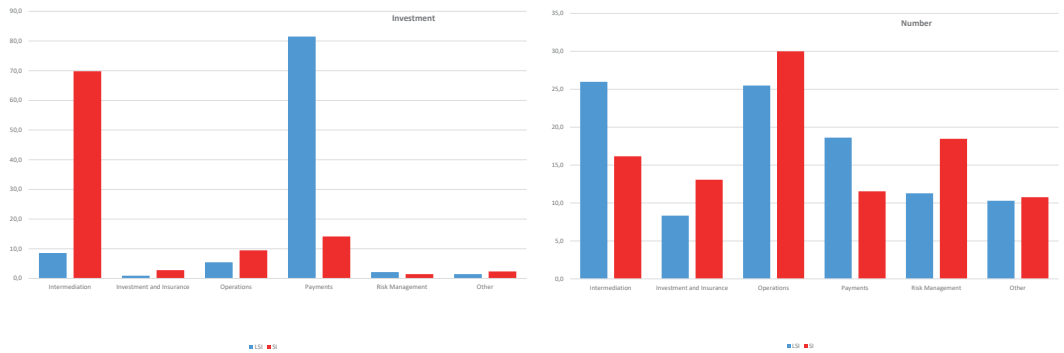
Banks – Total investments in the banking sector amount to € 1.7 billion with expected revenues of € 2 billion; they are divided between Significant (SI) and Less Significant (LSI) banks with shares of 60 per cent and 40 per cent respectively.

Investments are concentrated around the areas of payments and credit (Figure 9); if we consider the number of projects, the data show a more balanced distribution between the different areas.

Figure 9

FINTECH PROJECTS BY BANK AND BUSINESS AREA

(per cent)



Analysis of the objectives pursued by banks reveals a prevalence of revenue targets. Cost targets are mostly highlighted as secondary targets. LSIs are more focused on increasing revenues whereas SIs are more focused on reducing costs.

Non-bank intermediaries – Financial intermediaries under Art. 106 of the Consolidated Law on Banking (TUB) invest a total of € 45.1 million in projects mostly related to credit and risk management. In half of the projects, the main objective is to expand the range of products and services and to optimize processes.

Investments by Payment Institutions (PIs) investments amount to € 12.5 million and are always concentrated in payments and open banking. PIs aim to acquire new customers, by enriching the portfolio of products and services offered, and optimizing

internal processes. The majority of E-money Institutions (EMIs) investments, amounting to € 6.1 million, are also focused on payments and open banking. For EMIs, revenue targets prevail over cost reduction targets.

Asset management companies' investments amount to € 9.8 million and are focused on the development of investment functions and operations and have cost reduction as their main objective. For investment firms, all investments stem from investment-related projects with more revenue-oriented objectives.

The impact of projects on the costs and revenues of intermediaries – In order to assess the economic impact of FinTech projects on intermediaries' balance sheets, the amount of FinTech investments for the two-year period 2021-22 was compared with the corresponding operating costs (Figure 10).

The analysis shows that the impact of investments on operational costs increases for banks, PIs and asset management companies. The ratio of expected revenues to the contribution margin is characterized by lower percentages; this is due to the deferred nature of revenues compared with costs.

Figure 10

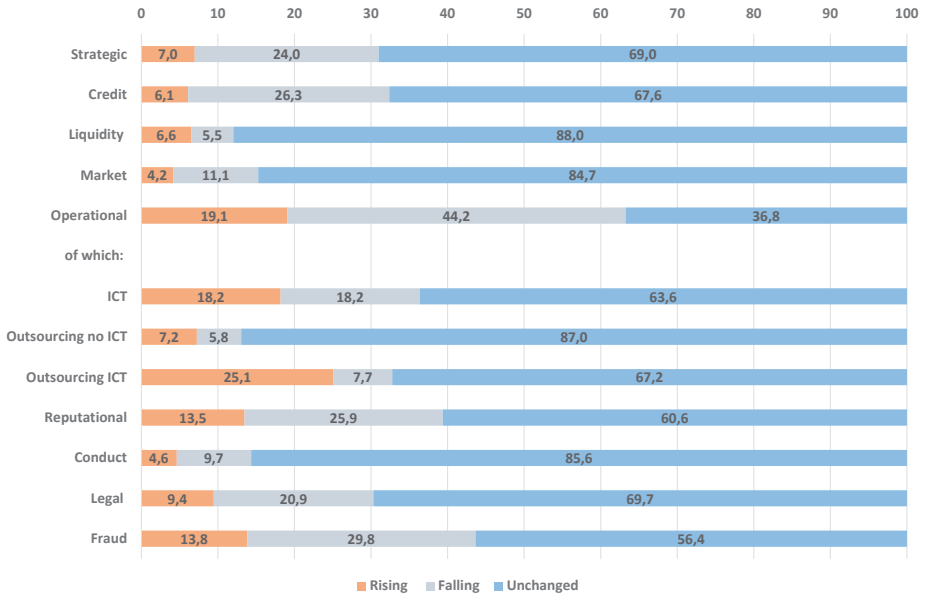
FINTECH PROJECTS BY INTERMEDIARY
(per cent)

2.6 Expected effects of projects on risks

Intermediaries foresee that the major spillover effects of projects will be on operational risks: projects leading to a reduction and an increase in these risks are equal to 44 and 19 per cent of the total, respectively. In particular, projects using RPA to automate and reduce back office processes would lead to a decrease in operational risk (Figure 11).

Figure 11

EFFECTS OF PROJECTS ON RISKS
(per cent)



Within the scope of operational risk, the greatest benefits are expected in reducing fraud, legal and reputational risks. The main solutions to reduce the risk of fraud include the introduction of facial recognition systems in onboarding procedures and the expansion of the datasets available for creditworthiness assessments. AI systems that monitor the updating of the regulation would entail a lower risk of incurring penalties and thus a decrease in legal risk; AML projects would lead to a reduction in fraud and reputational risks.

Nonetheless, the use of cloud vendors and partnerships increase third-party relationship risk, especially for ICT outsourcing. Third-party risk has become a crucial point of attention for the intermediaries.

3 *Open Banking*

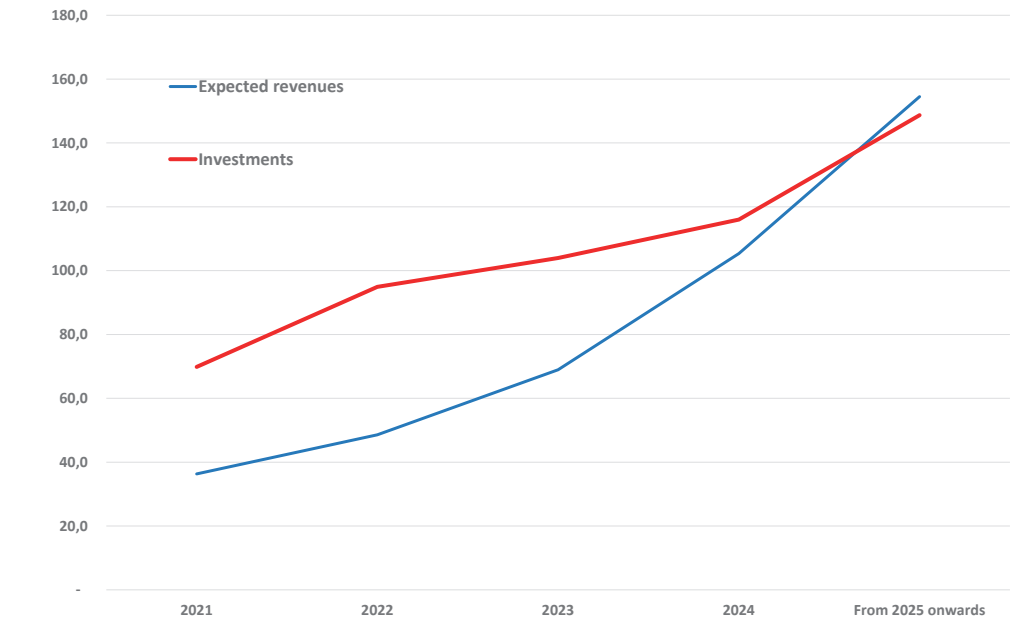
There are 60 FinTech projects related to open banking, for a total investment of €530 million. The new projects are rather limited in terms of resources (36 projects for an investment of €46 million) and in sharp decline compared with the previous survey (75 new projects for an investment of €156 million). Revenues are expected to grow throughout the period, reaching the breakeven point after 2024 (Figure 12).

The new initiatives are concentrated in payment services, digital identities, digital wallets and business support.

The payment initiation and account information services introduced by PSD2 are associated with other services, such as credit scoring, personal and business financial management, and customer due diligence. Open finance projects are still very limited. Open banking projects are technologically based on APIs and web-mobile applications; the use of AI is less commonplace.

Figure 12

INVESTMENTS AND REVENUES FROM OPEN BANKING PROJECTS
(millions of euro)



Purpose – In line with previous surveys, about one quarter of the new projects develop new products and services or solutions to digitalize and distribute traditional services and products. Compared with the latest survey, there is greater interest in projects suitable for optimizing business processes.

Recipients – More than 60 per cent of the projects are addressed to retail customers and small and medium-sized enterprises (SMEs); corporate customers account for 20 per cent of projects; moreover, there are also slightly more projects for internal

customers, which aim to develop solutions for the integration of business processes with open banking services.

Technologies – APIs, which allow intermediaries to develop their own applications from the data and IT infrastructures of third-party financial institutions, represent the core technologies of open banking projects (60 per cent of the total). No less important are web-mobile applications, present in about 45 per cent of new projects; finally, 14 per cent of new initiatives are based on AI, mainly used as API support technology. More generally, APIs and web services are interconnected and complementary: nearly 60 per cent of new initiatives based on APIs also involve the implementation of web tools or mobile apps.

4 Combating money laundering and terrorist financing

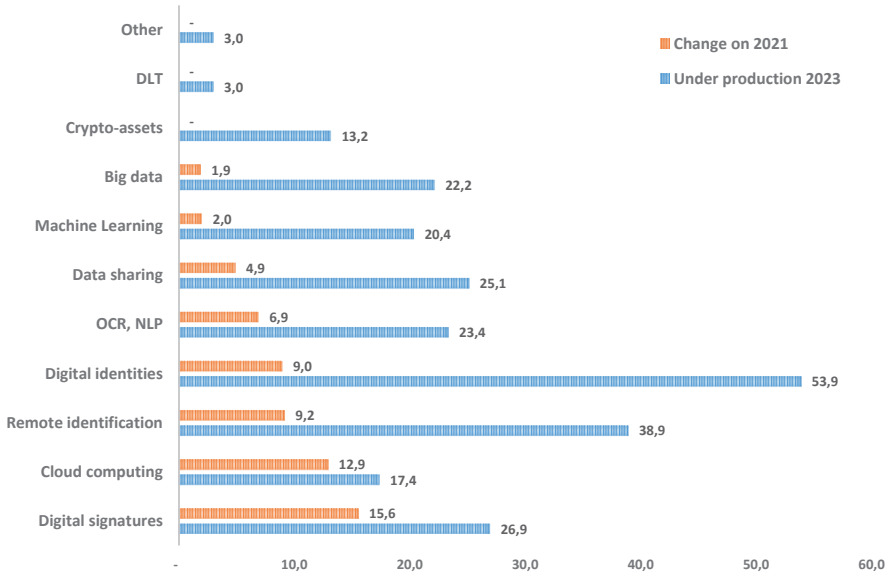
Digital technologies can make the fight against financial crime more effective and efficient; they contribute to both a more accurate and timely identification of money laundering and terrorist financing risks (ML/TF) and to the automated management of underlying workflows.

Approximately 80 per cent of intermediaries use or are about to deploy at least one innovative technological solution to meet AML requirements (62 per cent in the previous survey). The number of AML-related projects also increased significantly (from 26 to 43).

Remote due diligence remains the most innovative area; in this field the spread of regulated digital identities (the public digital identity system or SPID and electronic identity cards or CIE) has lent momentum to projects based on these tools for verifying customer identities (Figure 13).

Figure 13

DIGITAL TECHNOLOGIES AND APPLICATIONS FOR AML (1)
(per cent)



There has been a significant increase in cloud technologies and automated customer data collection systems, such as optical character recognition (OCR). By contrast, big data analytics, machine learning and information sharing systems are more limited. Several intermediaries use or are about to develop technologies for monitoring crypto-asset transactions, whereas the application of Natural Language Processing (NLP) techniques to transaction monitoring also remains limited.

On the one hand, this evidence reflects the digitalization of customer relationships, the increasing importance of ML/TF risks, the centrality of data in AML systems, and the spread of crypto-assets; on the other hand, the adoption of these technologies appears to be hindered by other issues, such as personal data protection issues.

Methodological Notes

Definitions of areas

Lending crowdfunding

Lending crowdfunding (or social lending) is a tool used to request from a plurality of potential lenders, through online platforms, repayable funds for personal use or to finance a project. It includes p2p lending.

Buy now and pay later

A service that allows consumers in digital and fast mode (so-called instant lending) to buy a good or service by paying for it in installments or simply at a later date (deferral) generally without interest.

Credit scoring

An automated system to evaluate customer financing requests that is based on the application of statistical methods or models or AI/ML (Artificial Intelligence/Machine Learning) to measure credit risk.

NPL management

Services for the innovative management of non-performing loans (NPLs), for example by envisaging the use of artificial intelligence to optimize management algorithms.

Digital wallets

Services that can be accessed via a user's device to transfer value or to store digital payment tokens. Typical examples include so-called pass-through electronic wallets. They are considered to be part of the Digital Payments business.

Peer-to-peer transfers

Electronic payment solutions that allow the funds sent to be made available to the payee immediately, regardless of the underlying payment instrument and interbank clearing and settlement arrangements. P2P solutions, mostly based on mobile devices (e.g. smartphones or tablets), allow the real-time transfer of money between individuals, including for the purchase of goods or services.

Electronic Bill Presentment and Payment (EBPP)

Services enabling the electronic transmission, navigation and payment of invoices. They are included in the activities of Digital Payments. If the service only offers the management and transmission of invoices, without payment or other related financial services, the activity is not considered FinTech.

Instant payments

Payments settled within ten seconds of the settlement of the transaction with immediate availability to the beneficiary.

Conctactless payments

Payments made by credit or debit cards, smart cards and other devices, using RFID and NFC technologies; they do not require the physical insertion of the card into the reader but only the proximity of the card to an electronic reader.

E-money payments

Payments made by electronic money.

Tokenized payments

Payments made by tokenized payment card (physical card represented digitally in a token and then stored in a customer's wallet).

Wealth and Investment Management (WealthTech)

The set of digital solutions that aim to improve the management of assets and the multiple processes that involve it. At WealthTech, companies, activities and technological/digital tools are grouped together for the management of savings, investments and personal assets as a whole. Includes Robo advice services.

Robo advice

Automated financial advice aimed at providing notices or recommendations to clients for the

purchase or sale of financial instruments. The advisory service can also be provided to the consumer through the intervention of financial promoters. The service can be integrated with other services, even non-automated, management of the investment portfolio.

Copy trading

This allows traders to automatically copy open and managed positions by a selected investor, usually in the context of a social trading network. With copy trading every action carried out by the leading investor (opening a position, buying and selling orders, stop loss and/or take profit thresholds, closing a position) is also executed in the account of the follower or copy trader in proportion to his funds.

Assets tokenization

Digital representation of a real (physical) activity on distributed databases (e.g. DLT platforms) or issuance of traditional securities in the form of digital tokens.

High frequency trading

Automated high-frequency trading strategies designed to identify and benefit from rapid liquidity imbalances or very short-term price inefficiencies.

Equity crowdfunding

Equity crowdfunding is a tool for raising venture capital through the issuance of equity instruments, issued via an online platform.

PropTech & real estate

Property Technology indicates technological solutions and tools for the innovation of processes, products, services and the real estate market. The term real estate (translation of assets or real estate) comprise all operators, products and services referring to the real estate market.

RegTech

Regulation Technology contraction, i.e. the set of application solutions based on innovative technologies that allow regulatory compliance and compliance with reporting requirements by regulated intermediaries.

Digital identity

Digital identity (ID) is the set of digital assets that are uniquely associated with a natural person, who is identified by these assets during their digital activities. Digital identity is normally presented for access to a computer system or information system or for the subscription of digital documents. In a broader sense, it consists of the set of information present online and relating to an individual.

Open Banking/Open Finance

These are services based on data sharing, in which financial information is shared, subject to the customer's consent, between banks and external companies, the so-called third parties (TPPs), to develop innovative products and services. Open finance is the application of the open banking model extended to financial and insurance services.

Insurtech

Contraction of Insurance Technology, which indicates the innovative services in the insurance market made possible by the available technology.

Cyber security and cyber resilience

All initiatives aimed at protecting IT assets (digital information, devices, systems and resources) in terms of their availability, confidentiality and integrity. Of particular importance in Fintech is the protection of personal information, accounts, files, digital wallets. The privacy of data or information concerns the proper management, processing, storage and use of personal information.

Definitions of technologies

Big data and advanced analytics

The paradigm associated with big data is commonly referred to as the Five V's, which identify three distinctive features and two expected practices of big data:

- *Volume: data available for analysis activities are often in the order of terabytes or higher;*
- *Variety: to the more traditional data of a structured nature, in this paradigm there are also semi-structured ones (such as*

XML files) or unstructured ones (such as documents or images);

– *Speed: the data are produced at extremely high rates, so it is necessary to equip ourselves with technologies capable of processing them with adequate speed (including real-time);*
– *Veracity: since data may be unreliable due to the nature of the processes of generating and collecting observations, it is necessary to ensure that they represent as closely as possible the underlying reality;*
– *Value: you need to be able to turn data into useful information for your business.*

Therefore, big data sets are defined as sets of observations that present at least one of the characteristics of high volume (in the number of observations or in the number of attributes), high variety (of content or format) and speed of production or collection, such as the use of non-traditional tools and techniques. Advanced analytics refers to the set of advanced data analysis (even unstructured) features, such as predictive analysis and visual exploration to discover not obvious relationships and correlations.

Robotic Process Automation

Software used to automate deterministic work processes through the use of automata (so-called robots), which can automatically perform repetitive tasks carried out by human operators, imitating their behavior and interacting with computer applications. RPA in the financial sector is frequently introduced to automate back office activities and in general as an evolution of workflow management systems.

Artificial Intelligence

An area of computer science that deals with the development of computer systems capable of performing tasks normally associated with human intelligence, such as reasoning, learning and self-improvement. Natural Language Processing, Machine Learning and Automated Reasoning are among the main fields of AI:

– *Natural Language Processing*: includes AI techniques whose purpose is to understand, interpret and manipulate natural language;
– *Machine Learning (Inductive Approach)*: area of AI consisting of algorithms that synthesize their knowledge on the basis of empirical observation of data, learning from them through a process of generalization;
– *Automated Reasoning:* area of AI dedicated to the formal representation of knowledge (operated through knowledge representation and reasoning languages) aimed at producing new knowledge from input data through an inference process.

Internet of Things – IOT

A paradigm in which everyday objects can be equipped with identification, detection, processing and networking capabilities that allow them to communicate with other devices and services over the Internet.

Cloud computing

Technologies that allow widespread, easy and on-demand access to a shared and configurable set of data processing resources (e.g. networks, servers, memory, applications and services), supplied and distributed quickly and with minimal interaction with the service provider. Compared to the level of control and flexibility that you want to maintain or the intensity of the delegation entrusted to the cloud service provider, three service models can be distinguished:

– *Infrastructure-as-a-Service (IaaS)*: infrastructure resources (machines, including operating system, network and storage);
– *Platform-as-a-Service (PaaS)*: basic software services on which to develop applications (e.g. databases, application servers, middleware);
– *Software-as-a-Service (SaaS)*: ready-to-use applications, which can be customized independently.

Biometric technologies

A biometric recognition system makes it possible to uniquely identify a person on the basis of biometric data (e.g. fingerprints, physical conformation of the face or iris, the timbre and tone of the voice). Biometric recognition systems are used in different areas to ensure greater security of systems, transactions and data protection.

Distributed Ledger Technologies/Blockchain (Distributed or Blockchain)

Blockchain platforms (more generally Distributed Ledger Technologies) represent networks of nodes that share distributed data

structures, in which it is only possible to add append-only information about transactions carried out according to rules shared by participants. To reach consensus on a single version of the distributed ledger and make it secure, encryption is used and consensus algorithms are used.

Open standard API

Provision of banking services through the use of open standards Application Programming Interfaces that enable the development of applications and services that use data and functions offered by the technology infrastructure of a third-party financial institution.

Advanced encryption

All initiatives using advanced cryptographic tools are included in this category, including:

- *quantum resistant encryption*: also known as post-quantum cryptography, which aims to create secure cryptographic systems against traditional systems and modern quantum computers;
- *homomorphic encryption*: this allows you to perform mathematical operations directly on encrypted data, without revealing it.

Augmented or Virtual Reality – AR/VR

Augmented reality (AR) means the enrichment of human sensory perception by means of information, usually manipulated and electronically conveyed, which enhances the amount of detail data in relation to the object being observed.

If in augmented reality the person continues to experience physical reality, but takes advantage of additional or manipulated information from reality itself, in virtual reality (VR), the information added or subtracted electronically is predominant, to the point that natural perceptions do not even seem to be present and are replaced by others. This technology allows you to navigate realistic photo settings in real time, interacting with the objects present in them through unconventional, extremely sophisticated interfaces, such as helmets with viewers on which the scene is represented and sounds reproduced, as well as through gloves (datagloves) equipped with sensors to simulate tactile stimuli and to translate movements into instructions for the software. The virtual reality experience requires you to wear devices that prevent contact with your surroundings.

Quantum Computing

This involves the use of quantum mechanics to perform complex calculations that are not otherwise feasible using traditional computational capabilities. Quantum computing means technologies that exploit (even theoretically) the computing capabilities offered by a quantum computer.

Optical Character Recognition (OCR)

Optical character recognition systems by means of programs dedicated to the detection of characters contained in a document and their transfer to digital text readable by a machine.

Web – mobile application

Distributed applications accessible/operable via the web through a network.

Digital signature

Method of identification based on asymmetric encryption, which makes it possible to manifest and verify the origin and integrity of a computer document or a set of computer documents

Other technologies

Other technological forms, other than the previous ones, underpinning innovative financial services.

Other definitions

Accelerators

Consulting program, lasting between six and twelve months, to accelerate the development of startups. It consists of the provision of a range of services, including financial services, in support of businesses.

Accelerators are the natural evolution of incubators (see below) and serve the function of encouraging meetings between investors and companies to make the latter competitive in larger markets.

Account Information Service (AIS)

Account Information Services (AIS) are governed by PSD2, which defines them as 'payment services' that 'provide to the payment service user online, aggregated on one or more payment accounts, held with another or other payment service providers, to which he/she has access through online interfaces of the account servicing payment service provider'. The payment service user can thus immediately have an overview of his or her financial situation at any given time.

Districts

Aggregation of undertakings cooperating in one or more stages of a production process – even without the existence of links with specific territories – on the basis of: the pursuit of synergies between undertakings carrying out complementary or otherwise related activities;

access to opportunities on the market that presuppose an integration of the production offer;

admission to certain special schemes provided for that purpose by law.

Incubators

The startup incubator is defined as a capital company, even in cooperative form, that offers financial resources and services to support the birth and development of innovative start-ups. An incubator must, at least:

– have adequate facilities and equipment to accommodate and support the activity of innovative companies; be administered or directed by persons with proven business and innovation expertise.