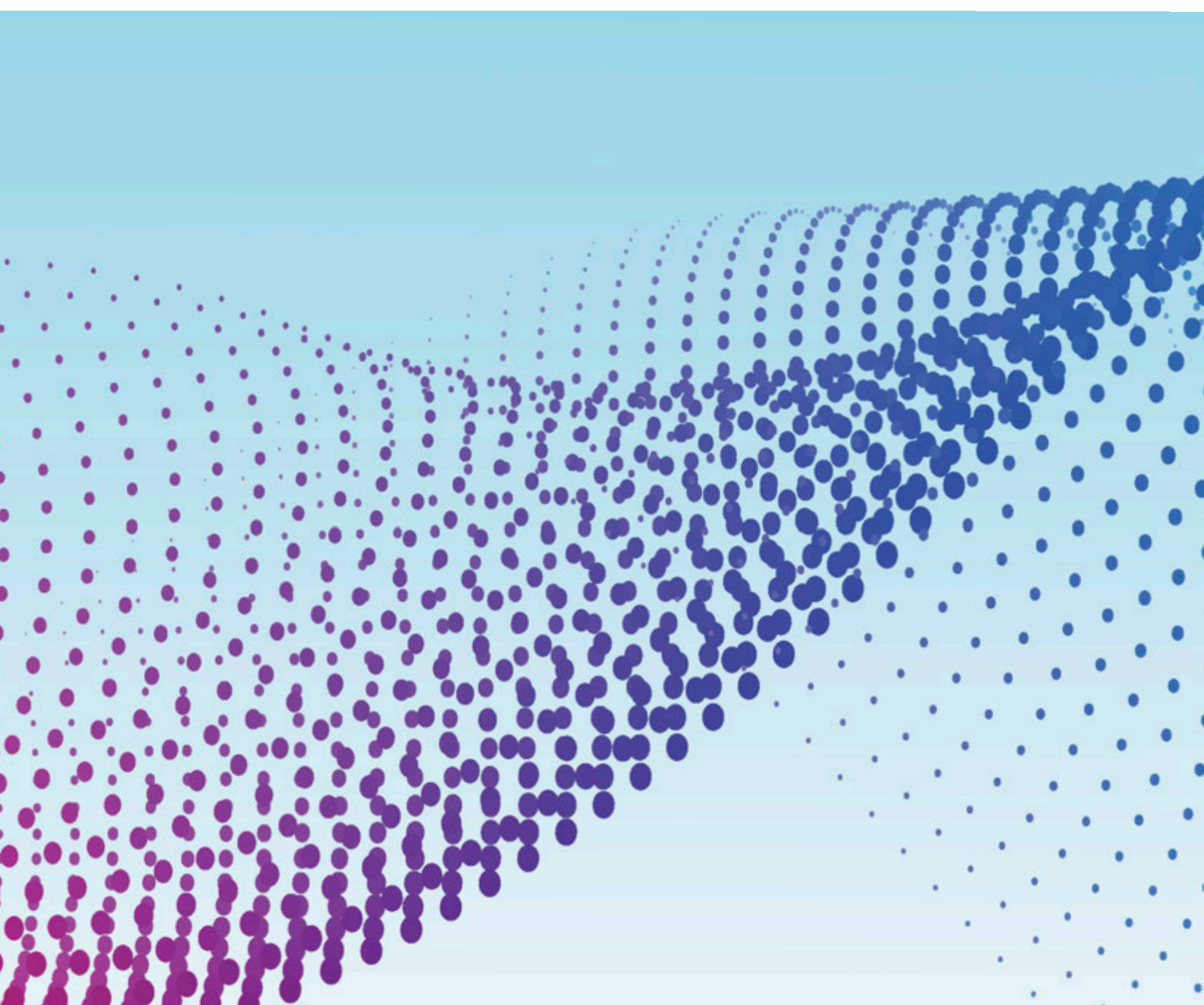


G20/OECD INFE Policy Guidance
Digitalisation and Financial Literacy



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Foreword

The digitalisation of financial products and services, and the consequent need to strengthen digital financial literacy has become an important component of the global policy-making agenda. This guidance aims to identify and promote effective initiatives that enhance digital and financial literacy in light of the unique characteristics, advantages, and risks of digital financial services and channels.

This policy guidance is for consideration by policy makers responsible for the implementation and application of key elements of the *OECD/INFE High-level Principles on National Strategies for Financial Education*, the *G20 Principles for Innovative Financial Inclusion* and the G20 High-level Principles on Digital Financial Inclusion, with respect to principle 6.

The Policy Guidance Note was developed by the OECD International Network on Financial Education (OECD/INFE), comprising now representatives from 119 economies. This note contributes to the Argentinian G20 presidency's financial inclusion agenda.

Following a consultation process with members of the OECD/INFE and of the Global Partnership for Financial Inclusion (GPII), the Policy Guidance Note has been approved by the OECD/INFE Technical Committee, the OECD Committee on Financial Markets, the OECD Insurance and Private Pensions Committee in May 2018 and has been endorsed by the GPII in June 2018. It was transmitted to the G20 Finance Ministers and Central Bank Governors at their meeting in Buenos Aires on 19-20 July 2018.

This document is complemented by G20/OECD Policy Guidance on Financial Consumer Protection Approaches in the Digital Age developed through the G20/OECD Task Force on Financial Consumer Protection. It contributes to the OECD Going Digital project which provides policy makers with tools to help economies and societies prosper in an increasingly digital and data-driven world. For more information, visit www.oecd.org/going-digital.

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Introduction

The digitalisation of financial products and services, and the consequent need to strengthen digital financial literacy has become an important component of the global policy-making agenda. The G20, beginning with the Chinese Presidency in 2016 and continuing with Germany's Presidency in 2017, has devoted considerable attention to the opportunities and challenges created by digital financial services, both for existing and for new users of financial products. This policy guidance is the logical continuation from a financial literacy perspective of such work. It will feed into the Argentinian G20 presidency's financial inclusion agenda, and will also be available as a standalone output of the OECD International Network on Financial Education.¹

Importantly, such guidance should also serve as an implementation tool to existing instruments: the *OECD/INFE High-level Principles on National Strategies for Financial Education*, the *G20 Principles for Innovative Financial Inclusion*, and the *G20 High-level Principles for Digital Financial Inclusion* endorsed by Leaders in 2016. In particular, the Guidance will be instrumental in the implementation of *Principle 6: Strengthen Digital and Financial Literacy and Awareness* of the *G20 High-level Principles for Digital Financial Inclusion*. In line with the priorities of Argentina's G20 Presidency, it is aimed at identifying and promoting effective initiatives that enhance digital and financial literacy in light of the unique characteristics, advantages, and risks of digital financial services and channels, to support their evaluation and dissemination, and to promote a responsible and beneficial development of digitalisation by building trust and confidence in the acquisition and use of digital financial services by the financially excluded.

This document is complemented by G20/OECD Policy Guidance on Financial Consumer Protection Approaches in the Digital Age developed through the G20/OECD Task Force on Financial Consumer Protection. Both notes will be part of a Policy Guide compiled by Argentina's G20 Presidency "Digitisation² and Informality: G20 Policy Guide to Harness Digital Financial Services to Individuals and MSMEs in the Informal Economy".

¹ The OECD Governments officially recognised the importance of financial literacy in 2002 with the launch of a unique and comprehensive project. In 2008 the project was further enhanced through the creation of the OECD International Network on Financial Education (INFE) to collect cross-comparable data and evidence, develop methodologies to measure impact, share experience and good practices, develop research and comparative analysis, design policy instruments, promote effective implementation and monitoring. As of May 2018, 262 institutions from 119 economies are members of the OECD/INFE.

² The terminology used by Argentina's G20 Presidency will be *digitisation* instead of digitalisation, to keep the output consistent with previous work.

Process

This Policy Guidance Note has been prepared by the OECD/INFE Secretariat, through its Working Group on Digital Financial Literacy.³ Its development has taken into account comments received from OECD/INFE members at the OECD/INFE Technical Committee meetings and through the written process, as well as work already conducted by the OECD/INFE in this domain, including:

- the responses to the questionnaire on the “implications of digital financial services for financial education and related financial consumer protection issues”;
- the G20/OECD INFE Report “Ensuring financial education and consumer protection for all in the digital age” (2017) and the Highlights presented to the G20 in 2016, and mentioned in the G20 Leaders’ Hamburg Action Plan in July 2017.

The guidance was also shared with members of the Global Partnership on Financial Inclusion (GPII) for review and comments ahead of their meeting on 7 February 2018 in Buenos Aires, and in April and May 2018.

The final draft of the guidance has been reviewed and approved in May 2018 by the OECD/INFE Technical Committee, as well as by the OECD Committees in charge of financial education: the Committee on Financial Markets and the Insurance and Private Pensions Committee. The final draft was endorsed by the GPII in June 2018. It is now transmitted to the G20 Finance Ministers and Central Bank Governors.

The development of this guidance also benefitted from the ongoing horizontal OECD project on digitalisation⁴ as well as from work being conducted by other international fora, and in particular the G20/OECD Task Force on Financial Consumer Protection and FinCoNet.

³ The Working Group on Digital Financial Literacy is chaired by Ms. Sue Lewis, Financial Services Consumer Panel, United Kingdom, Mr. Olaf Simonse, Ministry of Finance of the Netherlands and Mr. Martin Taborsky, Central Bank of Austria. Its members are: Ms. Laura Higgins, Australian Securities and Investments Commission, Ms. Elisabeth Ulbrich, Central Bank of Austria, Mr. João Evangelista de Sousa Filho, Central Bank of Brazil, Mr. Thiago Alonso Erthal Salinas, CVM Brazil, Ms. Jane Rooney and Ms. Julie Hauser, Financial Consumer Agency of Canada, Mr. Gauthier Daccord, Banque de France, Mr. David Kneebone, Investor Education Centre, Hong Kong, China, Mr. G.P. Garg, NISM India, Mr K. Srinivasan, Reserve Bank of India, Ms. Ria Prastiani, Indonesia Financial Services Authority (OJK), Ms. Roberta Nanula, Banca d'Italia, Mr. Pasquale Munafo, CONSOB Italy, Ms. Ieva Upleja, Latvia Financial and Capital Market Commission, Ms. Shahariah Othman, Bank Negara Malaysia, Mr. Pedro Garza López, Banco de México, Mr. Syed Samir Hasnain, State Bank of Pakistan, Ms. Dottie Bernas, Central Bank of the Philippines, Ms. Lucia Leitão, Bank of Portugal, Mr. Lyndwill Clarke, South Africa Financial Services Board, Mr. Emilio Ruiz, Banco de España, Ms. Nihal Değirmenci, Central Bank of the Republic of Turkey.

⁴ <http://www.oecd.org/going-digital/>

Guidance on Digitalisation and Financial Literacy⁵

Rationale

Digital technologies are increasingly integrated in the economy and are making a significant impact in the financial industry by introducing new products, services and providers. Digitalisation is affecting individuals and businesses globally, with mobile money services now available in 64% of developing countries (GSMA, 2016), and their spread is likely to increase hand-in-hand with the growing penetration rate of mobile connections (estimated to exceed 100% globally by 2020). These significant changes increase the need for effective financial education, financial consumer protection and financial inclusion policies that adapt rapidly to this changing environment.

In parallel, the application of digital technologies to personal finance management is providing new tools to support consumers and entrepreneurs in improving their financial lives and well-being. Together, digital financial services (DFS, see Box 1) and related tools have the potential to bring **concrete benefits to consumers and entrepreneurs**:

- **Extending the potential reach and access of financial services:** the digitalisation of finance offers the opportunity to achieve broad-based financial inclusion by extending the availability and penetration of digital financial services, benefitting previously unbanked sectors of the population and offering digital alternatives to encourage consumers and entrepreneurs to exit the informal sector. Alongside this, tools such as digital forms of identification make it easier for consumers to meet the necessary identification requirements, overcoming an additional barrier to inclusion.
- **Offering more convenient, faster, secure and timely transactions:** this can have positive implications in both advanced and emerging economies for both established users of financial products and the newly financially-included. The latter in particular stand to benefit from a secure digital environment even in the absence of physical banking branches or agents.
- **Providing services that are tailored to individual needs and facilitate their usage, thus creating opportunities to develop financial literacy competencies, confidence and experience with finance.** The use of consumer and entrepreneurs' data, potentially including big data, by financial services providers can generate insights into individuals' spending habits, facilitating the offer of tailored products and supporting fraud detection. Under the appropriate consumer and data protection framework, these benefits can be substantial for consumers and entrepreneurs worldwide. They also open up opportunities to integrate the low income and

⁵ Financial literacy is defined as “a combination of financial awareness, knowledge, skills, attitude and behaviours necessary to make sound financial decisions and ultimately achieve individual financial wellbeing” (OECD/INFE, 2012), endorsed by G20 Leaders.

financially excluded populations in the formal financial sector by creating alternative indicators of behaviour that can be used to assess their risk as customers.

- **Increasing opportunities for fruitful interactions between financial services providers and consumers through digital interfaces.** Such interactions can take advantage of behavioural insights, enhancing consumer and entrepreneurs' understanding of financial products and financial decisions.
- **Broadening the range of providers.** The digital revolution goes hand-in-hand with new providers entering the market and offering financial services directly to individuals through digital channels. These FinTech companies, usually focusing on one product or service, can have an impact on the level of competition in the financial market and contribute to lower costs, and offer improved experience to individuals and entrepreneurs.

At the same time, DFS also carry **new risks for consumers**, in both mature and emerging markets. These risks, if not properly addressed, may pose serious threats to the financial well-being of individuals and entrepreneurs. They can be categorised as follows:

- **Market driven:** this can include misuse of unfamiliar (or new types of) products or to uninformed consumers; new types of fraud, often taking advantage of consumers uncertainty in the digital environment; a lack of security, privacy and confidentiality of data; inappropriate or excessive use of digital profiling to identify potential customers and exclude unwanted groups; rapid access to high-cost/short-term credit or essentially speculative products (e.g. initial coin offerings), and other market practices that can reinforce behavioural biases.
- **Regulation and supervision driven:** this can encompass uneven levels of protection within (inadequate disclosure and redress mechanisms) and across countries (variety of providers, cross-border selling, regulatory arbitrage); consideration of data protection issues; a lack of coordination among authorities, for example with respect to new types of digital financial services.
- **Consumer driven:** the growing digitalisation of daily life and of financial decisions is not necessarily matched by increasing digital and financial literacy levels (OECD, 2016b; OECD, 2017c), and this is true even among the younger population (OECD, 2014; OECD 2017b).
- **Technology driven:** the increasing use of algorithms, which can affect decisions about credit or insurance and can lead to denied access to certain services or inappropriate charges based on inaccurate or wrong correlations made without human interpretation.

These risks can have a negative impact on both consumers and entrepreneurs, and can result in a range of **negative outcomes**, including, but not limited to:

- **Lack of, or uneven, trust in DFS**, the financial system and technological innovation.
- **New types of exclusion for certain groups of the population** (possibly including the elderly and those on low incomes), who might not be able to afford the use of smartphones and computers to access DFS, or due to the increasing use of data and digital profiling for credit and insurance decisions. Increased self-exclusion due to low levels of financial and digital literacy may also occur as well as a lack of familiarity with the products available and new providers.

- **Over-indebtedness** among consumers who may be vulnerable.⁶
- **Increased customer vulnerability** to possible mis-selling, phishing schemes, account hacking and data theft.

Box 1. Digital financial services: a definition from the G20/OECD INFE Report

This guidance adopts the working definition⁷ of digital financial services presented in the G20/OECD INFE report on ensuring financial education and consumer protection for all in the digital age:

Digital financial services (DFS) can be defined as financial operations using digital technology, including electronic money, mobile financial services, online financial services, i-teller and branchless banking, whether through bank or non-bank institutions. DFS can encompass various monetary transactions such as depositing, withdrawing, sending and receiving money, as well as other financial products and services including payment, credit, saving, pensions and insurance. DFS can also include non-transactional services, such as viewing personal financial information through digital devices (G20/OECD INFE, 2017).

Box 2. Women in developing economies and digital financial services

The importance of addressing the financial literacy of women and girls as a way to improve their financial empowerment, opportunities, and well-being has been acknowledged by the G20 Leader's Declaration in June 2012, recognising the need for women and youth to gain access to financial services and financial education. The digitalisation of financial services can provide effective tools to empower women, particularly in the developing world.

Women face additional barriers to men in accessing financial services (OECD, 2013): in many countries, women display lower financial knowledge than men, which, in some countries, is compounded by limited access to education, employment, entrepreneurship and formal financial markets, as well as disadvantageous social norms and legal treatment.

The digitalisation of finance can offer powerful tools to counter some of these negative variables affecting women's financial well-being. DFS can allow women greater privacy in their financial lives and help them become more autonomous, which can have a profound impact on their decision-making capacity, with positive spillovers on the entire household. Digitalisation can also favour the design of new tailored products that can better meet women's needs, increasing their familiarity with finance and ultimately giving them the opportunity to build a credit history and better plan their financial future. The possibility to access financial services without travelling to a physical office also benefits those with caring responsibilities; the majority of whom are women.

⁶ For example, as a result of immediate credit offers that play on preferences for instant gratification or high cost credit with limited checks on affordability.

⁷ See also the definition adopted by the Global Partnership for Financial Inclusion (GPFI), for which the term "digital financial services" covers financial products and services, including payments, transfers, savings, credit, insurance, securities, financial planning and account statements. They are delivered via digital/electronic technology such as e-money (initiated either online or on a mobile phone), payment cards and regular bank accounts.

Objectives

Against this backdrop, this guidance relates to the implications of digitalisation across the entire financial sector for financial literacy and financial education⁸ policies. It aims at providing non-binding international policy directions to policy makers and other relevant stakeholders (including the private sector) to:

- **Ensure that the relevant policy makers and public authorities are aware of the specific opportunities and challenges** for consumers and entrepreneurs that have been created by -and continue to arise through - the digitalisation of finance.
- **Encourage policy recognition of the need to collect timely, relevant data to better understand the development and implications of DFS for consumers and entrepreneurs**, and to distinguish the financial consumer protection issues (i.e. supply-side issues) from the issues that require specific knowledge and skills, or changes in attitude and behaviour (demand-side issues).
- **Support the inclusion of financial education for DFS elements within existing national strategies**, or develop and support relevant initiatives.
- **Identify the key core competencies** that should be developed to ensure safe use of DFS by consumers and entrepreneurs.
- **Ensure that relevant financial education is made available to future DFS consumers and entrepreneurs** through a variety of delivery channels, in order to reach those without current access to digital tools.
- **Encourage the design and use of high-quality digital tools** to deliver effective financial education; in particular by supporting positive financial behaviours and decisions.
- **Promote the evaluation of financial education for DFS** and the dissemination of results in order to learn from early adopters and share good practices.

This guidance should ultimately support policy makers and relevant stakeholders in enabling existing and, perhaps more importantly, new consumers and entrepreneurs to make the best of digital financial services. It should be implemented together with dedicated regulatory and supervisory frameworks (and in particular financial consumer protection), that take into account the developments occurring in digital finance, allowing desirable innovation in the field while identifying, monitoring and managing potential new risks. Empowering consumers by strengthening digital and financial literacy is an important part of an overall approach to financial consumer protection; this guidance therefore supports and complements the G20/OECD Task Force on Financial Consumer Protection's Policy Guidance Note on financial consumer protection approaches in the digital age to be also finalised in 2018.

⁸ Defined as "the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being" (OECD, 2005).

Policy action checklist for the design and implementation of effective financial education initiatives on DFS

This guidance note offers actionable steps in the design and implementation of financial education initiatives on DFS to strengthen the digital financial literacy of consumers and entrepreneurs. This table summarises five key areas that are addressed in more detail in the Guidance Note.

Depending on national circumstances, and on the policy actions that might already have been taken by public authorities in the context of a national strategy for financial education and/or inclusion and consumer protection measures, policy makers should make sure the following steps are considered when implementing digital financial literacy initiatives. This list does not imply that they should be implemented in a particular order. The first step – data collection – should however be considered a priority.

1. **Develop a national diagnosis of the impact of digital finance on individuals and entrepreneurs** (including potential vulnerable groups) and collect key indicators on the supply and demand side of DFS
2. **Ensure coordination between public authorities and private and not-for-profit stakeholders** involved in financial literacy and innovation in a way that avoids conflicts of interest:
 - a. Map actors providing DFS and assess the online platforms and tools used to understand the message conveyed and possible risks
 - b. Involve private and not-for-profit stakeholders in the design and implementation of digital financial literacy initiatives
 - c. Develop and enforce codes of conduct/good practices to limit and manage potential conflict of interest
3. **Support the development of a national core competency framework on digital financial literacy** of consumers and entrepreneurs to:
 - a. Build trust and promote beneficial use of DFS and related technological innovation
 - b. Protect consumers and small businesses from vulnerability to digital crime and misuse/miselling
 - c. Empower consumers to counter new types of exclusion due to the potential misuse of data sources, including data analytics and digital profiling
 - d. Support consumers at risk of over-reliance on easy access to online sources of credit

Accordingly, map existing provision of financial education and verify whether this covers financial education for DFS as described in this framework, if not promote its inclusion and/or developed tailored initiatives.
4. **Support effective delivery of financial education through digital and traditional means** and address the needs of target audiences through tailored approaches:
 - a. Exploit the advantages of digital delivery: easier access to financial education, tailored to the audience, and which can better support money management skills while reinforcing core competencies
 - b. Design an appropriate delivery mix depending on the audience, taking into account the relevance of traditional delivery for priority groups and vulnerable populations.
5. **Facilitate and disseminate evaluation of financial education programmes addressing DFS**
 - a. Encourage the use of a standardised evaluation toolkit at the national level, to better understand impact and suggest positive change
 - b. Share the results at the national and international level

Diagnosis and co-ordination

Policy makers and stakeholders with responsibility for financial education should consider the evolving nature of DFS and their implications for consumers and entrepreneurs. Consistent with existing OECD standards on financial education, they should draw on empirical evidence whenever possible, and look at ways of coordinating effective delivery of relevant content.

Data collection

Policy makers and public authorities should be fully aware of the benefits and risks created by DFS, and how these may affect consumers and entrepreneurs. Regular data collection and analysis should be considered to inform policy design and ensure an efficient prioritisation of available resources.

Depending on national circumstances, data collection should focus in particular on:

- Supply side:
 - The products and services available to consumers
 - The channels used by providers
 - If relevant, the physical infrastructure required for the safe development of DFS and the technological requirements that enable it
- Demand side:
 - Awareness of, demand for and current use of DFS across the population
 - The attitudes and behaviours of DFS users
 - The digital literacy⁹ of the population
 - The financial literacy needs of the population in relation to DFS

Data analysis should be supported by other forms of research on the issues faced by new and existing consumers and entrepreneurs when using, or attempting to access digital financial services. Such research should take place at the national and regional/international levels, and could include the use of consumer complaints in relation to DFS, as well as various forms of consumer data, potentially including big data, providing sufficient protection is in place to prevent potential data misuse. Relevant stakeholders should be encouraged to co-ordinate their responses to the findings of such data analysis and their ongoing policy and practice.

Data collection and analysis should also inform, if necessary, an adaptation of both existing regulatory and supervisory frameworks and of financial education policies and programmes.

Partnering with key non-public stakeholders

In laying the groundwork for the design and development of financial education initiatives addressing DFS and developing sustainable policies and practices, public authorities should also act in co-ordination with other relevant stakeholders. The provision of financial education in many economies

⁹ The OECD Programme for the International Assessment of Adult Competencies (PIAAC) defines problem solving in technology-rich environments as “using digital technology, communication tools and networks to acquire and evaluate information, communicate with others and perform practical tasks.” (OECD, 2016c)

takes place through a comprehensive framework or a national strategy on financial education that is under the leadership of one or several public authorities, often in co-operation and co-ordination with the private and not-for-profit sectors. Public authorities should consider broadening co-ordinated efforts to include the variety of stakeholders that are actively providing digital financial services and products, from traditional ones such as banks to non-traditional ones such as telecommunication and FinTech companies.

Policy makers should ensure that all stakeholders recognise the importance of avoiding perceived and actual conflicts of interest, and should consider developing and enforcing codes of conduct/good practices to provide a framework for their involvement in financial education activities (OECD/INFE, 2014). They should also map and monitor the educational online platforms and tools offered by the private sector and assess if the educational tools include marketing or product purchase options. Public authorities should also ensure that the data collected during the provision of education is not used to create consumer profiles or marketing lists.

Public authorities should also consider working in partnership with not-for-profit organisations active in the delivery of financial education programmes. These actors, especially when they work with vulnerable sectors of the population such as in debt counselling centres, can become valuable partners in the education on the risks and benefits of DFS.

Key policy actions

Policy makers should:

- **Identify, or collect data on the supply and demand side** (offer, provision and use) of DFS within their jurisdiction, and analyse it to inform both the regulatory framework and the content of financial education programmes. It may be possible to access data from a variety of sources, including mobile money transactions, smart contracts, open banking, or other digital records, depending on national specificities.
- **Co-operate with a variety of stakeholders**, potentially including the private sector and the civil society in the framework of a national strategy for financial education to exploit synergies and ensure that digitalisation does not create new forms of exclusion, or result in the use of financial education as a marketing tool, but rather contributes to a more effective financial education and inclusion.

Financial Literacy core competencies for the safe use of DFS

Policy makers should draw on available data and research to develop or fine-tune core competencies frameworks for the target groups identified, and develop appropriate financial education content in co-operation with relevant stakeholders.

Financial education initiatives should take into account the increasing access to, and use of digital financial services and consider the extent to which financial education has a role to play in complementing financial consumer protection measures, drawing on the findings of recent research and analysis. Such initiatives should build on the core competencies needed to improve financial well-being

and focus on the development of specific or new competencies related to the benefits and challenges created by the digitalisation of financial products.

Policy makers and programme designers can benefit from existing policy tools developed by the OECD/INFE in response to calls from G20 Leaders, and in particular the Core Competencies Frameworks on Financial Literacy for Adults and Youth (OECD, 2016a; OECD, 2015a). These outcome-based competencies frameworks include aspects of awareness, knowledge and behaviours that are considered important to achieve financial well-being. All core competencies included in the G20/OECD frameworks are considered to be important for financial consumers and entrepreneurs, and will support the safe and beneficial use of DFS.

In light of the possible new challenges and risks created by the digitalisation of finance, policy makers and programme designers should pay particular attention to those discussed in the sections below. They should also consider whether additional competencies may be required, depending on the way in which DFS develop in their country and evolve over time.

Building trust in DFS, the financial system and technological innovation

Lack of, or uneven trust in DFS, the financial system and technological innovation among consumers and entrepreneurs can hinder financial inclusion efforts, reducing the potential positive impact on individuals and the economy as a whole. Trust functions as a powerful tool in complex environments for reducing uncertainties and is particularly important in online environments (OECD, 2015b). If individuals are concerned about factors such as privacy and security, some may refrain from using digital financial services altogether, resulting in lost opportunities and digital exclusion (OECD, 2017e). Unfamiliarity with the products and providers available may further reduce trust. Policy makers should find ways to build trust through the dissemination of accurate and unbiased information about the existing regulations and systems in place to protect individuals, and the potential benefits of digital products as well as education to help them avoid falling victim of crimes. This will be particularly important for consumers and entrepreneurs with limited financial and digital literacy and those lacking awareness and knowledge of DFS and of financial services regulation. Policy makers should also monitor disclosure information provided digitally within their jurisdiction.

In this respect, relevant core competencies may include:

- Awareness of the different types of financial products and services delivered through digital means for personal or business purposes, including their benefits and risks (e.g. electronic money, mobile banking, crowdfunding, peer-to-peer lending, digital credit and insurance services, cryptocurrencies, etc.).
- Awareness that some financial products and services may be informal and unregulated, and paying particular attention when using certain digital financial services for personal purposes or for raising business funding (e.g. some blockchain-based technologies such as cryptocurrencies, initial coin offerings, etc.).
- Knowledge of consumer rights and obligations in the digital world, and knowing that the same applies to regulated financial services providers that, even when operating online or virtually, have a duty to treat customers fairly and to ensure information is clear and transparent.

- Understanding the implications of digitally signing a contract and accepting the terms and conditions of a financial service provider.

Accordingly, policy makers and programme designers should encourage consumers and entrepreneurs to:

- Know where to check, when possible, that a digital financial service provider is authorised by the relevant national financial authorities.
- Understand their responsibility to read and check their understanding of product information and disclosure documents, even when provided electronically.
- Keep abreast of new digital developments in finance and follow them closely and on a regular basis.

Empowering consumers, including the most vulnerable, to counter new types of exclusion due to the misuse of various data sources, including big data, and digital profiling

The digitalisation of the economy affects various aspects of everyday life and leads to an ever growing digital footprint of each and every consumer and entrepreneur. Not only financial service providers (banks, credit card companies, etc.) but also other players such as online retailers, crowdfunding and peer-to-peer lending platforms, social network platforms, Internet Service Providers (ISPs), and governments are increasingly collecting vast amounts of personal data. Individuals are confronted with new uses of data such as the broader aggregation of their personal information through ‘algorithmic profiling’ by which service providers can potentially discriminate individuals and offer different prices or services based on the information they have access to, behavioural targeting and audience segmentation. In the insurance sector, this could lead to the possibility of certain segment of the population becoming uninsurable (OECD, 2017d). While wider regulatory discussions take place on the use of data and its impact on policyholders’ rights and choices, policy makers should also identify approaches to foster behaviours that can protect consumers and entrepreneurs from any negative consequences of such developments.

Policy makers should make sure that consumers and entrepreneurs are aware that they do have a digital identity and may have rights to data portability and to be digitally forgotten (i.e. erasure of their personal data as per the European Union’s new General Data Protection Regulation), and understand that their digital footprint can be used to tailor the offer of certain products and services. Whilst the latter may facilitate inclusion generally, it can also lead to differential rates and even exclusion from certain offers.

Efforts should be made to prompt consumers and entrepreneurs to:

- appropriately manage their digital footprint to the extent possible, avoid engaging in risky behaviours involving their personal data, and understand the consequences of sharing or disclosing personal identification numbers, account information, or other identifying information such as address, birth date or government-issued numbers whether digitally or through other channels;
- assess the kind of information that is requested by (financial) service providers to decide whether it is relevant and understand how it may be stored and used.

Supporting consumers at risk of over-reliance on easy access to online sources of credit and potential over-indebtedness

Policy makers should provide guidance to consumers and entrepreneurs on money management in a digital environment, including keeping track of financial services bought online and managing statements, and ensure that consumers know how to compare and choose digital financial services. Credit may be an area of specific concern, due to the increasing availability of short-term credit¹⁰ provided digitally, and often almost instantaneously. Such credit is often expensive, and accessible to consumers with limited means for repayment. This might pose particular risks for certain groups of the population, such as young people and students, and low-income consumers.

Policy makers should ensure that consumers and entrepreneurs:

- are aware that marketing and simplified online lending processes can increase the temptation to access credit without considering the consequences, playing on well-known behavioural biases, and understand the importance of seeking to manage these temptations;
- understand that their data may be used to create a profile or digital record of personal factors such as their price sensitivity, their demand for credit as well as repayment history, and its implications;
- are aware of the costs and risks in the repeated use of rotating credit facilities and digitally provided short-term credit;
- know how to research and compare the different types of digital and traditional forms of credit available, the intended use of different types of credit, and the main advantages and disadvantages of each one;
- are aware of the extent of regulation and consumer protection relating to the products they use, including credit accessed through digital means.

Consumers and entrepreneurs should be prompted and supported to:

- take steps to limit the negative consequences and avoid creating a habit of using easy-access credit in a digital landscape;
- make informed choices about whether to use credit (particularly considering its consequences), and – if so - which credit products and providers to use;
- monitor their overall credit use, taking into account all outstanding loans and debt, including those accessed through digital means;

¹⁰ There is not a commonly accepted definition of short-term credit among all jurisdictions. Work conducted by FinCoNet, the International Financial Consumer Protection Organisation, in the field of consumer credit define high-cost short-term consumer credit as “the practice of lending to consumers: (i) amounts of money that are small relative to other forms of credit in the market, (ii) for short periods of time, most commonly under 12 months, (iii) at a rate that is considered to be high compared to other products in the market” (FinCoNet, 2017).

- understand that the non-payment of digitally provided credit may have negative implications beyond future access to DFS.

Protecting consumers and small businesses from increased vulnerability to digital crimes such as phishing scams, account hacking and data theft

It is vital to raise awareness among consumers and entrepreneurs of the ways in which DFS and digital technologies can expose them to digital crimes and abuse such as online fraud, phishing, social engineering scams, account hacking attacks or data theft. They should be provided with information about how to recognise such activities, and their responsibility to take steps to minimise their risks (FinCoNet, 2016; 2018). They should also be aware of innovations and policy changes in their countries (such as open banking and account aggregation tools), and understand the opportunities they can provide. They should also have information about the extent of their rights to redress and recourse (including to digital oblivion) in the event of falling victim to such attacks. This is particularly relevant for entrepreneurs, who face distinct challenges in managing digital security and privacy risk (OECD, 2017e).

At a minimum, consumers and entrepreneurs should be made aware of:

- the existence of online fraud and of cyber security risks when choosing and using DFS for personal and business purposes and making financial transactions online, including when using account aggregation tools (“screen scraping”);
- the possibilities offered by account aggregation tools where these exist, and how to use and stop using such tools safely given that they are providing access to their account information to third parties;
- the existence of redress mechanisms and how to access them in case of need;
- how to complain about online products and services to a relevant body in their jurisdiction.

Accordingly, they should be supported and enabled to:

- comply with security procedures when making transactions online; and to
- make complaints when necessary (including digitally).

Key policy actions

Policy makers should:

- **Design communication campaigns** to alert individuals and entrepreneurs of the existence, benefits and potential risks of DFS (e.g. large scale awareness campaigns, enhanced national education websites and curriculums, digital financial literacy roadshows and programmes, financial and digital empowerment seminars and exhibits, etc.).
- **Inform consumers and entrepreneurs** about where to find information on DFS providers (e.g. through national consumer protection portals), new DFS (e.g. initial coin offerings) and their related benefits and risks, as well as on any applicable financial consumer protection rules.
- **Develop effective financial education initiatives covering DFS** and integrate the digital financial literacy core competencies outlined in this Guidance in the content of the national financial education programmes, paying particular attention to the needs of the most vulnerable target groups.
- **Ensure that consumers are aware** of their potential exposure to digital crimes, and their rights and responsibilities in relation to these.

Effective delivery of financial initiatives addressing the safe use of DFS

Policy makers should ensure that financial education for DFS is made available through all relevant delivery channels including those accessed via digital tools, and evaluate the effectiveness of programmes regularly.

Financial education programmes are more likely to be effective when they are designed for specific target audiences and tailored to their needs and financial literacy levels, and when they apply the most appropriate delivery methods available. Policy makers should therefore consider promoting digital financial literacy via traditional and existing delivery methods as required, as well as by harnessing the opportunities for improved decision making and behavioural change provided by digital tools.

Harnessing the opportunities for consumers and entrepreneurs offered by digital tools

Digital tools can complement and leverage traditional financial education approaches and mechanisms and be particularly useful to provide vulnerable and hard to reach groups with actionable and digestible guidance to help them navigate unfamiliar and ever more varied and potentially complex digital financial products. Policy makers and programme designers should therefore take advantage of the opportunities provided by digital delivery tools whilst still recognising the importance of traditional ones.

Particular advantages to be harnessed or taken into account include: their interactive and agile nature; their increased adaptability to consumers' learning needs (in terms of time, rhythm, format and space); their user-friendliness; and their power to appeal to younger audiences. In this context, higher levels of financial literacy and well-being may be achieved by using digital tools, particularly to:

- Improve access to financial education:
 - Making financial information, instruction and training more affordable and accessible, by reaching larger audiences (both consumers and trainers) at a lower cost.
 - Making financial education more palatable for all, given the opportunity to depict information in a flexible, dynamic and graphic way more easily adapted to the target audience (including through the use of multiple languages and facilities for users with vision or hearing impairment).
 - Tailoring financial education to individual needs, through the possibility of setting up profiles or accounts on digital platforms and obtaining personalised information, instruction and advice.
- Reinforce core competencies, confidence and experiences with DFS: technology potentially allows individuals to test financial concepts and products in real time, learn by trial and error, and experience failure in a controlled (and artificial) environment, thereby help shaping consumers' habits and attitudes to finance, as well as increase their personal confidence (e.g. through interactive online/mobile games) – thus strengthening the overall financial decision-making process.
- Enhance money management skills and control over finances, through digital tools such as budgeting/spending meters, financial goal trackers, as well as through long-distance learning (e.g. through instructional videos and online courses), particularly amongst vulnerable populations.
- Address, and possibly overcome, consumers' personal biases (confirmatory bias, post-purchase rationalisation, short-termism, etc.), through self-applied nudges or just-in-time information.
- Incentivise positive financial behaviours through personal goal setting, feedback mechanisms and reminders.

The inclusion of digital financial literacy in traditional tools

Financial literacy for DFS can be provided within traditional programmes and initiatives that are already in place as part of national strategies for financial education or focusing on specific target audiences.

Programmes targeting the whole population, such as awareness campaigns and educational websites, should be updated regularly to include elements that are necessary to empower consumers in their use of DFS and their experience with digital finance.

Traditional delivery methods, alone or in combination with digital ones, should also be used to address the needs of specific target audiences, for instance:

- Young people can be supported through the formal school curriculum: wherever this includes financial education, its content should be enhanced with financial education for DFS, even more so in the light of the use of digital tools and the preference for digital experiences of the younger generations, which may outweigh those of their parents.

- The needs of entrepreneurs can be met by tailored initiatives such as business focused workshops and training, dedicated apps and online sharing/coaching platforms and group discussion.
- Women, including female entrepreneurs, can be supported through focused empowerment seminars, self-help groups and online chats or discussions.
- Other interventions such as conferences, relevant websites, and hackathons can also be used to develop software products and applications to attend to the needs of migrants and their families.
- Older generations, especially those already using DFS, can be helped through a combination of financial education and strong financial consumer protection to avoid unintended outcomes, including the risk of falling victim of fraud. Digital literacy may also need to be improved among older populations in both developed and emerging economies.

Key policy actions

Policy makers should:

- **Support the design and use of digital tools to deliver financial education**, and closely monitor new tools and platforms created by the private sector to ensure that any provision of financial education is free from marketing, profit-seeking or other commercial purposes.
- **Include digital financial literacy in the programmes delivered in a non-digital manner**, in particular in those targeting vulnerable populations.

Market and regulatory trends offering digital solutions to enhance financial literacy and support effective financial inclusion

Market evolutions and regulatory changes are favouring the emergence of digital financial tools provided by the private sector that can have a positive impact on financial literacy and inclusion levels.

Robo-advice and digital investment platforms

The digitalisation of finance is also affecting the provision of financial advice which might, in turn, contribute to more effective financial inclusion and increased participation in capital markets. The emergence of robo-advice – platforms automating the advice process based on information supplied by the user – can provide an alternative to traditional financial advice, especially for consumers with low and moderate incomes.

These platforms can offer potential benefits to consumers: lower costs, easier access, transparent fee structures and (in theory) objectivity. They can also make financial inclusion in its broadest sense more effective, as they are designed to be user-friendly and easy to navigate even for individuals and entrepreneurs with no advanced knowledge of investment.

Market and regulatory trends offering digital solutions to enhance financial literacy and support effective financial inclusion (cont.)

However, policy makers should ensure that individuals and entrepreneurs have sufficient understanding of the financial decisions taken and that they are capable of making an assessment of the recommendations they receive, as well as of the functioning of robo-advice itself. Before considering robo-advice, they should understand whether they are receiving financial advice (which, depending on the jurisdiction, might be regulated) or are rather accessing execution-only services or guidance (in which case the liability for the investment decision is with the consumer). They should also be prepared to shop around for a platform that meets their needs, and understand how their data are being stored and used once they enter them into such platforms. It is thus recommended to include robo-advice and digital investment platforms in the content of financial education programmes addressing DFS.

Budgeting apps and other personal financial management tools and services

Today, personal financial management has become easier and widely available through innovative budgeting, savings and investment mobile apps and web services. Such money management tools allow consumers to have a global view of their financial situation from their mobile or internet devices through account aggregation systems. This user-friendly manner of keeping track of spending patterns and expenses, savings and investments can improve financial decision-making and benefit consumers and entrepreneurs.

Digital nudges and apps to limit behavioural biases

Digital channels can help counteract the negative impact of consumer and entrepreneurs' inherent biases on financial decision-making by nudging them into action (e.g. through automated reminders to save or pay back a loan) and enhancing opportunities for financial behaviour changes (e.g. through virtual price/product/offer comparison and just-in time reminders at the point of sale or immediately after). New technology such as savings apps can for instance help address both procrastination related to saving and, to the extent saving takes place automatically behind the scenes, loss aversion.

Monitoring and evaluation

Policy makers should promote and support the evaluation of the impact and effectiveness of both financial education programmes addressing DFS and the digital tools chosen to achieve financial education outcomes. Wherever digital delivery tools are used, consideration should be given to capturing data directly to facilitate cost-effective monitoring and evaluation, whilst taking into account all applicable data protection rules and ethical considerations.

Evaluation evidence will allow policy makers and programme designers to gain insights into the links between financial education and digital literacy, as well as the necessary policy mix that can better support consumers and entrepreneurs and enhance their financial well-being through financial education. By scaling-up of programmes that have been shown to be effective, resources can be used more efficiently to support more individuals.

Consideration should be made to applying a standard framework for evaluation and reporting, to facilitate the comparison of results and to encourage further research on the data if possible. Ideally, such a framework will draw from existing tools developed at the international level (OECD/INFE 2010a, OECD/INFE 2010b).

Key policy actions

Policy makers should:

- **Promote the evaluation of financial education programmes covering DFS**, whether delivered digitally or traditionally, and dissemination of the findings to enhance knowledge of what works and does not work.
- **Consider the use of big data** (gathered from a variety of sources such as government records, mobile apps or online platforms) for the evaluation of financial education programmes delivered digitally.

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ABOUT THE “G20/OECD INFE POLICY GUIDANCE ON DIGITALISATION AND FINANCIAL LITERACY”

This Policy Guidance Note prepared by the OECD/INFE aims to identify and promote effective initiatives that enhance digital and financial literacy in light of the unique characteristics, advantages, and risks of digital financial services and channels. It is for consideration by policy makers responsible for the implementation and application of key elements of the OECD/INFE High-level Principles on National Strategies for Financial Education, the G20 Principles for Innovative Financial Inclusion and the G20 High-level Principles on Digital Financial Inclusion.

This policy guidance is complemented by G20/OECD Policy Guidance on Financial Consumer Protection Approaches in the Digital Age developed through the G20/OECD Task Force on Financial Consumer Protection.

ABOUT THE OECD AND ITS INTERNATIONAL NETWORK ON FINANCIAL EDUCATION

OECD governments officially recognised the importance of financial literacy in 2002 with the launch of a unique and comprehensive project. In 2008 the project was further enhanced through the creation of the OECD International Network on Financial Education (OECD/INFE) to collect cross-comparable data and evidence, develop methodologies to measure impact, share experience and good practices, develop research and comparative analysis, design policy instruments, promote effective implementation and monitoring. As of May 2018, 262 institutions from 119 economies are members of the OECD/INFE.

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This report contributes to the OECD Going Digital project which provides policy makers with tools to help economies and societies prosper in an increasingly digital and data-driven world. For more information, visit www.oecd.org/going-digital.

