

Interim Report

The Committee for Promoting
Use of Advanced Means of
Payment in Israel

November
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Table of Contents

1. Introduction	2
2. Executive summary	3
3. Introduction	6
4. Overview of advanced means of payment world-wide	8
5. Overview of advanced means of payment in Israel	10
6. Advantages of using advanced means of payment.....	17
7. Alternatives for conducting transactions using advanced means of payment in the current payment systems	19
8. Barriers to using advanced means of payment.....	23
9. Risk associated with use of advanced means of payment	26
10. Legal aspects related to promoting use of advanced means of payment.....	31
11. Summary and recommendations	33
12. Glossary of terms	39
13. Committee members	41

1. Introduction

The payment system in Israel has been in constant flux over recent years, due to implementation of various reforms, technology developments and global developments. Such change leads, *inter alia*, to promotion of ventures involving advanced means of payment by the banking system in Israel, as well as by private companies.

The Joint Committee on Advanced Means of Payment was established in March 2014, in order to regulate advanced means of payment in aspects of information security, AML (anti-money laundering) and terror financing, business continuity, competition, stability and efficiency - so as to encourage the public in Israel to expand the use of advanced means of payment. Such regulation is highly important and therefore, the Committee was required to refer to several key aspects: The outline to promote use of advanced means of payment, the frequent technological changes which affect the use of advanced means of payment, securing transactions involving advanced means of payment with emphasis on information security, cyber risk and fraud as well as consumer protection.

The Committee considers that use of advanced means of payment as part of the payment system in Israel should be promoted by combined regulation of the legal, technology and consumer infrastructure. This includes, *inter alia*, regulation of the legal basis for operations involving advanced means of payment and setting up a new retail payment system for rapid settlement of payments made using advanced means of payment, including a secure national communication infrastructure.

This interim report was created after the Committee has reviewed in depth the promotion of use of advanced means of payment in Israel. Public comments on this report are an important component in successfully achieving its objectives.

I wish to thank those who have appeared before the Committee and contributed of their experience. I am especially thankful to my colleagues, Committee members from the Prime Minister's Office, Anti-Money Laundering and Terror Financing Authority, Tax Authority, Ministry of Justice, Antitrust Authority, National Cyber Bureau, National Information Security Authority, State Attorney's Office, Israeli Police and the Bank of Israel – they have all invested significant time and effort in creating this report.

Sincerely,
Irit Mendelson, Committee Chair
Director of the Accounting, Payment and Settlement Systems Department
Bank of Israel

2. Executive summary

Recommendations made by the Committee on Reducing Use of Cash in the Israeli Economy, designed to reduce the shadow economy in Israel ("the **Locker Committee**") indicated the need for promoting advanced means of payment in Israel, as an alternative to paper-based means of payment (cash and checks).

The Joint Committee on Advanced Means of Payment was established in March 2014, in order to regulate advanced means of payment (hereinafter: "the **Committee**"). The Committee focused on reviewing the promotion of use of advanced means of payment, which would contribute to increased competition, efficiency and security of the payment system in Israel. The Committee has reviewed advanced means of payment in Israel and world-wide, including digital check, electronic wallet, cellular payments and online payments (Business to Business (B2B), Business to Person (P2B), Person to Business (P2B) and Person to Person (P2P)), with emphasis on the risks involved in the use thereof, required regulation and infrastructure. It should be noted that advanced means of payment do not necessarily exist separately from currently existing means of payment – cash loading, bank transfers, direct debit or debit cards – but in many cases they are based on such currently existing means and make use of existing infrastructure and payment systems in Israel. Currently, most advanced payments in Israel are based on payment cards; however, the Committee envisages the development of a range of payment options, including transfer of monetary value through new entities which would provide payment services, payments made directly from bank accounts as well as development of other payment solutions.

Use of advanced means of payment offers multiple advantages, including: Reduced use of cash and reduction of the shadow economy in Israel; increased competition through introduction of new entities, who would provide payment services for the payment system; creating a situation where an entity that has developed an advanced means of payment has a competitive advantage over other entities in the payment system; reduced transaction costs compared to other means of payment; documentation of transactions involving the means of payment; convenient use for customers – both payer and payee – and availability to customers. Furthermore, use of advanced means of payment would allow for digital monitoring of transactions, which would be documented and identifiable in the financial system and in payment systems. In order to benefit from advantages of advanced means of payment, the Committee recommends, *inter alia*, to set up advanced national settlement infrastructure, to include secure communications for retail payments and to regulate these means of payment and payment services.

Note that along with the aforementioned advantages, advanced means of payment also include various legal aspects, including consumer protection and various risk factors, primarily cyber risk and AML and terror financing risk. The typical flexibility of advanced means of payment and use of advanced computer platforms may expose users to impersonation, abuse, fraud and non-receipt by various entities. Furthermore, the multitude

of methods for payment transfer, along with competition for clients, may impact security of operations using such means of payment. The Bank of Israel and relevant entities are considering and monitoring such risk factors and are prepared to address them.

In order to enable promotion of use of advanced means of payment, the Committee was required to refer to payment systems, payment service providers and clients (both businesses and individuals) from various aspects, including: (a) Technology aspects: Absence of a settlement system which consolidates approvals of transactions made using advanced means of payment, a system to enable settlement of all advanced means of payment in operation currently (and in future) in Israel. Absence of secure communication infrastructure – from the end client to the payment system – for making payments using advanced means of payment; (b) Legal aspects: Adapting the legal framework to operation of advanced means of payment, including generally accepted international standards for AML and terror financing, consumer protection, obligations and responsibilities of all entities involved in the transaction execution chain using advanced means of payment; (c) aspects of consumer education and creating consumer confidence to promote use of newer, less familiar technology than currently existing means of payment.

In conformity with the foregoing, the Committee considers that use of advanced means of payment as part of the payment system in Israel should be promoted by combined regulation of the legal, technology and consumer infrastructure. Therefore, the Committee recommends as follows:

1. **Set up central settlement infrastructure and secure national communication infrastructure for making payments using advanced means of payment.** The Committee considers that a new retail payment system should be created for faster settlement of payments using advanced means of payment, concurrently with creation of secure communication infrastructure to promote the use of such means of payment. Accordingly, a sub-committee would be created, led by the Bank of Israel with participation from the National Cyber Bureau and the National Information Security Authority, to create and formulate the business model for operation of the new payment system. The sub-committee shall submit its recommendations within 1 year from publication of this report.
2. **Draft a bill to regulate payment services, payment account and settlement and issuance services.** The Committee proposes uniform lateral regulation of all services provided by payment service providers. Such regulation should include and refer to, *inter alia*, consumer aspects, mandatory compliance by payment service providers with AML and terror financing directives, mandatory compliance with information security standards and other requirements. Such regulation would be addressed by a sub-committee led by the Bank of Israel with participation from the Ministry of Justice, Ministry of Finance and Antitrust Authority. The sub-committee shall formulate the draft bill within 1 year from publication of this report.

3. **Adapt current legislation to operations involving advanced means of payment.** The Committee considers that constant review and adaptation of existing legislation in Israel is required, with reference to three key elements: users of advanced means of payment, financial service providers and payment systems. In this regard, legislative amendments should be reviewed to support regulation of AML and terror financing aspects of operations of payment service providers, in conformity with accepted international standards (FATF).
4. **Promote Point of Sale (POS) infrastructure to allow for contactless transactions.** The Committee considers that the expected changes in the payment system in Israel due to implementation of the outline of market transition to the EMV standard provide an opportunity to promote use of advanced means of payment by creating POS infrastructure to support contactless transactions and multiple applications.
5. **Review the transaction execution chain for digital checks.** The Committee considers that given the extensive use of checks in Israel and given the objective of reducing the scope of the shadow economy, a review should be conducted of how to integrate digital checks as a means of payment in the payment system in Israel. In this regard, the transaction execution chain for this means of payment should be reviewed, including aligning the legal infrastructure for such operations and looking into creating a new, dedicated settlement infrastructure.
6. **Promote consumer education and generate consumer trust in advanced means of payment.** The Committee considers that promoting the use of advanced means of payment requires extensive consumer infrastructure, including financial education and introduction of these means to the public at large.

The Committee will continue to implement the outline of recommendations made in the report by the Committee on Reducing Use of Cash in the Israeli Economy ("the Locker Committee") and the recommendations arising from this report. The Committee will also continue to monitor developments in advanced means of payment in the Israeli payment system.

3. Introduction

In September 2013, the Government decided to establish a Committee - headed by Mr. Harel Locker, Director General of the Prime Minister's Office - to review the reduction of unreported capital and money laundering through restriction and reduction of use of cash and other means of payment, designed to expand the tax base (hereinafter: "the **Locker Committee**"). This Committee was authorized to formulate a policy outline which would gradually reduce the use of cash and other paper-based means of payment, including restrictions on negotiability of checks - and to draft a proposal on providing incentives and removing obstructions to encourage use of electronic advanced means of payment. The Committee's report was approved by the Government in October 2014¹.

In conformity with recommendations made by the Locker Committee, the Joint Committee on Advanced Means of Payment in Israel (hereinafter: "the **Committee**") was established in March 2014. The Committee Chair is Ms. Irit Mendelson, Director of the Accounting, Payment and Settlement Systems Department at the Bank of Israel. Committee members include representatives from the Prime Minister's Office, Israel Money Laundering and Terror Financing Prohibition Authority, Israel Tax Authority, Ministry of Justice, Antitrust Authority, National Cyber Bureau, National Information Security Authority, State Attorney's Office, Israel Police and the Bank of Israel.²

The Committee was created to regulate advanced means of payment in aspects of information security, AML and terror financing, business continuity, competition, stability and efficiency - so as to encourage the public in Israel to expand the use of advanced means of payment and provide a response to existing risk associated with use of such means of payment, including AML and terror financing risk, cyber risk and other risk factors.

The Committee members received overviews on issues related to advanced means of payment, including overviews of the payment and settlement system in Israel, advanced payment solutions world-wide, risk with regard to AML and terror financing, mapping of current regulations of the payment system in Israel and overseas and proposed solutions to promote use of advanced means of payment. The Committee also invited interested parties to present to the Committee their solutions for safe and efficient advanced means of payment with regard, inter alia, to digital checks and electronic wallet³.

The Committee summarized its major recommendations with regard to the steps required in order to promote the use of advanced means of payment and is bringing its recommendations for review by the public. These recommendations are designed to promote use of advanced means of payment and to promote development of solutions which would promote the use of advanced means of payment through infrastructure which would allow for competition,

¹ <http://www.pmo.gov.il/Secretary/GovDecisions/2014/Pages/govdec2115.aspx>

² Committee members are listed in Chapter 13.

³ <http://www.boi.org.il/he/PaymentSystem/Documents/להברות20%פומבית20%הזמנה.pdf>

efficiency, security, reliability and convenience. The report provides an overview of means and solutions for advanced electronic payments in Israel and overseas, the advantages of using them, alternatives for conducting transactions using advanced means of payment in the current payment systems, legal aspects with regard to promoting use of advanced means of payment, the risk associated with using such means of payment and the obstructions to the use thereof.

4. Overview of advanced means of payment world-wide

The global payment system is growing in recent years, with electronic payments replacing paper-based transactions using cash and checks. Technological developments in internet and smartphones over the past decade have changed the way in which people pay and receive money for their purchases and sales. These developments have resulted in creation of means of payment which allow consumers to make remote payments in new ways. They also provide for alternative payment methods, such as using smartphones, smart watches and smart bracelets - instead of physical charge cards. Consumer behavior, with regard to retail payments, is influenced by demand for safe, efficient and convenient means of payment. As cellphones become more common means of payment, more apps are being downloaded for making cellular and contactless payments.

When consumers and merchants see the benefit in conducting such transactions, this provides an incentive for entrepreneurs to develop innovative means of payment. Such development is carried out not only by banking corporations and international credit card companies - but also non-banking entities, including leading technology firms, private companies and individual entrepreneurs. Some of these innovations include new solutions for making advanced payments, various options for using new access devices and alternative access channels, options to improve payment efficiency and security level and response to cyber attacks. Some of the better known developments include the Apple Pay service, the Samsung Pay service, Google's electronic wallet, the PayPal and Alipay e-commerce services and payment services using social media, such as through Facebook. This is in addition to the emerging development of means of payment including electronic wallet, pre-paid cards and services based on a link to checking accounts or link to the client's payment card. Use of these means of payment by consumers, merchants and corporations is growing, mainly because they provide a solution for these users' needs.

An innovative development in advanced means of payment may be seen in Hong Kong, which promotes the use of digital checks⁴. The development is managed by the central settlement company, HKICL, a company which provides settlement services to all commercial banks and which is owned by the Bank Association and by the central bank of Hong Kong (HKMA).

The Hong Kong digital check has these attributes: Both parties to the transaction, payer and payee, must sign the digital check by digital signatures issued by authorized entities; digital checks may not be endorsed; in order to ensure that trading using digital checks will be orderly and protected, appropriate steps will be taken - including creation of encrypted and encoded infrastructure; no change can be made to any information on the digital check: payee name, amount, date etc. Any attempt to make such a change would invalidate the digital

⁴ Note that development of the digital check in Hong Kong is referred to in this report merely as an example - and its attributes may differ from those of the electronic check to be developed in Israel.

signature and the check itself; the digital check includes minimal sensitive information and the payer's account information does not have to be disclosed to the payee.

Payment systems world-wide have also significantly developed in recent years. For example, different countries - including South Africa, Mexico, UK, Poland, Sweden and Singapore - have deployed a faster retail payment system. Other countries, including Australia, Finland and the USA, are in the process of deploying such systems.

The Committee, as part of its work, reviewed the Faster Payment⁵ system. Fast retail payment system created by VocaLink which was put into operation in 2008, by order of the Bank of England, in order to increase competition in the market, to replace settlement using the BACS system⁶ and to reduce the time required for payment transfer between clients of different banks from three days to a few hours. The system operates 24/7, serving individual and business clients - with the maximum transfer amount set at GBP 100,000. As of 2015, the system hosts 10 banks and 260 indirect (hosted) players.

The PAYM mobile payment service used to transfer payments between user accounts, operates through the system. This service allows for sending and receiving payments using your cellphone number, without requiring details of your bank account (the phone number is linked to the bank's database, which includes the user account information). This service is provided by using the bank application and is available to most clients of those banks who are members of this system.

In addition to evolution of means of payment and payment systems, the world has recently seen development in legislation concerning payment systems, as well. Especially advanced regulation may be seen in the European Union, which is cited in this report as an example⁷. For the past decade or so, the European Central Bank has been acting to harmonize and integrate payment systems through the Single Euro Payment Area (SEPA) project. This project is designed to create arrangements for rapid, efficient and safe transfer of payments between EU countries and to improve the system of means of payment, *inter alia* through regulations, removing obstructions and opening the system of means of payment to competition through entry of new entities. In this regard, we shall refer to two key directives: With regard to payment services – the Payment Services Directive⁸ (PSD) and with regard to electronic money – the E-Money Directive⁹ (EMD).

⁵ The system may be used for four types of payments:

- a. Single Immediate Payment - standard transfer from client to client, settled within up to two hours.
- b. Forward Dated Payment - payment made in advance using the system, which is settled on the date specified by the sender. This is typically used for payment of monthly bills, rent etc.
- c. Standing Order - payment in a fixed amount made by the client every month.
- d. Direct Corporate Access Payments - this service is available to companies, which may send a large number of concurrent transactions to the system.

⁶ Automated settlement system for payment orders.

⁷ For more information see Appendix A (in Hebrew version only).

⁸ [Directive 2007/64/EC on payment services in the internal markets](#)

⁹ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0110&from=EN>

5. Overview of advanced means of payment in Israel¹⁰

The payment system in Israel has been in constant flux over recent years, due to implementation of various reforms, technology developments and global developments. Such change leads, *inter alia*, to promotion of ventures involving advanced means of payment by the banking system, as well as by various companies and entrepreneurs.

The leading innovations and developments in Israel include technology which enables contactless payment, mobile POS terminals, option to deposit checks to your bank account using your cellphone, online payments and use of electronic wallets and payment apps for computers and smartphones.

5.1. Checks

The use of checks - especially post-dated checks - is very common in Israel, compared to the rest of the world, both in the business sector and by the public. Post-dated checks are used by bank clients as collateral to secure loans for their business and in fact, serve as an additional credit facility. They are also used to make periodic tax payments and to pay suppliers in multiple installments.

Checks have a wide range of uses: Payments from individual to individual¹¹, payments from individual to business¹², payments from individual to a public entity¹³ and payments from business entities¹⁴. In addition, checks may be used as follows: Payment for immediate debit and credit; payment by installments using post-dated checks, to be presented on the date thereof; check provided as collateral - the check is not to be cashed, but only to be used as collateral to secure making a payment at a later date. This use is common, for example, in lease agreements and in transactions with various suppliers; check for security - usually used for bank credit; gift check - checks designed for gift giving, by individuals on festive occasions and by business entities to their clients and employees; cashier's check - check issued by a bank to guarantee a payment to be made.

In Israel, checks are extensively used, *inter alia*, because they have many advantages for both payer and payee. Advantages for the payer include: Checks are available and convenient; their negotiability may be restricted - and the check may be cancelled if lost, stolen or in case of non-receipt; it serves as confirmation of payment to the payee after it has been cashed; it allows for making future installments which may not be in equal monthly amounts (without being subject to the bank-approved credit facility, until it is cashed); and it serves as a backup means of payment in case of emergency. Advantages for the payee include: It provides legal

¹⁰ For comprehensive and extensive information about the activities of major payment and settlement systems in Israel, see the "2014 Red Book". See:

<http://www.boi.org.il/he/NewsAndPublications/RegularPublications/Pages/redb2014h.aspx>

¹¹ Nannies, kindergartens, maids, private medical care, private tuition, renovations, private loans, rent, gifts on festive occasions and payment to the condo association.

¹² Payment of vouchers and bills at banks, payments to insurance companies, check for security, charitable donations to NGOs, consumables.

¹³ Tax payments (VAT, National Insurance, Income Tax)' payments to educational institutions (kindergarten, school, university), deposit to provident / pension fund.

¹⁴ Taxes, payroll, payments from insurance companies, payments to suppliers, deposits to employee provident / pension fund, purchasing consumables.

proof of the transaction and payment there for; if the check is not honored, the payee may directly apply to the Enforcement and Collection Authority; if lost, the asset may be realized using a "duplicate note"¹⁵; it is possible to verify in advance if the payer's account has been restricted and not to accept their check; the check serves as collateral for credit.

The use of checks exposes the client, the payee, the bank and the entire system to operating risk, liquidity risk and credit risk. Receipt by check is not final and is not certain. The payment is deposited to the payee account with a "non-final" ("contingent") status for three business days - the duration in which the check may be returned.¹⁶ Secondly, there is risk associated with failure in liquidity management by the client or the bank¹⁷. Thirdly, those involved in the transaction are exposed to fraud – theft, forgery, check endorsement, including discounting transactions based on an endorsed check, because payment for goods by check exposes the recipient to liquidity risk and to credit risk, because the goods are delivered upon receiving the check, whereas the payment is not final and may bounce, i.e. there is no DVP¹⁸. Such fraud may also serve for money laundering and terror financing. Fourthly, the use of checks does not allow the bank to verify that the client is in compliance with their credit limit: The client may issue unlimited checks, since the bank cannot fully monitor them. Note that returned checks carry a risk for the entire economy, since they impact many social strata – business owners, social organizations and individual payees. Finally, the use of checks carries an environmental cost, since they are printed on paper and transported between multiple locations.

Note that the Locker Committee started addressing the risk associated with the use of checks and recommended an outline for reducing the use thereof. The Committee recommended, *inter alia*, to restrict transaction amounts on checks and to prohibit the use of checks with no payee name indicated ("blank check").

In conformity with the foregoing, the Bank of Israel in recent years has examined the use of paper-based means of payment as part of planning the reform for reducing the use of checks in the payment system, work on the draft bill on electronic clearing and changes to settlement processes at the paper-based clearing house.

In June 2015, the Ministerial Committee approved the draft bill on electronic clearing. The draft bill refers to the transition from physical clearing of checks, to electronic clearing by stopping the checks at the presenting bank (the collecting bank) and sending files with images of the checks to the payer bank. In order to allow the check truncation, from legal and regulatory aspects, legislation is required in order to regulate these issues: A. Electronic clearing of checks without physical presentation; B. Regulation of returning a denied check to the client; C. Regulation of acceptability of a computer-based check in legal proceedings.

¹⁵ According to Section 69 of the Notes Ordinance (New Version), if a note is lost prior to maturity, the person who held the note may require the payer to issue them another, identical note.

¹⁶ Under special circumstances, a check may be returned after more than 3 business days and in exceptional cases – within a period of up to 60 days.

¹⁷ The banks' liquidity risk is due, *inter alia*, to the fact that banks credit their clients on date T, while inter-bank settlement occurs on date T + 1.

¹⁸ DVP (Delivery Versus Payment) - concurrent transfer of goods and payment there for.

Several countries have recently implemented check truncation and have legislated laws which govern operations of the banking system for electronic check clearing. The draft bill on electronic clearing is designed to regulate the transition rules from physical clearing of checks to electronic clearing.

The Locker Committee has recommended an outline to reduce the use of checks in the Israeli payment system; this recommendation is reflected, *inter alia*, in the draft bill on reducing the use of cash, in the draft bill on electronic settlement and in the recommendation on promoting the use of digital checks as an alternative for expanding the use of advanced means of payment in the Israeli payment system.

5.2. Use of payment cards in Israel

There are several types of **payment** card in Israel:

Deferred Debit Card – the most **commonly** used card in Israel today. The client uses this card to purchase goods and services and pays for them monthly, sometimes in multiple deferred installments¹⁹. The merchant is credited, in accordance with the settlement agreement and finances the credit days between the client being debited and the merchant being credited. This card is associated with the client's credit facility, allowing them to withdraw cash from ATMs and/or to pay merchants for goods and services - up to the amount of the credit facility allocated them by the issuer.

When the client chooses to pay for a transaction by installments, the deferred debit involves one of two types of credit: (a) credit paid for by the merchant - extended by the merchant for a period of days up to several months; and (b) credit paid for by the client - extended by the credit card companies for several months, occasionally for over one year, using "credit"-type programs.

The deferred debit card is not a complete alternative for cash, since it involves an aspect of financing and because it is only available to consumers to whom the card issuer has extended a credit facility.

Debit card – in this case, the accounts of the cardholder (buyer) and the merchant are debited / credited, respectively, immediately upon conducting the transaction²⁰. This card provides the convenience of a debit card, along with (nearly) immediate transfer of payment - similar to cash, check (not post-dated) or bank transfer. A transaction using a debit card is less costly for the issuer than one involving a deferred debit card, regardless of the transaction amount²¹. Globally, transactions are usually carried out using a debit card. In conformity with recommendations made by the Locker Committee, the Bank of Israel

¹⁹ For bank-issued cards, the debit is reflected in the client account.

²⁰ Typically up to 1-3 days after the transaction date. According to directives of the Supervisor of Banks, in Israel, too, the merchant would be credited immediately - and no later than three days after the transaction transmission date. This directive shall become effective on April 1, 2016.

²¹ The cost to the client depends on multiple issues, with the key one being the formula of the interchange fee.

initiated multiple improvements for clients and merchants using such a card or an identifiable pre-paid card²².

Revolving credit card – the holder of such a card can specify the maximum monthly amount to be debited and the outstanding debt accrued with respect to additional purchases made using the card are deferred to future month(s) and accrue interest. Such cards are currently only issued in Israel by credit card companies (primarily in conjunction with joint issuance arrangements with retailers and consumer loyalty clubs) - but banks may issue them as well.

Pre-paid card – this card, denominated in NIS or in foreign currency, is pre-paid by the client with up to the maximum amount for the card, with each payment deducted from the card balance, down to zero. Cards of this type include cards for making purchases at food chains, calling cards etc. These cards can be re-loaded, i.e., they are for multiple use - with some being identifiable, while others are anonymous.²³ These cards are issued by credit card companies and by the Postal Bank and may be used with any merchant which accepts the issuer's payment cards. The pre-paid card allows for transactions to be made up to the current balance on the card, which balance is updated after each transaction. This card may be re-charged in multiple ways: Directly from the bank account, by charging a payment card (deferred, revolving or debit card) or by cash payment.

In addition to payment cards, there are also single-use pre-paid cards, including gift cards and anonymous virtual debit cards issued by credit card companies. These cards allow users to make purchases online without disclosing the buyer and purchase information. They carry the information of an alternative credit card which may be pre-paid (one time only) up to a limited amount²⁴ - while the information of the payment card used to load the virtual card are stored in a secure, encrypted system. If any balance remains on the virtual card - it may be downloaded. Pre-paid cards may serve as an alternative to cash for clients who do not have an account with the bank.

Three credit card companies operate in Israel – Isracard, LeumiCard and ICC, which issue five local and international brands: Visa, MasterCard, American Express, Diners and Isracard. These companies issue and acquire cards in conformity with licenses granted by the relevant international organizations. Business in this area has significantly expanded in recent years, due to these factors: Non-bank entities (usually, these are loyalty clubs) have started issuing payment cards; companies providing credit and financing have expanded their range of services through tools which allow the cardholder to specify the debit amount and date based on their needs and abilities; the use of payment cards with merchants is convenient and available; and the range of e-commerce websites is expanding.

In Israel, the number of valid cards at year-end (active and dormant) has been growing in recent years. The number of debit cards which offer cash withdrawal increased in 2014 by 8% - from 8 million to 8.7 million. Since 2009, the number of such cards has grown by 46%. The number of debit cards in 2014 was 664,000 - an increase of 19% since 2013 and an

²² The summary report on increasing competition in the debit card sector – <http://www.boi.org.il/he/NewsAndPublications/PressReleases/Pages/10-02-2015-Debit.aspx>

²³ Some may also be used to withdraw cash from ATMs, while others do not offer this facility.

²⁴ In 2014, this amount was NIS 2,000.

increase of 75% since 2009. The number of transactions (made in Israel and overseas) using payment cards issued in Israel increased this year by 8.1% - and since 2008 it has grown by 63.6%.

In recent years, the number of active cards²⁵ in Israel has grown; in 2014 the number of active cards has increased by 7% - from 6.7 million to 7.2 million.

Total transactions using payment cards are growing and merchants tend to promote their use for micropayments as well - such as in vending machines and photo-copying machines. Between 2013-2014, total transactions in Israel increased by 4.8%, from NIS 216.3 billion to NIS 226.8 billion. Most of the transactions, around 70% of all transactions made between 2012-2014, are smaller than NIS 200, which may indicate that payment cards are used to replace cash in transactions involving purchasing of goods and services in the retail sector.

5.3. Electronic wallet

In recent years, we have seen technology changes which result in changes in means of payment. The internet has significantly expanded the ability to make payments and to transfer funds, while online commerce created a need for development of new abilities to transfer funds and to make payments in a more rapid, secure and accessible manner. One of the more common recent developments is the Digital Wallet or the electronic wallet - the name depends on the type of activities supported by the wallet and the technology used.

An electronic wallet can be used for these major functions:

1. Conduct e-commerce transactions (such as payment for online shopping using a PC or smartphone, funds transfer to another person and bill payment);
2. Maintain funds in a virtual (digital) account, into which funds are deposited in various ways and then used to make payments or to transfer funds online;
3. Store information about means of payment (such as information about different payment cards), information about the wallet holder (such as shipping address for quick shopping), passwords for shopping websites, driver's license information etc.
4. Monitor online purchases made on the internet or through the application.

In recent years, the use of E-Wallets has moved from Internet to cellular: Today, some providers offer use of an electronic wallet on your smartphone, by installing an app. Payment is made through the service provider to merchants, similar to payment using a payment card. The technology used in E-wallets on smartphones ("cellular wallet") is usually through the NFC device integrated in smartphones for information transfer. To pay, a customer brings the smartphone near the card reader and connects to the application to confirm the payment. At this stage, their account is charged and the service provider sends the payment to the merchant. Note that in recent years, solutions were developed for smartphone without NFC hardware components - including a special sticker or external device, which includes information about the means of payment (such as: payment card).

²⁵ Cards used for one or more transactions in the final quarter of the year.

In Israel, many companies, including banks, credit card companies, telecom companies, entrepreneurs and private companies - have tried in recent years to develop and promote the use of e-wallets due, *inter alia*, to their global development and expanding use of cellphones for a wide range of financial transactions. In addition to payment for products, these include: payment of wages to temporary/foreign employees; payment for taxicabs; payment for parking; transaction approval for companies and individuals; obtaining information, funds transfer to clients of other banks; funds transfer between bank customers by bringing the two devices close to each other; cash withdrawal from ATMs without using the card etc. Currently, there are several banks in Israel offering various services using a digital wallet which is directly synchronized with their bank account; these services allow for funds transfer and making various payments directly from the app. Note that some e-wallets which can store multiple means of payment mostly act as closed payment systems, which only allow funds to be transferred among those with accounts on the system.

5.4. Innovation in advanced means of payment in Israel

In recent years we have seen development and innovation in advanced means of payment in Israel - here are some examples:

Smart payment card (EMV) – In Israel, the market has been adapting to smart payment cards – cards which use the advanced EMV²⁶ security standard – because they would provide new benefits. Firstly, in order to use them a PIN must be entered on the merchant terminal, which reduces the use of stolen or lost cards; thus, the transition to such cards would reduce the fraud potential and would improve client and issuer trust. Secondly, this transition would align the local market with the global one, expanding the ability to make payments overseas using cards issued in Israel.

The transition to smart cards requires adaptation of various systems, including the Shva (Automated Banking Services) system and POS terminals. According to a plan outlined by the Antitrust Authority Director General—together with the Supervisor of Banks and the Payment and Settlement Systems Oversight at the Bank of Israel—Shva should complete its preparation by end of 2015 and the banks and credit card companies should formulate a plan for conversion of payment cards and associated infrastructure to use of this advanced technology.

Developments with regard to merchants' POS terminals – With regard to POS terminals, various technology and hardware devices have been developed, to assist in promoting use of advanced means of payment and in promoting competition in the payment system. These solutions include POS terminals with support for EMV technology, support for making payments using NFC (Near Field Communication), support for multiple applications²⁷, and for hardware-based implementation of advanced means of payment.

²⁶ EMV (Europay, MasterCard and Visa) – a set of specifications developed by international credit card companies to provide a uniform, secure standard for payment using payment cards in “card-present” transactions.

²⁷ A terminal that supports multiple acquirers and issuers promotes competition for clearing payment cards and enables merchants to easily migrate between acquirers. In contrast, when each terminal is owned by a

These solutions enable new options for transaction approval, entrance of new entities and implementation of advanced solutions and means of payment. These terminals also reduce dependence on the switch for transaction approval and settlement, since they open new paths for transaction processing and routing. Yet at the same time, this places the main activity at systems of the new acquirer or processor.

Conducting contactless transactions – A contactless transaction is a technology solution which allows for wireless data transfer (with no contact between the transmitter device and the reader device). The term "contactless transactions" cover a wide range of means of wireless data transfer, such as: Conducting payment card transactions, payment of fares on public transportation using a dedicated card, card used for attendance confirmation at a work place etc. Contactless transactions may employ various techniques, most commonly NFC (Near Field Communication).

Payment-card transactions using contactless technology may be conducted using a device on the card, a unique sticker, a device incorporated in the cellphone or a device incorporated on a special SIM card in the cellphone. Contactless payment is only possible for merchants with a special reader incorporated in their POS or attached to the POS as an external device.

Online payments and e-commerce – Recent years saw significant growth in e-commerce, i.e. commercial transactions conducted electronically, due to improved access to the Internet, technology developments in Israel and world wide and advertising on social media. Today, you may purchase many goods and services from the comfort of your home - even if the supplier is overseas and even if they have a virtual store and never meets the customer. Today, e-commerce spans all transaction types - individual, retail and wholesale, both in-country and international.

Progress made in Israel with regard to online payments allows users to pay online for a wide range of government and public services, as well - such as pay taxes, traffic tickets and police fines, fees for renewal of license, passport or transit documents as well as water, power and municipal tax bills. Banks in Israel also allow their clients to conduct transactions online and by using custom apps on smartphones. Once a personal, confidential password has been issued, clients can monitor their account and safely make payments and transfers between accounts - although these are mostly capped at a certain amount. Because online services can be used outside bank branch business hours, banks improve service to their clients and reduce waiting time at the branch.

Cellular check - In 2013, the option to deposit a check into the bank in which you hold an account using your cellphone was approved and launched. Accordingly, it is possible to take a picture of a check using your cellphone and to deposit it directly into your personal account; it is not possible to deposit post-dated checks to the depositor's account; deposit of a check which is not post-dated and made out "to payee only" may be done up to a limited amount.

specific acquirer, and only supports working with that acquirer, it forces the merchant to replace the acquirer's terminal when switching.

6. Advantages of using advanced means of payment

Promoting the use of advanced means of payment would contribute to increased competition, efficiency and security of the payment system in Israel. Use of advanced means of payment offers various advantages, which may be reflected on different levels, including creating a situation where an entity that has developed an advanced means of payment has a competitive advantage over other entities in the payment system; reduced transaction costs compared to other electronic means of payment; documentation of transactions involving the means of payment; convenient use for customers and availability to customers.

Data from the Central Bureau of Statistics²⁸ shows that in recent years in Israel, there is a constant growing trend in the number of households connected to the Internet, in use of computers and in use of smartphones. This trend supports promoting the use of advanced means of payment, because widespread connectivity to communication infrastructure for providing payment orders has grown significantly in recent years.

Entities which propose innovations in means of payment may benefit from a competitive edge over the competition, offer a more convenient service to the customer and generate opportunities for sale of additional services, such as coupons customized to the nature of customer activities, coupons for merchant promotions and discounted offers based on the customer's location. The need to gain the edge over the competition pushes service providers to offer new, advanced means of payment which create value for customers and allow them to offer additional products related to the transaction. Furthermore, development of advanced means of payment allows service providers to expand their customer base, since they allow customers to buy goods or services online or using their smartphone - and they allow them to make purchases from anywhere in the world. Online communication may also create opportunities for companies to increase revenues by providing information to consumers about special offers, promotions and discounts.

The use of advanced means of payment may result in lower fees charged in the payment process from all players in the transaction execution chain due, *inter alia*, to the entrance of new entities. It may also result in significant reduction of the cost of making payments, due to elimination of the need for paper-based settlement. This decrease refers, *inter alia*, to reduced cost associated with the use of cash - relatively expensive use for retailers, since it involves cost for deposit, transit, insurance, holding, forgery and loss of interest.

We may also note that promoting the use of advanced means of payment would help reduce the shadow economy in Israel. The Locker Committee report shows a link between the shadow economy and money laundering and the extent of use of cash and check negotiability. This link is due to the ease with which these means of payment allow for transactions to be conducted "under the radar" of government authorities and outside of the financial and payment systems. The use of advanced means of payment would allow for

²⁸ Household Expenditure survey.

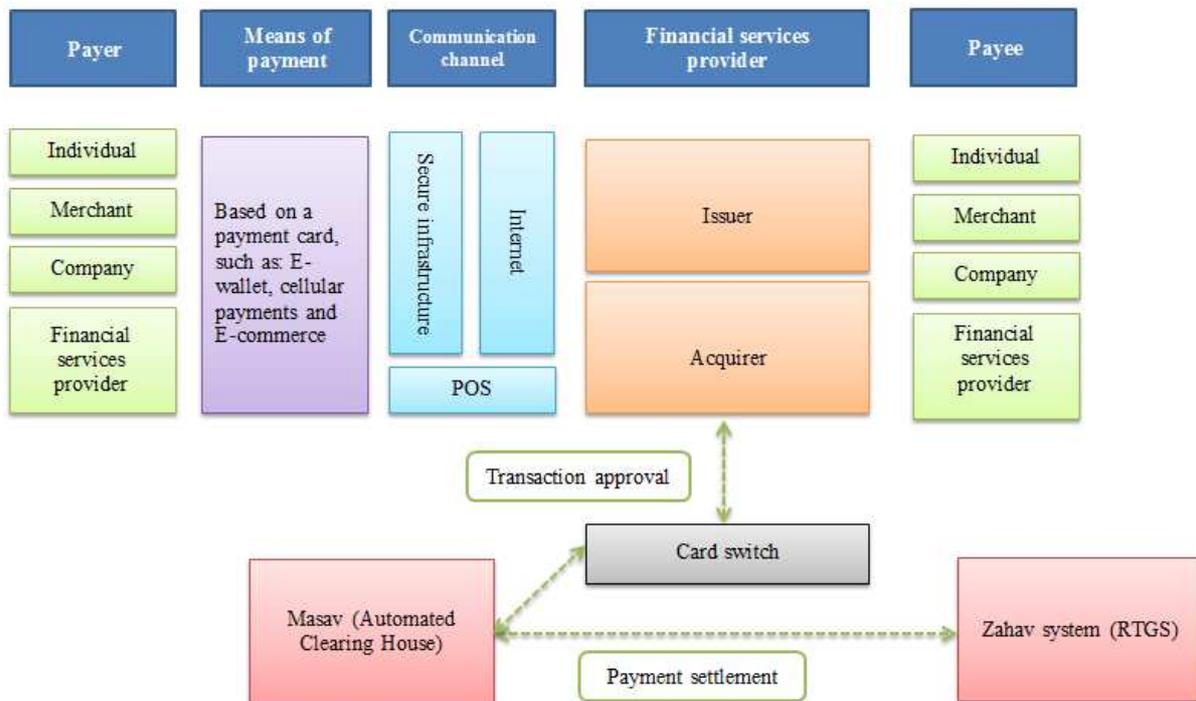
digital monitoring of transactions, which would be documented and identifiable in the financial system and in payment systems.

7. Alternatives for conducting transactions using advanced means of payment in the current payment systems

7.1. Description of a transaction conducted using advanced means of payment

Advanced means of payment do not necessarily exist separately from currently existing means of payment—cash, bank transfers, direct debit or payment cards—rather, they are based on such means of payment and make use of the current infrastructure and payment systems in Israel. Today, most advanced means of payment in Israel are based on payment cards.

When looking at the current chain for conducting transactions using advanced means of payment, namely a chain based on payment cards, one can identify multiple links: Payer, means of payment, communication channel, service payment provider, card switch²⁹, Automated Clearing House (Masav), Zahav system (RTGS) and the payee.



Payer—individual/merchant/company through which payment transactions are initiated—e.g., through a custom application or through a website.

Means of payment – means of payment which may be used for payment instructions based on a payment card.

Communication channel – the payment transaction using advanced means of payment should be transmitted using a secure communication channel, which includes websites

²⁹ The infrastructure connecting issuers and acquirers (or processors on behalf thereof) for approval and settlement of transactions, sometimes also carries out the monetary settlement between issuers and acquirers. The switch services can be provided by the cards scheme, processor or a special-purpose entity.

secured by advanced encryption, secure custom communication infrastructure and payment terminals (POS) which allow the merchant to read the card data and to process the request for a transaction using a payment card.

Issuer – the entity which provides the payment card to the customer, in accordance with an agreement between them³⁰. This entity manages the cardholder's account, including the credit facility for the card (if any). The card issuer may approve or reject debit requests and ensures that the acquirers would receive payment for transactions made by the holder of a card issued by the issuer. Issuers are typically banks or financial institutions.

Acquirer – the entity which connects the merchant and the issuer, allowing the merchant to receive payments from the cardholder through the issuer. The acquirers ensures and transfers the payment to the merchant. Note that credit card companies, as well as acquirers that are not banking corporations³¹, may connect to the card switch.

Card switch – the national network—"Ashrait" (payment card transactions)—is managed and operated by Shva (Automated Banking Services). This is a private company incorporated in 1979, owned by the four major banks and operating as a joint services company, as defined in section 23 of the Banking (Licensing) Law, 5741-1981. The company operates pursuant to a license and operating permits granted by the Bank of Israel and in conformity with an exemption of restrictive trade practice granted by the Antitrust Authority. The company provides services to various financial institutions: banks, financial institutions, credit card companies etc.

The company manages the communication network between credit card companies and payment terminals at merchant premises. This network supports most payment cards in the world - Visa, MasterCard, American Express, JCB, Discover (Diners) and private label cards - and supports all transaction types involving payment cards. In conjunction with operating the national system, Shva provides multiple services: transaction approval, transaction collection, Stand-In service³² and other services.

The company also manages the settlement interface between the credit card companies. The settlement interface consolidates activity for each acquirers and issuer, after which it generates clearing reports. These reports are sent to the Automated Clearing House (Masav) and are then sent for settlement to the Zahav system (RTGS). This process is conducted in conformity with pre-defined and agreed rules. The interface manages a central database for queries and enables a simple system for accounting control.

Automated Clearing House **Ltd. (Masav)** – a private company established in 1982, operating as a joint services company, pursuant to a license and operating permits granted by the Bank of Israel and in conformity with an exemption of restrictive trade practice granted by the Antitrust Authority. The company provides electronic settlement services for debits and credits, operates the system for customer transition between provident funds and between study funds and provides services for information transfer between Government entities and banks.

³⁰ The agreement is based on section 7 of the Debit Card Law, 5746-1986.

³¹ As from January 2016.

³² Responding to approval requests on behalf of the acquirers.

As of December 2014, there are 26,109 entities connected to Masav, including banking corporations, the Postal Bank, Government ministries and public institutions as well as other settlement providers, such as credit card companies, which can send payment instructions directly to the system.

Zahav system (RTGS) – this is an advanced system for efficient, reliable and irrevocable settlement of NIS-denominated payments in Israel, in real time and with finality; it serves as the final settlement provider for all payment systems in Israel. The system ensures fast, secure payment execution for its users. The settlement is made within minutes; once completed it is irrevocable and the payment recipient may immediately use the funds transferred with no risk exposure. The system, operated by the Bank of Israel, was launched in July 2007.

RTGS significantly reduces the risk associated with payment system operations - both credit and liquidity risk and the dependence of each participant on other parties to the settlement - thereby significantly reducing the system risk. Zahav system allows for transactions to be made securely and with no settlement risk, even in times of financial uncertainty.

Payee – individual / merchant / company. Payment recipients are the transaction beneficiaries.

7.2. Access to existing payment systems

Access rules to the payment systems used in Israel are specified by their operators, together with the system participants and subject to approval by the Overseer of Payment Systems at the Bank of Israel. It is clarified that, according to generally accepted international standards, the criteria for access to the system should be objective, risk-based and known to the public, enabling fair and open access to participation in the system, suspension or rescinding of such participation.

Access to the payment system is subject to the participant complying with regulatory requirements, committing to adhere to the rules and complying with all requirements stipulated by the system, including: Being an entity subject to regulatory supervision and maintaining arrangements with regard to activity on the system, technology and operating requirements, legal requirements and requirements related to information security and to risk management.

Also note that in 2014, the Bank of Israel established an internal team to review the execution chain of debit card transactions, in order to promote the creation of another switch for conducting payment card transactions. The team made a comprehensive review of all links in the transaction execution chain, including the card switch, and made public its interim report on August 3, 2015. Highlights of the recommendations are as follows³³:

- **Expand activity and participation in the National Payment Council** to other stakeholders, in conformity with the World Bank model. The Council is an advisory

³³ <http://www.boi.org.il/he/NewsAndPublications/PressReleases/Pages/03-08-2015-SwitchReport.aspx>

board for the Bank of Israel and discusses market needs and planning of the payment strategy.

- **Establish a committee on payment cards.** The committee would define and specify activities and rules for execution of payment card transactions, so as to increase competition and efficiency while maintaining stability and security.
- **Specify principles and rules for development and use of the protocol³⁴.** The payment card committee would specify the principles and rules for development and use of the protocol, while maintaining a balance between participant needs and system-wide considerations and ensuring the transparency and accessibility of the protocol to all relevant stakeholders.
- **Modular implementation of the protocol,** to allow for selection and implementation of terminal uses in conformity with user needs - whether on the terminal or on a remote server.
- **POS terminal support for multiple applications and contactless transactions,** to allow for other routing methods which would open the market to competition and evolution of advanced means of payment.

The Bank of Israel has started implementation of these recommendations, including expansion of activities of the National Payment Council and started to establish the payment card committee, which would improve the execution chain of payment card transactions. Implementation of these recommendations would allow new entities to enter the payment card market, would increase competition while reinforcing the stability and efficiency of the payment system and will support such processes. The expected changes due to the recommended action would also allow for development of advanced means of payment.

³⁴ Technology specification and structure of message used to transfer a transaction along the chain.

8. Barriers to using advanced means of payment

The Committee, as part of its work, mapped barriers which may impact the promotion of use of advanced means of payment in Israel. This mapping included technology and business barriers, as well as the transaction execution chain for advanced means of payment.

A legal framework unsuitable for the nature of operations involving advanced means of payment may reduce the use of advanced means of payment by financial service providers and by private developers thereof, as well as by customers who use these advanced means of payment. A legal framework which does not regulate the rights, obligations and responsibilities of all entities involved in the transaction execution chain for advanced means of payment may result in uncertainty and hamper (or even preclude) the development of advanced means of payment in the payment system. Also note, on this matter, **the absence of sufficient consumer protection** and its impact on the use of advanced means of payment. This requires clear legislation, known to consumers, which imposes responsibility on the relevant party if products are not delivered on time and as agreed, if the means of payment are abused, if there is an input error by the service provider with regard to the transaction amount, as well as regarding the unloading of unutilized funds from stored-value cards.

The absence of uniform standards and rules for use of advanced means of payment impacts the use of such means of payment. It is highly important to create uniform standards for information security and cyber protection and to create uniform rules for all financial service providers offering services using advanced means of payment. The absence of such standards may restrict the market and may result in sub-optimal conditions for innovation development in this field. In addition, uniform standards are needed for transferring payment instructions for advanced means of payment through technology between various payment service providers, to prevent financial service providers from developing custom communication interfaces among themselves.

Absence of a central settlement system for making payments using advanced means of payment, a system which would provide 24/7 access to the switch for approval and settlement of all advanced means of payment in Israel. The system allows receiving approval of the execution of transactions made using advanced means of payment which are not based on a payment card. It also allows settlement of advanced means of payment which currently operate only in closed systems.³⁵

Absence of secure communication infrastructure for making payments using advanced means of payment, from the end user to the payment system, may delay the development of advanced means of payment. All entities in the transaction execution chain for advanced means of payment may be concerned about disclosure of information about the transaction and may avoid making payments using such means of payment, from information stored on

³⁵ A closed system only allows for payments to be sent among members thereof; hence it is not possible, for example, to send a payment instruction to a person who is not a member of the system.

the smartphone / PC, through the communication used to transmit information to the financial service provider and all the way to settlement of the payment instruction in the payment system.

The use of advanced means of payment is a two-party activity, when a payment is made it involves two end users (the payer and the payee). For the payment to be successfully completed, the payer must hold an advanced means of payment and the recipient must be capable of accepting such means of payment. For example, use of an electronic wallet requires adoption by both consumers and merchants, i.e. both parties must adopt the same innovative means of payment. To overcome this barrier, co-operation is required among multiple stakeholders.

The cost of investment, development, adaptation for systems and business models and marketing of advanced means of payment impacts the deployment of such means of payment. Investment in development of innovative means of payment - including development of business models, technology development and adaptation for other systems and business models which accept such means of payment - involves financial cost but do not ensure success in deployment of the means of payment in the payment system and acceptance by customers as a legitimate means of payment. Furthermore, the issuer of means of payment must invest in marketing in order to expand the use of their means of payment.

Absence of widespread deployment of terminals which support contactless transactions at merchant premises may delay the evolution of use of advanced means of payment and impact, *inter alia*, development of means of payment based on such technology (such as electronic wallet). Advanced means of payment based, *inter alia*, on payment options which also support contactless technology, such as: NFC, Bluetooth, WI-FI. Conducting a contactless transaction requires installation by the merchant of a custom POS terminal which supports this technology. Such terminals currently operate in a relatively small number of merchants in Israel. Also note that the diverse solutions for conducting contactless transactions create uncertainty as to the leading technology. Today, major technology vendors such as Samsung and Apple include NFC hardware components in their smartphones, which support contactless transactions.

Adoption of new means of payment by payers and payees - there is natural concern among potential users about using a new, un-familiar means of payment. This concern is due, *inter alia*, to uncertainty about consumer protection granted to payers using such means of payment, the expected cost and the fee structure. Payees are also concerned, since such means of payment are perceived as a breeding ground for fraud and due to uncertainty about the cost associated with receiving such payment. **The time required for changing public habits with regard to using advanced means of payment** is another barrier, with educating the public and changing their habits expected to take several years. In this regard, also note the **fear of new technology among different population segments**, a fear which may slow down the transition to using advanced means of payment. For example, older citizens are

more afraid than younger people to conduct transactions based on advanced technology, while the latter use advanced devices more extensively.

9. Risk associated with use of advanced means of payment

9.1. Cyber risk

Advanced means of payment may benefit from a wide range of security options, but they are also exposed to new cyber risk. There is potential for damage due to security faults typical of advanced computer platforms (such as smartphones and apps) - because they are susceptible to intrusion and abuse. Such damage may be reflected in widespread crime, but over the long term may also impact the national level, e.g. through severe disruption of business activity and daily routing and in availability of infrastructure for conducting financial transactions (denial of service).

The multiple existing methods significantly reduce security, both directly and indirectly. Below we clarify this premise, by referring, *inter alia*, to competing for customers instead of investing in security, multiple vulnerable interfaces, absence of one party responsible for security failures or insurer; inefficient allocation of security resources; lack of effective capacity to develop low-cost, reliable protection technology; absence of appropriate regulations and increasing difficulty in changing entrenched norms and practices.

Competing for customers instead of investing in security: The solutions are focused on improved benefit to users (ease of use, network support), rather than on security. Most consumers do not measure security - only the direct benefit from using the product. Therefore, companies tend to hide any security failures.

Inefficient allocation of security resources: Because multiple parties are involved in the chain, this may result in inefficient allocation of security resources. This is because the weakest link in the chain determines the overall security - and failure to invest in this link obviates the need for over-investment elsewhere.

Insufficient protection between the service provider and the system: Most of the current protection solutions resolve the issue for the continuum between the customer and the service provider through an app. There is a significant gap in protecting the direct communications between the service provider and the actual system, which is currently not being addressed.

The routing work between users and service providers in cyberspace and with regard to advanced means of payment actually consists of a range of actions made by the customer in cyberspace with the advanced payment app. In order to perform this action, the user must authenticate themselves and/or verify their permission to perform such action, depending on context. This requirement is fulfilled by authentication as a prior step to the transaction.

There are three categories of threats to online authentication and transactions:

- **Impersonation:** Use of the advanced payment system by someone other than the person in whose name and identity the transaction is made, without their knowledge and consent, by using valid identifying particulars. Common reasons for impersonating include: Identifying particulars being stolen, copied, solicited by false pretense or produced without permission using weaknesses thereof, in authentication processes or among careless and/or clueless users. Some of these methods include: Password guessing and/or

cracking, intrusion and/or restoring databases listing username / password combinations, identifying particulars, payment card numbers etc., stealing cookies and various phishing attacks.

- **Forgery / abuse:** Making a payment - or a change in payment or customer details - by someone other than the authentic party, without their knowledge or consent, by intervention in the communication (or in the user's computer) during an "authentic session", using the mutual authentication which the legitimate parties have conducted earlier. In other words, this means "riding" an authenticated session. Some of the ways to do so include: Attacks using a Remote Access Trojan (RAT), Man in the Middle attacks on the SSL (Secure Sockets Layer) medium using false, credible certificates.
- **Denial of Service:** Negative impact to a system and/or disabling of infrastructure which supports transactions using advanced means of payment.

9.2. Operational risk

"Operational risk" means a risk of impediment in internal processes, people or systems, such as human error, technical failure in hardware or software and communication malfunctions or due to external events. Operational risk is inherent in all processes of financial service providers which provide services for advanced means of payment. Therefore, financial service providers are required to take action which would address such risk, based on the risk profile of the services they provide. A financial service provider must prepare to potential failure of central operational systems, by means of an emergency plan which would allow for their continuous operations.

Preparations for addressing operational risk associated with use of advanced means of payment differ from preparations for risk associated with other means of payment used in the Israeli payment system. Hence the importance for the financial service provider to manage risk in conformity with the specific attributes of the advanced means of payment.

9.3. Settlement risk

"Settlement risk" is the risk of settlement not being carried out as intended in the payment system. This risk includes credit risk as well as liquidity risk. "Liquidity risk" is the risk that the financial service provider would not fulfill all their financial obligations towards the counter-party financial service provider, when due. "Credit risk" is the risk that the financial service provider cannot fulfill all their financial obligations when due or at any other time in future.

Such risk is realized for a financial service provider when they are unable to fulfill their obligations to transfer funds. For example, when a customer makes an online purchase, the merchant, through their financial service provider, contacts the customer's service provider for approval to charge the customer. The settlement risk is realized if there is a gap between the approval stage and the funds transfer stage between the payment (settlement) service providers and in the final stage, the customer's service provider has insufficient funds in their account in the system. Realization of this risk may result in a domino effect" The financial

service provider of the credited client is not credited, and is therefore unable to fulfill their own obligation.

9.4. AML and terror financing risk³⁶

A variety of means of payment for digital transfer of value have evolved around the world for some time - and are continuing to rapidly evolve. Such means of payment include electronic wallets, payment services by cellphone and digital checks. Moves to reduce the use of cash, as well as moves to promote the use of advanced means of payment, as envisioned by the Committee, should expand the use of such means of payment in Israel and, consequently, significantly increase the volume of funds transferred through such means of payment.

Advanced means of payment provide financial tools which are simple to operate and accessible to all. Just like other financial tools, they may be abused for laundering money originating from illicit activities and to finance terror. Therefore, promoting the use of advanced means of payment involves AML and terror financing risk which should be taken into consideration.

As supervision of advanced means of payment expands, in line with their inherent risk level, their use would also reduce AML and terror financing risk compared to using cash, with the latter being completely anonymous. On the other hand, because these are relatively new means of payment and may allow for money laundering and/or terror financing - the current risk of their abuse increases.

Below are listed types of AML and terror financing risk associated with use of advanced means of payment as reviewed by the Committee³⁷. However, note with regard to this matter that such means of payment also have attributes which reduce the risk associated with use of cash and that some of the risk factors listed below are not exclusive to advanced means of payment.

AML and terror financing risk factors associated with use of electronic wallet and payment services by cellphone

AML and terror financing risk associated with use of electronic wallet and payment services by cellphone arise because most of the activity in Israel using advanced means of payment is not currently subject to supervision in conformity with the AML and terror financing regime. As the activity using such means of payment increases and is left inadequately supervised, criminals will have a stronger incentive to use them for transferring funds originating from illicit deeds. Accordingly, the Financial Intelligence Authority does not receive reports of suspect or unusual activity and therefore, crucial information for identifying and investigating AML or terror financing is unavailable. Furthermore, providers of advanced means of payment are not required to maintain records of transactions made using such means of payment for any significant length of time.

³⁶ See preliminary overview of comparative law in aspects related to AML for advanced means of payment in Appendix B (in Hebrew version only).

³⁷ Note that, based on the Committee's discussions, this review did not include AML and terror financing risk associated with use of virtual currency.

Such risk refers, *inter alia*, to the following aspects: Anonymity, Fit and Proper, identity theft, information theft and fraud, issues with regard to jurisdiction, in-person customer authentication when opening an account and the speed of transactions using such means of payment.

However, we should note, there are mitigating factors for AML and terror financing risk. These factors include the fact that transactions leave a trace, whereas using cash leaves no trace; transactions made using advanced means of payment usually leave some trace - an IP address or the name of the place where funds were deposited or withdrawn. This information may help law enforcement agencies in discovering the location or identity of the user, provided this information is kept for some time. In addition, advanced payment services are provided by computers, hence the service provider can efficiently monitor the transactions conducted by users.

AML and terror financing risk associated with use of digital checks

Use of digital checks should reduce AML and terror financing risk associated with use of paper checks by "leaving a trail" and control over check endorsement. Because these transactions are carried out digitally, they would leave data about the payment and the parties involved in it. Other data may include the IP address of the device which initiated the transaction. In addition, the system can enable control and recording of check endorsement, hence it would also store minimum information about endorsements, if allowed by the system. The system can support a limitation of the number of endorsements and, if needed, assist law enforcement agencies in tracing the funds. Assuming that endorsement is made through a bank account, it would be possible to receive the Ids of the parties involved, if needed. However, this system has several features which may pose AML and/or terror financing risk. One of the advantages of digital checks is speed: Such checks allow you to rapidly complete multiple transactions and to transfer funds within a short time. This poses a challenge to law enforcement agencies in tracking transactions and forfeiting funds, especially when it comes to funds transferred overseas. In addition, as noted above, if the system allows for anonymous endorsement without storing the ID of the parties involved, this would maintain the current risk associated with endorsement to un-identified third parties.

9.5. Tax evasion risk

Recommendations made by the Committee on Reducing Use of Cash in the Israeli Economy ("the Locker Committee") indicate that use of cash is one of the factors which facilitate tax evasion, due to being anonymous and easily hidden from authorities and because cash is easy to carry out commercial and financial transactions with. If availability and scope of advanced means of payment with similar attributes to cash and checks would increase and transactions made using such means of payment would not be documented and would have no user identification and monitoring, then - together with the law to reduce the use of cash - it may

result in economic activity transitioning from the "classic" cash economy to advanced means of payment which enable tax evasion.

In a 2012 survey by the OECD, tax authorities in several countries noted that advanced means of payment enable revenues to be transferred to foreign bank accounts and facilitate tax evasion in their country. These countries noted some tools which allow them to address the tax evasion risk associated with advanced means of payment. Primarily, they recommended ensuring appropriate access to detailed information about transfers and payments made on each platform and comparing this information with reports by taxpayers to the tax authorities. Monitoring is possible through mandatory reporting or agreement on information sharing between the tax authorities and payment platform vendors (PayPal, eBay etc.) However, these solutions do not provide a solution if the means of payment are anonymous, especially if they allow for value to be stored on them without being transferred through platforms with the parties' ID, such as a bank account or credit card.

9.6. Additional risk

In this age of e-commerce, the Internet has become a significant area for conducting financial transactions. These financial areas, which use advanced electronic means of payment, create a potential for crime and make it easier for criminals to commit online fraud, money laundering or terror financing, while at the same time enabling development of security, control and detection mechanisms to address such risk.

Online technology allows, first and foremost, duplication of commercial methods from the real world to the virtual one. Traditional means of payment are enhanced by new developments - such as payment using electronic wallet, online commerce and cellular payment - which allow one to make online purchases. As these means of payment and funds transfer in cyberspace evolve, criminals are better able to rapidly conduct a string of transactions, through multiple websites and server networks in different countries. These transactions pose a challenge to law enforcement, making it more difficult to cross-check information about activity in websites and networks around the world and to trace the money.

If the payment is transferred to an electronic wallet through a payment card or bank transfer, the buyer maintains anonymity vis-a-vis the merchant - but the bank or credit card company see a transaction made using such means of payment. This fact makes it more challenging to trace money laundering activity online, but in case of a specific investigation, it helps law enforcement agencies to trace transactions made using an electronic wallet. Review of police data shows that between 2012-2014, an average of 14,000 investigations were opened per year for theft of smart devices (phones and tablets). Device theft usually allows criminals to conduct financial transactions using the device and then to destroy them, leaving law enforcement without any real ability to trace them.

10. Legal aspects related to promoting use of advanced means of payment

Advanced payment services

The advanced payment services market is a dynamic and innovative one, including diverse products and services with different attributes - and a common ability to make payments. The Committee, as part of its work, is reviewing whether existing regulation of this market is sufficient, or whether different regulation is called for - through a legal framework suitable for all means of payment which would obviate the need for specific regulation of each one. This framework should be determined, *inter alia*, based on the features of payment services and advanced means of payment and the risk associated with use thereof.

Note that some existing statutory provisions already apply to certain types of advanced means of payment. Thus, the Debit Card Law, 5746-1986 (hereinafter: "the Debit Card Law") regulates a product – payment card - which is defined in essence and forward-looking manner; in terms of interpretation its scope may include various products, including advanced means of payment. A credit card, one of the payment cards defined in the Law, is defined as "a plate or item for repeated use, designed for purchase of assets from a supplier with no immediate payment of the consideration". According to the position of the Ministry of Justice, this definition covers, for example, a cellphone - when used as a platform for sending payments from customer to supplier through the customer's cellphone operator, when the latter provides for settlement of such payments and is a *de jure* issuer of a payment card. For this matter, this is an "item for repeated use" designed for purchase of assets defined in the Charge Card Act as "real estate, goods, money, services or rights". This also constitutes a deferred payment, such as the one made using a deferred debit card, because the customer account is charged once a month, on the date agreed with the issuer.

Even though the Debit Card Law provides an essentially wide definition of "payment card", as set forth above, this definition may, in some cases, be too narrow to include all advanced means of payment. For example, it may be too narrow to include advanced means of payment which do not involve any physical component ("plate" or "item"). Therefore, the legal framework should be adapted to changes in the market for means of payment, so as to apply to all advanced means of payment with their wide range of current and future attributes.

We should add that, when regulating this area, one should verify the consumer protection required and whom it would apply to. In this regard, attention should be given to the following aspects: Contract between user and provider of the payment service; user consent to contracting and their right to terminate it; mandatory disclosures by the service provider; user consent to the basic transaction; liability in case of abuse of the means of payment; liability of the service provider for the basic transaction between users; risk assignment between the user and provider of the payment service; dispute resolution mechanism;

specifying criminal felonies specific for this area; data entry error by the service provider with regard to the transaction amount; unloading un-utilized funds from stored-value cards.

Payment systems for promoting development of new payment services and advanced means of payment and for promoting entry of new payment service providers (transaction approval and settlement)

Our interest is in promoting the creation of a new centralized retail system for transfer of payments, a secure, reliable system for payments in small amounts, which would allow for immediate settlement and would ensure a finalized transaction made using advanced means of payment while offering wide-spread access, directly or indirectly. Use of a payment system entails practical risk, as described in this report. This includes credit and liquidity risk, cyber risk etc. Based on specification of the system and participants therein and based on analysis of the different risk factors associated with use thereof - legal solutions may be formulated to address this risk.

This may include the conditions which the system should comply with, such as³⁸: Formulating rules to ensure system stability, efficiency and proper operation; existence of means to manage risk and backup arrangements in case of emergency. In addition, we may consider specifying rules to mitigate security risk, including rules with regard to identification of system users.

Along with supervision of the system, we may review how to supervise payment service providers and the provisions which should apply to them. The model and desired provisions, as well as answers to questions such as whether threshold requirements should be specified for provision of payment services and what these requirements might be, may be determined based on the attributes of payment service providers and the nature of their operations.

By the nature of things, operations of a payment service provider entails risk. A possibility that should be considered is specifying arrangements which would mitigate such risk—such as limiting credit to short terms, allocating credit to customers out of their own funds (not out of funds deposited by other customers), guaranteeing funds with the service provider (through a trust account or bank guarantee) etc. These arrangements may be specified by the relevant regulators pursuant to their authority. We may also discuss the question of whether, in this regard, we should distinguish between service providers connected directly to the payment system and service providers connected indirectly, through other service providers.

³⁸ See, on this matter, section 50b of the Securities Act, 1968.

11. Summary and recommendations

Looking forward at operation of advanced means of payment, the Committee envisions a situation which would allow for the development and expanded use of such means of payment. This would be achieved through: (a) Existing means of payment, for example by storing cash onto an advanced means of payment, linking it to a debit card or linking it directly to a bank account. (b) Development of payment solutions which would serve as host for making payments through, *inter alia*, new providers of payment services. (c) Creating a central settlement interface which would allow for settlement of transactions using advanced means of payment which are not based on payment cards; creating additional infrastructure should expand the range of services offered and should contribute to more competition and efficiency in providing such services.

The Locker report asked the Committee to express its specific opinion on cash alternatives such as electronic wallet and digital check. The Committee, as part of its review, is aware of the wide range of advanced means of payment currently in existence around the world - and hence the need for regulation which is comprehensive, enabling and forward-looking, which would allow for evolution of a wide range of services while providing a solution for identified barriers and risk.

With regard to promoting use of the electronic wallet, the Committee believes that this means of payment may be, in future, an alternative for use of paper-based means of payment, especially for small amounts which are typically paid in cash. The electronic wallet should improve convenience of making small retail payments.

Therefore, these are the guidelines for promoting use of electronic wallets in Israel:

- The electronic wallet should allow for storing or accumulating other means of payment. Thus, it could be used to transfer online payments and as a "payment account", in which the user may store money to be used for future purchases using the wallet.
- Electronic wallets offered by different service providers should be able to communicate with each other and become part of open payment systems which communicate with each other. We can enable this by a faster system for retail payments, which would offer access to supervised entities that are not banking corporations, which offer diverse payment services - including through an electronic wallet.
- Activities involving an electronic wallet should be controlled and supervised in conformity with existing legislation and generally accepted international standards in this field - so as not to destabilize the payment system and not to provide a loophole which would enable money laundering and terror financing, tax evasion and impact to customers who use this means of payment.

As for promoting use of digital checks, the Committee considers that this means of payment could, in future, provide an alternative to traditional checks, thereby helping to reduce activity which is not reported to the tax authorities and to reduce the shadow economy by

recording of the parties involved in the transaction. However, the conditions for evolution of digital checks include creation of an appropriate legal framework for such activity and creation of technology infrastructure for inter-bank settlement.

A digital check is a check digitally issued to a customer, with the customer digitally writing the check - which may be done, *inter alia*, through the bank website or through a dedicated website; downloading a custom app to the smartphone or tablet device; and use of special automated workstations at bank branches.

Accordingly, the guidelines for promoting development of digital checks in Israel include both preserving the advantages and unique uses of physical checks and reducing the risk and disadvantages associated with using physical checks, as elaborated in Chapter 5. The Committee believes that the risk and disadvantages associated with using physical checks may be reduced, *inter alia*, by a shorter duration for settlement and finalization thereof.

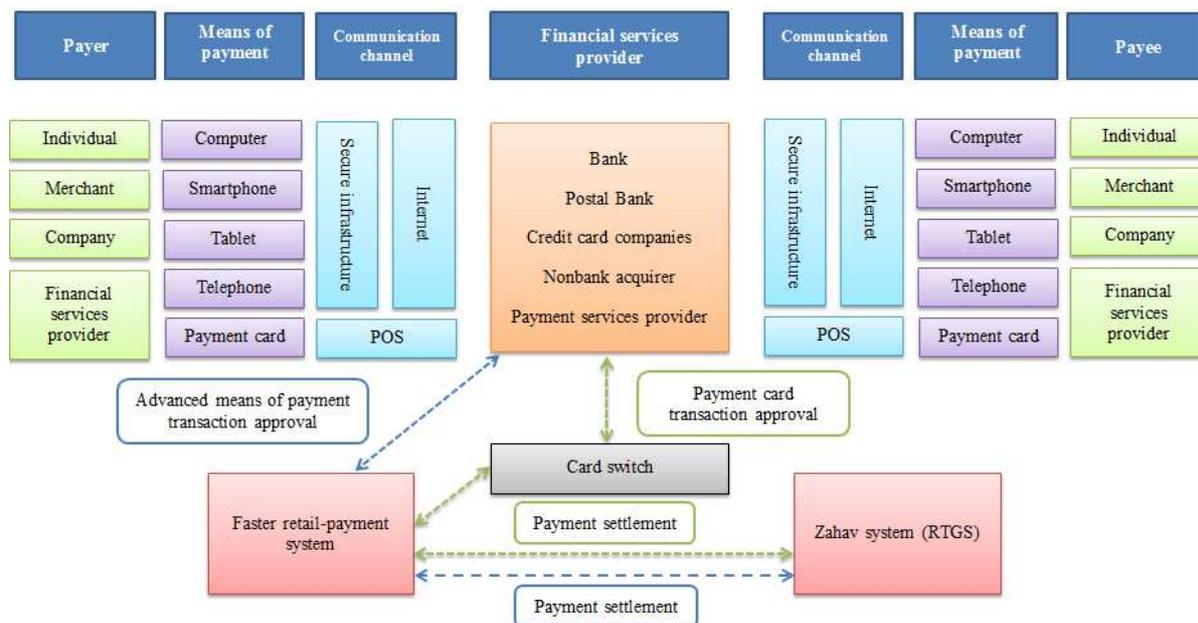
In conformity with the foregoing, the Committee considers that use of advanced means of payment as part of the payment system in Israel should be promoted by combined regulation of the legal, technology and consumer infrastructure. Therefore, the Committee recommends as follows:

- **Set up central settlement infrastructure and secure national communication infrastructure for making payments using advanced means of payment.** Create a new, fast and secure retail payment system (hereinafter: "the system") which would allow for settlement of transactions in advanced means of payment which are alternatives to cash (such as electronic wallet, cellular payments and online payments, including e-commerce).

Creation of the new system is designed to achieve several major objectives, including: High availability for making advanced payments (24/7, if possible); increase competition in the payment system by expanding access to payment systems in Israel to entities that are not banking corporations and by expanding the types of transactions which can be made without using payment cards; improve efficiency of the payment process in Israel; and increase resilience of retail payment systems.

Note that the new system would allow for settlement of retail transactions and is not intended as a substitute to the Zahav system (RTGS), which is used for settlement of high-value money transfers.

The Committee, looking at the future of the transaction execution chain for advanced means of payment, identified several links: Payer, means of payment, communication channel, financial service provider, card switch, faster retail payment system, Zahav system (RTGS) and the payee. Compared to the current situation, described in Chapter 7, the expected major changes include: the option to pay using innovative means of payment not necessarily based on a payment card; additional types and number of financial service providers; secure transactions through development of protection to ensure secure operation; and improved payment availability, convenience and reliability.



An international review indicates that various countries have deployed in their payment systems a Faster Payment system³⁹, including: South Africa (2006), Mexico (2006), UK (2008), Poland (2012), Sweden (2013) and Singapore (2014). In addition, other countries, including Australia, Finland and the USA, are in the process of deploying such systems. The review indicated that Faster Payment systems employ different business models. These models refer, *inter alia*, to creating a switch for obtaining approval for transactions conducted using advanced means of payment, finalized settlement of payment instructions in the system, maximum amounts of payment instructions which may be given using the system, types of instructions which may be settled using the system, types of participation in the system and the interface with other payment systems in operation in the national payment system. Clearly, each of the business models reviewed has their advantages, disadvantages, risks and barriers in terms of their fit with the Israeli payment system.

Creation of a secure national communication infrastructure for making advanced payments, to provide a solution for the entire transaction execution chain for advanced means of payment - i.e., from the end point through settlement of the payment instruction in the payment system. Creation of this infrastructure is a parallel step to creation of the new payment system. This secure infrastructure should provide a solution to three major cyber threats to be considered when conducting transactions involving advanced means of payment: (1) Impersonation – taking over the customer’s computer and conducting transactions in their name. (2) Forgery / abuse – theft and forgery of information in the communication infrastructure. (3) Denial of service – impact to the system and/or disabling the infrastructure which supports execution of transactions involving advanced means of payment. According to the proposal, the infrastructure should be created and

³⁹ In parentheses - the year when the system was launched or expected to be launched.

owned by the State and users thereof may include individuals, merchants and banking corporations.

Accordingly, a sub-committee would be created, led by the Bank of Israel with participation from the National Cyber Bureau and the National Information Security Authority, to create and formulate the business model for operation of the new payment system. The sub-committee shall submit its recommendations within 1 year from publication of this report.

- **Draft a bill to regulate payment services, payment account and acquirer and issuance services.** The Committee proposes uniform, lateral regulation of all services provided by such service providers, in order to avoid regulatory arbitrage⁴⁰ and to create a level playing field for provision of such services. This move would enable entry of new players and would contribute to enhanced competition in the Israeli payment system. This lateral regulation would apply to all payment service providers, based on international regulation - primarily the European one (Payment Services Directive) - with adjustments for the local market referring, *inter alia*, to consumer aspects, the obligation of payment service providers to comply with AML and terror financing provisions, the obligation to comply with information security standards as well as other requirements. In conformity with such regulation, each regulator would ensure that the payment service providers which they supervise are in compliance with the requirements. Such regulation would be addressed by a sub-committee led by the Bank of Israel with participation from the Ministry of Justice, Ministry of Finance and Antitrust Authority. The sub-committee shall formulate the draft bill within 1 year from publication of this report.
- **Adapt the existing legal infrastructure to transactions using advanced means of payment.** The existence of an appropriate legal framework would help promote the deployment of advanced means of payment. The legal framework consists, *inter alia*, of the legal, statutory basis for operation of advanced means of payment, the authority to enforce laws and agreements in all relevant cases, the set of rules for operation of advanced means of payment and the consumer protection awarded to users of advanced means of payment.

The primary legal framework which governs operation of means of payment in the Israeli payment system currently consists of the Debit Card Law, 5746-1986, the Checks Without Cover Law, 5741-1981 and the Banknotes Ordinance [New Version]. In addition, we note the bill on electronic clearing.

The Committee considers that constant review and adaptation of existing legislation in Israel is required, with reference to three key elements: users of advanced means of payment, financial service providers and payment systems. In this regard, legislative amendments should be reviewed to support regulation of AML and terror financing aspects of operations of payment service providers, in conformity with accepted international standards (FATF).

⁴⁰ Gaps between directives issued by different regulators on similar issues.

The review of the legal framework is conducted regularly, and in accordance with changes in the payment system in Israel. This review is conducted by the Ministry of Justice and other relevant entities.

- **Promote Point of Sale (POS) infrastructure to allow for contactless transactions.** The Committee considers that contactless transactions may enable and promote the use of advanced means of payment in the Israeli payment system. Efficiency, convenience and speed of use have a key influence on use of advanced means of payment, but these aspects should be considered against preserving the stability of the Israeli payment system and subject there to. We may also note, in this regard, that recommendations made by the Bank of Israel team which reviewed the transaction execution chain for payment cards, included a recommendation whereby, in order to enable entry of new entities and evolution of advanced means of payment and new routing alternatives - the POS terminals which form the infrastructure for conducting the payment card transaction should support multiple applications and contactless transactions⁴¹.

Implementation of the outline of market transition to the EMV standard provides an opportunity to promote use of advanced means of payment by creating infrastructure to support contactless transactions and multiple applications at the POS.

Contactless transactions in general - and in particular, transactions using NFC (Near Field Communication) - have become in recent years a de-facto standard in many countries (including the UK, France, Poland, Turkey, Canada). Furthermore, NFC has become in recent years a de-facto standard in Europe. In July 2014, MasterCard issued a directive, whereby all new terminals to be deployed in Europe would be required to support a contactless function⁴² as from January 2016. The company also stipulated that all terminals in Europe would be required to support this function by 2020.

- **Review the transaction execution chain for digital checks.** The Committee considers that given the widespread use of checks in Israel and given the objective of reducing the scope of the shadow economy, a review should be conducted of how to incorporate digital checks as a means of payment in the payment system in Israel. In this regard, the transaction execution chain for this means of payment should be reviewed, including examining the alignment of the legal infrastructure with such activity and examining the creation of a new, dedicated settlement infrastructure. To the extent that regulation will be necessary, consideration will be given to whether to adjust existing legislation or to promote separate legislation.
- **Promote consumer education and generate consumer trust in advanced means of payment.** The Committee considers that promoting the use of advanced means of payment requires extensive, regulated consumer infrastructure. This infrastructure includes financial education and public awareness campaigns, designed to increase the public's confidence in such means of payment.

⁴¹ See more information on this issue on pages 32-34 of the report "Transaction execution chain for payment cards".

⁴² <http://newsroom.mastercard.com/press-releases/mastercard-fast-tracks-mobile-payment-acceptance-europe-helping-europeans-tap-everywhere-2020/>

Financial education should be provided to the public, emphasizing the advantages, consumer protection and challenges involved in using advanced means of payment - and such education may help promote the use of advanced means of payment. The financial education should be delivered in accordance with unique attributes of various segments of the population. In addition, a survey of means of payment - to be conducted by the Bank of Israel, in conformity with recommendations made by the Committee on Reducing Use of Cash in the Israeli Economy ("the Locker Committee") - may help identify the needs and barriers associated with advanced means of payment and may significantly influence promotion of their use.

Furthermore, preparing a document with questions and answers concerning the use of advanced means of payment, to be published on websites of the Bank of Israel and of Government ministries participating in this Committee, may help promote the use of advanced means of payment.

The Committee will continue to implement the outline of recommendations made in the report by the Committee on Reducing Use of Cash in the Israeli Economy ("the Locker Committee") and the recommendations arising from this report. The Committee will also continue to monitor developments in advanced means of payment in the Israeli payment system.

12. Glossary of terms⁴³

Term (in alphabetical order)	Definition
Means of payment	Any financial instrument which allows the holder thereof to transfer funds or to pay for goods and services. Commonly used means of payment include: Cash, check, direct debit, direct credit and payment card.
Advanced means of payment	An electronic financial instrument which allows the holder thereof to securely transfer funds or pay for goods and services.
Electronic wallet	An electronic means of payment which allows for storing or accumulating other means of payment and designed to be used to transfer payment and to purchase goods and services between two parties.
Payment account	An account held in a customer's name, used only to conduct payment transactions.
Payment card	A means of payment with information about the payer account stored in a magnetic stripe and/or in a chip, which may be accessed through an appropriate device or interface by the payee. This definition excludes cards issued by businesses and that may be used at only a limited number of merchants.
Issuer	An entity which provides means of payment to its customers, approves payment transactions and guarantees the payments approved thereby to the seller of the goods or services.
E-commerce	Conducting electronic transactions, usually through online communication between various devices, without requiring a meeting of buyer and seller.
Clearinghouse	A central location - or central processing facility - whereby financial institutions agree to exchange payment instructions or other financial commitments. The institutions clearing the items exchanged on the agreed date.
Payment system	A system used to receive, transfer or execute payment instructions between system participants, including the means of payment used to transfer or execute payment instructions.
Fast, secure retail payment system	A system for retail use, used to receive, transfer or execute payment instructions between participants in a fast, secure manner - typically within a few hours.
Cards' Switch	An entity used by participating institutions (acquirers and issuers) to route messages related to approval and authentication, which may generate and disseminate clearing files.

⁴³ The following definitions are provided for use in this report only.

Term (in alphabetical order)	Definition
Financial service provider	A financial service provider offers its clients a range of services, in accordance with a license granted there to. These services may include: payment transfer - including direct debit, direct credit, transaction involving a payment card and standing orders - as well as issuer and acquirer of payment cards.
Settlement	An action which releases a liability between two or more parties, related to transfer of funds, securities or other financial assets.
Contactless transactions	Contactless payment transactions, conducted through a custom component embedded in the means of payment and through a custom reader, which can receive the payment instruction transmitted there to.
Communication channel	A channel which may be used to transmit information, including payment instructions, between the payer and the cards' switch or the payment system.
Digital check	A means of payment which mimics the key attributes of a traditional (physical) check - where the issue, sending and presentation are made electronically
Payment service	Services provided by financial service providers. These include: direct debit, direct credit, transaction involving a payment card and standing orders - as well as issuing and acquiring of payment cards.
Cellular payments	Payments using a cellphone or smartphone, including payments using an app installed on a smartphone or through access to the account of the payer.

13. Committee members

Name	Office
Irit Mendelson	Committee Chair - Bank of Israel
Batya Harari	Prime Minister's Office
Gil Bareket	Israel Money Laundering and Terror Financing Prohibition Authority
Ayelet Minster-Sher	Israel Tax Authority
Rani Neubauer	Ministry of Justice
Reut Ofek	Ministry of Justice
Dana Heller	Antitrust Authority
Elad Makdasi	Antitrust Authority
Tal Goldstein	National Cyber Bureau
Tal Steinhart	National Cyber Bureau
Ron M.	National Information Security Authority
Liran Haim	State Attorney's Office
Shimon Ben-Shoshan	Israel Police
Ronit Chitayate	Bank of Israel
Noa Sheshinski	Bank of Israel
Yael Rashti	Bank of Israel
Gil Polak	Bank of Israel
Ronen Nissim	Bank of Israel
Nir Levy	Committee Secretary - Bank of Israel