

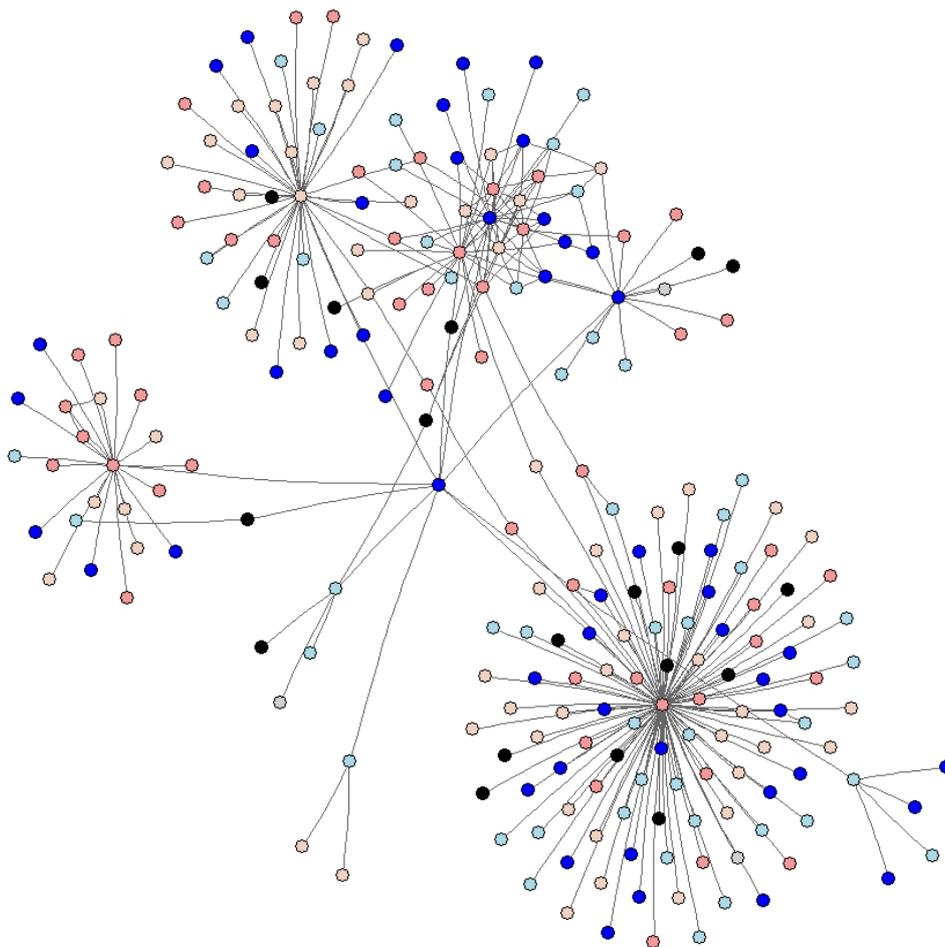


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Market Research: P2P Transfer Apps¹

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Market Research: P2P Transfer Apps

Introduction

The Israel Competition Authority (hereinafter: **the ICA**) has recently conducted a study in the industry of payment apps that provide payment transfer services between individuals. At present, these apps are exclusively owned by banking corporations. This report describes the ICA's study, its conclusion and the corresponding policy recommendations.

The payment apps owned by the large banks - Bit by Bank Hapoalim Ltd. (hereinafter: **Bank Hapoalim**) and Pay (formerly Pepper Pay by Bank Leumi Le-Israel Ltd. (hereinafter: **Bank Leumi**) commenced operations in 2017. That same year Discount Bank Ltd. (hereinafter: **Discount Bank**) purchased a payment app called Paybox. The main service provided by these payment apps up until recently was executing person-to-person payment transfers (hereinafter: **P2P transfers**).²

Over the recent years, competition authorities around the world are more frequently challenged by digital platforms that benefit from a network effect in the consumption of the services they provide.³ The competitive dynamic that characterizes these markets is strong competition for the market, but once that's decided, competition tend to converge to a winner-takes-all market. At this stage, market entry barriers are so high that a potential entrant, even one offering a preferential service, will not be able to successfully enter the market.

Another characteristic of these markets is the central role of information, particularly user data obtained while using the platform. Obtaining this information enables firms to offer customers supplementary and additional services. As a result, a winner-takes-all market structure in a given market could give rise to high degree of concentration in other related markets as well.

Key factors for preserving competition in digital platform markets are maintaining consumers' ability to consume the product from a number of suppliers (hereinafter: **multi-home**), and reducing barriers to transitioning between different service providers. That is mainly by ensuring interoperability of platforms and customers' data portability.⁴

The ICA's study on the field of payment apps P2P transfers in Israel points to these main findings: **(1) There is a significant network effect in the consumption of P2P transfer**

² This study focuses on the P2P transfer service that is provided by the aforesaid apps, and will not examine other services these apps may provide, such as payments to businesses.

³ A direct network effect is characterized in that the multiplicity of users of a product increases the benefit of its use.

⁴ OECD (2021), Data portability, interoperability and digital platform competition, OECD Competition Committee Discussion Paper, <http://oe.cd/dpic>; Crémer, J., de Montjoye, Y.-A. and Schweitzer, H. (2018). Competition Policy in the Digital Era. Report for the European Commission; Joint Paper of the Competition Authority, [The Privacy Protection Authority and the Consumer Protection and Fair Trade Authority on the Right to Data Portability, published on January 3, 2021.](#)

services; (2) this field tends towards a winner-takes-all – Bit; (3) this field still holds significant growth potential; and (4) Paybox is differentiated from other payment apps by its group payment transfer services.

In light of these findings, the ICA recommends for new measures to weaken the network effect by creating interoperability between the apps. The purpose of these measures is to enable each consumer to choose their preferred payment transfer app, regardless of the number of users on each app's network. Furthermore, the ICA recommends allowing apps to use users' data obtained while providing P2P payment transfer services. This is aimed at enabling apps to offer consumers additional financial services that best fit users' needs.

1. Background

In early 2017, the two large Israeli banks, Bank Hapoalim and Bank Leumi, both launched smartphone compatible payment apps: Bank Hapoalim's Bit app and Banl Leumi's Pay app. In that same year, Discount Bank purchased the operations of an up-and-running payment app called Paybox. The main service provided by these payment apps up until recently was executing P2P payment transfers, which are the focus of this study, as aforementioned.

The ICA's focus on the field of P2P transfer services stems from the importance of competition in the provision of banking and payment services, alongside various concerns regarding a high level of concentration in this field. The main purpose of this study is establishing a factual infrastructure regarding developments between 2017 and 2020, enabling the drawing of evidence-based policy recommendations.

The main questions the study aims to answer are: (1) Is there significant growth potential in the field of P2P transfers in payment apps beyond current use? (2) Is there a network effect in this market? (3) Does competition tend towards a-winner-takes-all market structure? (4) What is the scope of multi-homing in the market and can it diminish competition concerns? (5) Is there differentiation between existing payment apps? (6) What is the scope of payment apps' use by small and very-small businesses?

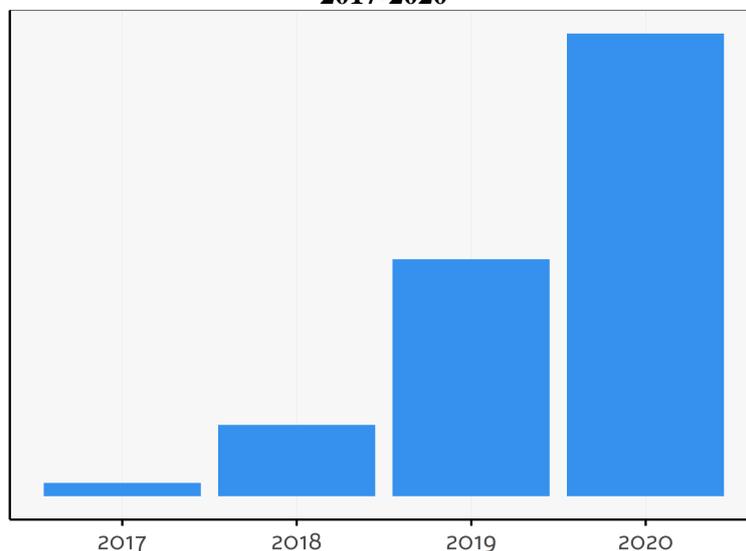
The database used in this study covers the vast majority of P2P transfers executed using payment apps between 2017 and 2020. As can be imagined, conducting this study involved the use of commercially and competitively sensitive data. This sensitivity alongside the small number of players in the market makes it difficult to lay out information in a manner that prevents identification of the specific players. For this reason, data or results that amount to commercial secrets, or such that might harm competition if disclosed, have not been included in this report. Furthermore, in some cases, the ICA's conclusions from the study is set out

alone, omitting the detailed findings themselves, while other parts of the results are only set out in approximation.

2. Development in the Use and Operations Costs of Banking Payment Apps in 2017 - 2020,

Since the start of its operation in 2017, the field of payment transfer apps has enjoyed accelerated yearly growth of hundreds of percent, in both number of transactions and volume of operations. Though growth rates have relatively slowed over time, 2020's annual growth is still remarkable and stood to approximately 100%. The number of apps payment transactions in 2020 exceeded 50 million, and the total volume of transactions significantly topped NIS 10 billion. Figure 1 depicts the development of app operations.

Figure 1: **Development of Volume of Transactions in Banking Payment Apps 2017-2020**



Source: Bank Hapoalim, Bank Leumi and Discount Bank; Research Division's calculations

P2P transfer apps in Israel are based on payments via charge cards, mainly credit cards, meaning the transfer requires use of the credit card's line of credit. Whilst customers may benefit from the deferral of charge date, this model of operation involves significant costs for the app operator, as customers are currently not charged for the use of this line of credit. From the customer's point of view, transfer of payments via an app is executed by charging his credit card and transferring the payment directly to the beneficiary's bank account.⁵ In practice, the payment transfer is realized by charging the payer's credit card in a transaction in which the bank operating the app serves as a business charging a "standard purchasing transaction" transparent to the customer. This is followed by the app's operating bank executing a bank

⁵ Note that some of the transfers executed on Paybox do so by withdrawing funds accumulated on the user's Paybox account, and not by charging the user's credit card.

transfer to the payment beneficiary's account.⁶ This transfer is realized even before the app's operating bank receives the payment from the payer.⁷ The described method of executing app transfer payments imposes **clearance costs** on the operator of the app, which increase in direct proportion to the scope of transactions executed using the app. In general, the clearance fee that every business pays cannot be less than the sum of the interchange fee (the fee that the clearing house pays the issuer for the transaction). The interchange fee currently stands at 0.550% of the transaction.⁸ And all of this while the P2P transfer service is offered to private customers for free.⁹ The significance of this is that the app operators are currently bearing these costs.

This method of execution of transfer transactions using a banking payment app is costly for the app's operator, and does not appear to be commonly used around the world. In other countries where banking payment apps operate (such as Sweden, Norway, Great Britain and the United States), the transfers are based mainly on bank transfers from one account to another; often bank transfers in the same country pass through faster payment systems which enable the beneficiary to receive the money immediately.¹⁰ Completion of development of an immediate payment system and legislation regarding payment transaction initiation in Israel is expected to enable an immediate payment system to act as a technological alternative platform to transfers based on credit cards.

2.1 Market penetration rate

The ICA's estimates indicate that the number of registered payment apps users by the end of 2020 reached approximately 65% of the number of overall potential users (hereinafter: the

⁶ Note that some of the transfers on the Paybox app are executed by crediting the credit card and not by way of a bank transfer.

⁷ A credit card debit transaction that is executed on the app is a "missing document transaction" (i.e., a transaction that does not include a two-stage verification process). In these kinds of transactions, the business bears the risk of denial of the transaction by the customer. In other words, in the event of denial of performance of the transaction by the customer, the operating bank does not receive the payment at all.

⁸ The interchange fee is the payment that is made by the clearing house (the party with which the business contracts for the purpose of receipt of payment via debit card) to the issuer (the party that issues the debit card to the customer) in each debit card transaction. As of January 2019, the sum of the fee has been prescribed by the Governor of the Bank of Israel. In the past, the interchange fee was set in an arrangement that was formulated with the involvement of the ICA and approved in the Competition Tribunal in 2012. The reason for the regulatory intervention in setting the interchange fee was due to the fact that it constitutes an arrangement between competitors, with all of the competitors who are, on the one hand, issuers and on the other hand, clearance houses, having an incentive to set a high fee. When operating payment apps in Israel started (2017), the interchange fee for executing deferred charge transactions amounted to 0.7%. The fee was reduced on January 2019 to 0.6%, and reduced again on January 2021 to 0.55%. A third and final reduction is scheduled to take effect on January 2025, down to 0.5%. The rate of the final commission is due to reflect the costs of the issuer in executing transactions on debit cards. The interchange fee for immediate debit transactions was lower and remained set at a rate of 0.3% during that period. [Link to the Bank of Israel outline for the reduction of interchange fees in the clearance of transactions on credit cards.](#)

⁹ There are cases where the beneficiary of an app transfer is required to pay a bank fee, for the money transfer to his bank account. This depends on the term of the beneficiary's contract with his bank, relating to the commissions that are employed on the account.

¹⁰ Note that the leading bank payment app in Denmark is based, similarly to the current situation in Israel, on a debit card system.

penetration rate).¹¹ Estimates also indicate that the share of active users in 2020 (i.e., users who made one or more uses of a payment app during the course of the year) amounted to approximately 55% of the number of potential users. Table 3 below sets out the penetration rates in a number of other countries, relative to the entire population aged 18-75. This comparison shows that Israel is in a relatively low position relative to most of the Nordic countries, which are the global leaders in use of P2P transfer apps. The Israeli position thus indicates that the local market still has significant unrealized growth potential, estimated at dozens of percent in the number of app users.

Table 3: International comparison of penetration rates

Country	Mobile P2P Payment Penetration Rate in Population Aged 18-75
Sweden	81%
(*) Norway	81%
Denmark	79%
Finland	41%

(*) Deloitte survey data, 2018¹²

A comparative examination of the scope of use of P2P transfer apps in other countries, which is set out in Table 4, reinforces the assessment that there is a significant growth potential for use of payment apps which has not yet been realized in Israel. More than 30% of respondents aged 18-75 in Sweden, Norway and Denmark, attested (in 2018) to the fact that they transfer payments to other persons via their mobile telephones at least once a week. However, Israeli data shows that no more than 5% of the population in that same age group used a P2P transfer apps at least once a week during sampling period (the 40 weeks that were examined during the course of 2020).¹³

¹¹ The ICA's assessment regarding the number of potential users is not set out in the report due to the sensitivity of the information regarding the overall number of registered and active users. The main assumptions used for drawing the assessment are: The relevant population is the adult population aged 18 and above; the potential penetration rate is lower for the following groups: The elderly population (65 and above), the Ultra-Orthodox community, due to relatively low usage of smartphones, and the Arabic population due to relatively low usage of credit cards.

¹² Deloitte (2019). Chasing cashless? The Rise of Mobile Wallets in the Nordics.

¹³ No corresponding survey was found or conducted regarding usage patterns in Israel resembling the Deloitte survey. By way of comparison, we presume that people who make use of payment apps at least once a week over a period of 40 weeks or more in a year, would have responded affirmative to the following question: "Do you transfer a payment to another person via your mobile telephone at least once a week?" Whilst others would have responded negatively. Sensitivity tests were conducted replacing the at-least-once-a-week usage of payment apps' rule of thumb, with an at-least-once-a-week-for-40-weeks rule. These tests provided similar findings regarding the relatively low usage rate in Israel.

Table 4: International comparison of frequency of use of payment apps for executing transfers.
Among the 18-75 age group

Country	% of mobile phone transfers to another person at least once a week
Sweden	35
Norway	32
Denmark	32
(*) Netherlands	23
Ireland	17
Belgium	16
Great Britain	15
Finland	11

(*) Deloitte survey data, 2018¹⁴

A number of reasons might contribute, in our assessment, to the discrepancy between Israel and the benchmark countries, with respect to the use of P2P transfer apps. The first is due to the existing limitations on the volume of payments that can be transferred via apps. Particularly limitations on the daily and monthly sums that may be transferred by the payer, and the total annual payments that may be received by the beneficiary via the app.¹⁵ These restrictions cause small and very small businesses who could have potentially benefited from the receipt of payments via payment apps, to not be able to do so.

A second possible reason for the Israeli relative underperformance might be a preference by a wider segment of the population for usage of cash payments, relative to benchmark countries, which inhibits the adoption of advanced payment measures.¹⁶

A third possible reason relates to non-exhaustion of user potential. The usability and number of users of a network product are related to one another, so that failure to realize full user potential gives rise to lower potential use for each user. As will be shown below, this study finds support

¹⁴ Deloitte (2019). Chasing cashless? The Rise of Mobile Wallets in the Nordics.

¹⁵ There are some differences between the usage limitations on the apps set by the different app operators. Bit has set a daily limitation on transfer of payments at NIS 3,600; Pay has a set daily limit of NIS 4,000 and Paybox has a single transfer limit of NIS 1,500. Monthly limitation on transfers of payments are also in place: Bit and Pay's limits transfers at NIS 12,000 and Paybox's limit stands at NIS 7,500 (either transfer or receipt of payments). The basic annual limitation on the receipt of payments via all apps amounts to NIS 50,000. Bank Leumi, which operates Pay and Discount Bank which operates Paybox, both enable an increase in the annual receipt limitation, under certain conditions. See Chapter 6 for further details on this issue.

¹⁶ The preference for the use of cash is closely related to the black market economy (see [The Report of the Committee to Examine the Reduction of Use of Cash in the Israeli Economy](#)). A study conducted by the World Bank estimated the size of the black-market economy in Israel in 2007 at approximately 23% of the GDP. Friedrich Schneider, "Shadow Economies all over the World", The World Bank, (7/2010 15).

for the fact that use of apps for executing P2P transfers is indeed a network product. This is a relatively new service on the market, so that naturally the entire potential of the transfers' system has not yet been realized.

2.2 Transfers via payment apps are differentiated from bank transfers.

An alternative way of executing electronic P2P transfers via mobile telephone is doing so using bank apps. These kinds of apps are intended for enabling customers to keep track of their current accounts, and are operated by all of the banks in Israel. A number of functional characteristics distinguish bank transfers via current account managements apps and the execution of transfers via a payment app. We shall now note the main differences.

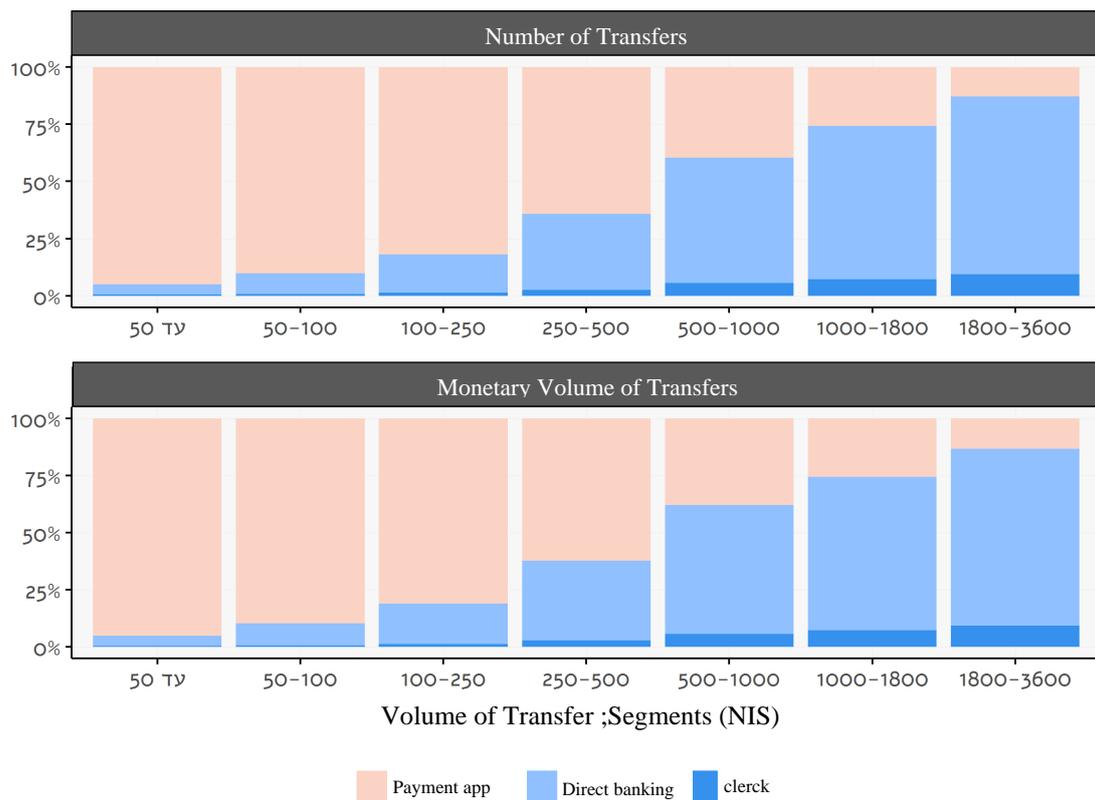
Table 5: Functional differences between P2P Transfers using Payment Apps and Bank Transfers

Feature	Transfer via Payment App	Bank Transfer
Information required by payer	Mobile telephone number of the beneficiary	Usually, account number and branch number of the beneficiary
Number of steps required for completion of payment transfer	Minimal- this is a key objective of the app developers	The app is usually more complex and requires passing through a larger number of steps before the transfer is complete
Limitations on the volume of money transferred	Limitations are set on the volume of daily (NIS 1,500 - NIS 4,000), monthly (NIS 7,500 - NIS 12,000 cap on receipts) and yearly (NIS 50,000) transfers	The cap on a single transfer is significantly higher. No cap on receipts
Limitations on user population	Payers are customers of all banks who hold a debit card; beneficiaries are those registered on the app	Payers can only be customers of the bank; beneficiaries can be any persons with bank accounts
Use of credit facility on card	Yes ¹⁷	No
Assurance of payment to beneficiary	Yes	No
Use of credit facility on current account immediately upon performance of transfer	No	Yes, the transfer is subject to payer's account balance
Price	The beneficiary pays a commission in accordance with the agreement with the bank where his account is kept	The payer and the beneficiary each separately pay a commission in accordance with the agreement with the bank where their accounts are kept

¹⁷ This is relevant to use of credit and not of immediate debit card on the apps.

A comparative examination of the payments that are transferred via P2P transfer apps relative to "standard bank transfers", shows that not only functional but also significant usability differences prevail between these two types of transfers. As may be seen in Figure 2, despite the fact that the number of users who make use of the "bank transfer network" (i.e., all persons operating current accounts in Israel), is much larger than the number of users of payment apps, the vast majority of transfers of small sums are executed using payment apps. On the other hand, transfers of large sums are executed mainly via bank transfers.

Figure 2: Market shares of transfers, based on transaction channel and transfer amount



Source: Bank Hapoalim, Bank Leumi, Discount Bank and Mizrahi Bank; Research Division's calculations

3. The Market Structure: Market Share and Differentiation

The leading competitor in the field of P2P transfer apps in Israel is, without question, Bit; some of the findings that support this will be set out below.

Bit commenced its commercial operations in January 2017, when two months later, Pay joined the market. Paybox commenced its operations as an entrepreneurs' project in 2014, and was acquired by Discount Bank in 2017. ICA's data shows that though Bit has been leading the market with the highest number of users since the first year of its operations, the significant gap between Bit and its competitors opened during the course of 2019.

An examination of the number of active users, the number of payments transfers executed using Bit and the overall volume of transfers executed using the app shows that in 2018, Bit successfully grounded the leader status for itself. This dominant status has been strengthening ever since then. In 2020, the vast majority app payment transfers in both transaction numbers and monetary volume, were executed using Bit. The remaining transfers were mainly executed via Paybox, and a relatively small share of transactions executed via Pay. Note that Bit's share of both number of payments transfers and their monetary volume, is greater than its share of the number of users.

On digital markets, particularly markets in which a network effect exists, the ability of small competitors to distinguish themselves from the leading incumbent firm is, often, a necessary condition for their successful entry onto the market, or for their business survival.¹⁸ The ICA's examination has shown evidence of Paybox's distinction from the other apps in a niche service, and is the leading group payments app.

Group payment (or **group transfer**) is a type of P2P transfer that is used for various group arrangements such as PTA staff appreciation gifts, shares take-out meals, group gifts, etc. Group transfers constitute a small portion of all of the transfer transaction executed using the apps, and make for a small percentage of the monetary volume of P2P transfers.

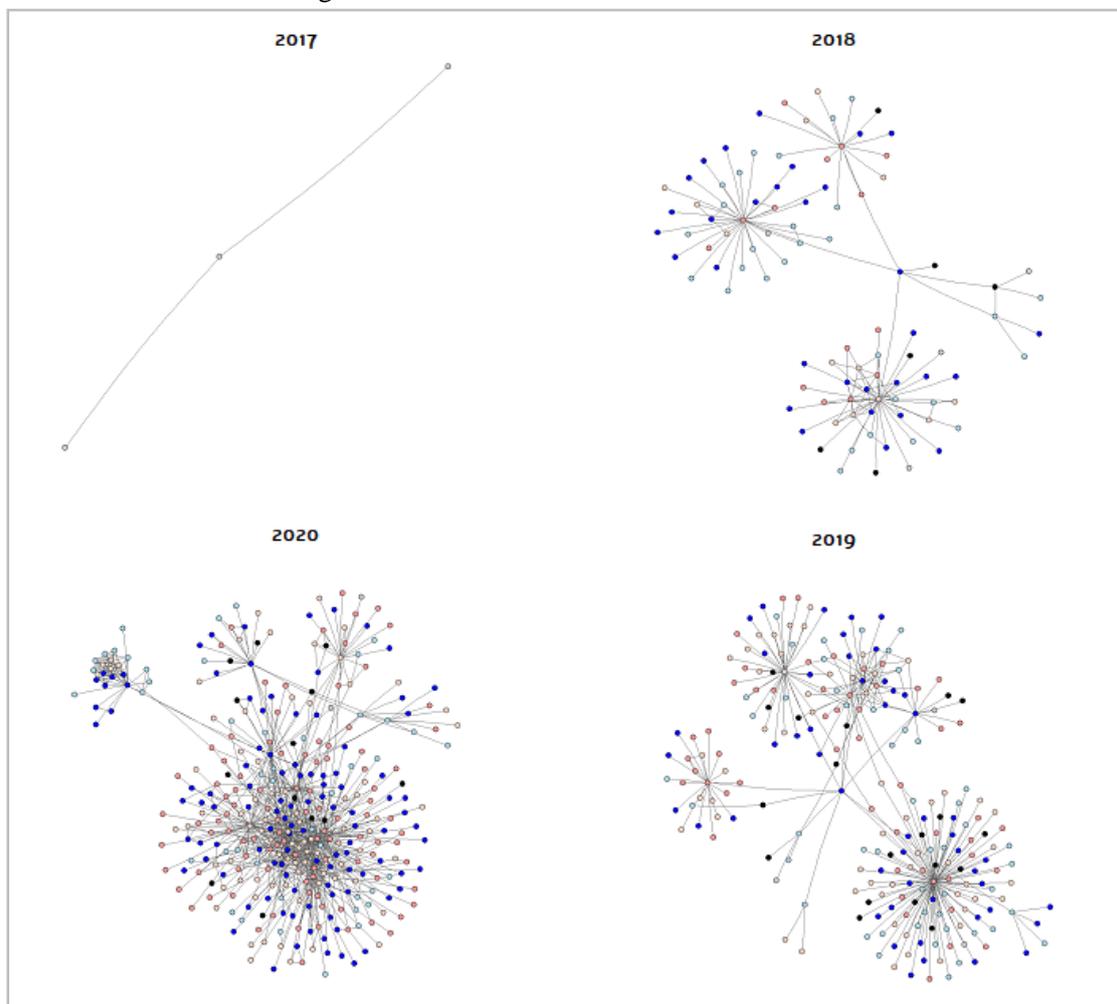
It appears as though Paybox's relative advantage in group payments stems from the app's unique features. The app was originally developed with the aim of providing a friendly interface for the collection of group payments. Specifically, Paybox's unique operating feature is the existence of an on-app transitional account, which holds the funds paid by the group members. This feature entails two key advantages for group payments: (1) The group is not required to open a current account in order to manage the funds accrued (up to the sum of NIS 25,000 on the basic plan or NIS 75,000 on the upgraded plan); (2) the funds are accumulated gradually in the transitional account, and can be transferred on in either a lump sum single transfer, or multiple small amounts transfers. However, in the other apps every transfer is transferred to the manager of the group separately. The multiple number of transfers on the competing apps might give rise to the collection of a higher cumulative sum from the group members, to compensate the group's beneficiary for commissions collected by the bank where his account is kept, for each separate transfer.

¹⁸ Crémer, J., de Montjoye, Y.-A. and Schweitzer, H. (2018). Competition Policy in the Digital Era. Report for the European Commission. (pp. 35-38)

4. Network Effect

A network effect is a phenomenon in which the value that users or consumers of a product or service derive from its usage, increases as the overall number of users using the same (or a compatible) product or service, increases. Thus, in the field of P2P transfers, the larger the number of customers who use the app, the larger the number of potential transaction partners per user. Therefore, the potential number of transfers that each user might make in the app increases as the network grows. Higher usability gives rise to greater utility for potential new customers considering using an app, leading to the principal source of the network effect P2P transfers. Figure 3 below suggests the existence of a network effect in Bit's P2P transfers network.

Figure 3: **Illustration of the Network Effect**



Source: Bank Hapoalim; Research Division's calculations

The above figure illustrates the development of the transactions' partners network of a randomly chosen Bit user between 2017 and 2020. Each node on the network illustration describes a user, and each line indicates that the two connected users performed one or more payment transactions between them. The described network is a second-degree network, that is the network describes transactions between the randomly chosen user, his transaction partners, and the transaction partners' transaction partners. The different nodes colors represent different levels of

activity.¹⁹ We should note that the size of the transaction partner network of the selected user is between the 25th percentile and the 50th percentile among Bit users.

Previous economic literature demonstrates how a network effect can lead to a winner-takes-all market structure.²⁰ Such markets are often characterized by the incumbent firm holding significant market power, which can be exploited on either the primary market or on adjacent markets. The network effect greatly increases the entry costs of new firms into the market, so much that it can even prevent market entry of firms offering preferential services. As a result, innovation incentives on the market might be harmed.

The incumbent firm's market power can be reduced when a sufficient number of customers are willing to consume the service from several suppliers (i.e. **multi-home**). We shall expand on this subject in the next Chapter.

Two main quantitative signals may support the existence of a network effect in the field of payment apps in Israel: (1) an increase in the usability of Bit as the number of users has increased; (2) greater usability of apps with a larger number of users. This study focuses on the examination of three main indicators: (a) users' number of transaction partners, i.e., the number of persons to whom the user transferred payment or from whom he received payment; (b) the number of transfers to which the user was a party (payer or beneficiary); (c) the total monetary volume of the transfers to which the user was a party (payer or beneficiary).

An examination of these indicators shows that Bit's usability increase was positively correlated with the number of users. This correlated growth was found to be not linear, but rather convex, i.e., there are economies of scale in usability as a function of the number of users.

Evidence of the existence of a network effect can also be seen in the recruitment of new users. In this study, we examined the choice made by new users – users who had not yet used any P2P transfer app – as to which app to join. For the sake of simplicity of the econometric analysis, new users' choice was reduced to a binary decision – joining either Bit or Paybox (Pay was excluded due to the small scope of transactions). The examination focused on transactions in which one party to a transaction is a new user and the other is a pre-existing user of both of the

¹⁹ The colors of the nodes were set out to reflect the "heat map" of financial sum of all of the transactions of the represented user. The pink toned nodes describe a high level of activity, the blue toned nodes describe a medium level of activity and the gray ones describe a low level of activity.

²⁰ Katz, M., & Shapiro, C. (1994). Systems Competition and Network Effects. *The Journal of Economic Perspectives*, 8(2), 93-115. The dynamic on the market is described as follows: "In markets with network effects, there is a natural tendency toward de facto standardization, which means everyone using the same system. Because of the strong positive-feedback elements, systems markets are especially prone to "tipping," which is the tendency of one system to pull away from its rivals in popularity once it has gained an initial edge ..." In other words, once one of the competitors on the market with network effects reaches a competitive advantage point, the market tips in his favor, and a gap is opened between the market leader and his competitors.

apps prior to executing the examined transaction. We shall now describe two alternative options for the established user's influence over the new user's decision to join.

The first option is that since the pre-existing user makes use of both apps, he is indifferent in the choice between them. In such a case, determination of the chosen app will not be affected by his usage history. The alternative option is that the pre-existing user prefers to focus his consumption in one place (or simply prefers to use one of the apps). In that case, he will sway the new user towards adopting the app that the pre-existing user prefers. In other words, the established user "recruits" the new user to the network that he prefers.

Due to the sensitivity of the data we shall not set out the details of the findings, but rather note that they support conclusions regarding the existence of a significant network effect and app differentiation. We should note that the impact of the size of the network on the recruitment of new customers is an expected impact that stems from the dependence of the quality of the service on the number of users. However, the finding noted here is slightly different as it emphasizes the impact of the transaction partner, on the app selection.

5. Multi-Homing: Consumption of Services from a Number of Suppliers

The willingness of consumers to consume a product or a service from more than one supplier (multi-home) might restrain the ability of the incumbent firm that enjoys a network effect to exploit its power against them. In particular, it might enable a new firm that offers an innovative product or a niche product to enter the market and possibly eventually challenge the incumbent firm.

In terms of the extent of multi-homing in registration for P2P apps, the data indicates that the share of users registered to more than one app ranges between 40% and 65%. The data also points to a significant difference between Bit and the other apps – whilst a large percentage of Bit users are exclusively registered on Bit, the majority of Paybox and Pay users are also registered on at least one other app. There is currently no registration fee for the Israeli payment apps. Hence, it is plausible that a user that is registered for a number of apps, would in fact only make use of one app, or alternatively make use of different apps for different purposes. This suggests that from the user's point of view, the substitutability between the apps is limited. In order to examine this issue, the choice patterns of existing users for payment transactions executed in 2020 were analyzed. In these transactions, both of the transaction parties are pre-existing users of the app which they chose to use. These transactions were divided into categories on the basis of two types of cross-sections:

- 1) The common group of choice for both payment transaction parties. In other words, the group of apps that both of the parties to the payment transaction had used in the past. For instance, if both parties had previously made use of Bit and Paybox, then the group of choice contains both Bit and Paybox. On the other hand, if one of the parties had made previous use of Bit only, whilst the other party had made previous use of both Bit and Paybox, then the group of choice contains Bit alone. **The group of choice is in fact the group of apps that are mutually available for use by both payment transaction partners.** In particular, the group of choice contains apps which neither of the parties is required to register for especially in order to execute the selected transfer transaction;
- 2) Type of payment – group payment or non-group payment.

These examinations showed that close to 50% of non-group transfers were executed where the transaction partners' common group of choice contained Bit only; that is as opposed to only a small share of transactions in which the common group of choice only contained Paybox or Pay. This finding establishes further evidence of the magnitude of the network effect in P2P transfers, i.e., of the fact that a larger number of users increases usage potential.

Furthermore, even when considering cases in which the common group of choice contains both Bit and another app, the vast majority of non-group payment transactions are executed using Bit. This evident preference for paying via Bit, even where the users had additional options (i.e., where the network effect was “neutralized”), could stem from a preference for focusing operations in one place, i.e., habit formation, or a preference for the app's features (such as simplicity of operation, etc.).

On the other hand, with respect to group payment transactions, the picture is completely different and Paybox has a significant differentiation, even where the transaction parties have another app in their common group of choice.

The conclusion that arises from these findings is that the substantial rate of multi-homing in registration is not evidence of a high willingness of consumers to use more than one payment app in order to perform the same transaction. Rather, they serve as evidence of the differentiation between Bit and Paybox, in the context of group payments. The findings that are set out in this section provide additional evidence of the existence of a network effect in P2P transfers and reinforce the concern of a winner-takes-all market structure.

6. Business Transaction on P2P Transfer Apps

In July 2019, the Bank of Israel instructed the banks to limit commercial operations on their payment apps. This instruction was made as an infant-industry protection for the credit card companies that had been relatively newly separated from the large banks (the “Governor’s Outline”).²¹

In fact, two types of businesses make use of payment apps. The first type is medium and large-sized businesses, such as insurance companies, fast food chains and restaurants. In our understanding, the prevalent practice is that these businesses sign an agreement with the app that they use, prior to their joint operations, in order to settle the joint venture commercially and technologically. This covers a very small number of businesses. The common uses that these businesses make of the app include receipt of monies from their customers, such as payment for ordering food (P2B - person to business), or transfers of payments from the business to the user, such as insurance reimbursements (B2P - business to person).

The second type of businesses identified in this study are small and very small businesses, including the self-employed. These make use of P2P transfer apps without necessarily having pre-arranged their activities with the apps. We are unable to unequivocally distinguish the data between a private user with a high volume of activity on the apps and a very small business' use of an app. The research data regarding transactions executed from the beneficiary's point of view, indicates that a very small minority of beneficiaries' total cumulative annual transfers on all apps exceeds NIS 40,000. This minority of beneficiaries concentrates a considerable portion of both the number and volume of transactions. In fact, the share of the volume and number of transactions held by these beneficiaries reaches almost ten times their share of the number of beneficiaries. For the purpose of the analysis, we shall define these beneficiaries as businesses. The state of affairs where a small share of beneficiaries has extensive activities suggests **a kind of two-sided platform is being formed, connecting tens of thousands of small and very small businesses on the one hand, to millions of consumers on the other.**

Use of the above definition of business activity enables a distinction to be drawn between two types of non-group transfers: ordinary P2P transfers and commercial transfers (i.e., with at least one party that is most probably a commercial user) thereby allowing a better mapping of the market data of firms in each relevant category. Doing so enables identification of Bit's market share in the segment of "ordinary transactions", i.e., transactions that are neither group transactions nor commercial transactions. The examination shows Bit's market share in

²¹ [Link to the Position Paper of the Bank of Israel regarding the Operations of Bank Payment Apps – July 2019.](#) According to the Outline, in 2019, 2020 and 2021, the operations of each of the banks in the field of payment apps among businesses would be limited to a threshold of 2 billion, 2.5 billion and 3 billion New Israeli Shekels, respectively.

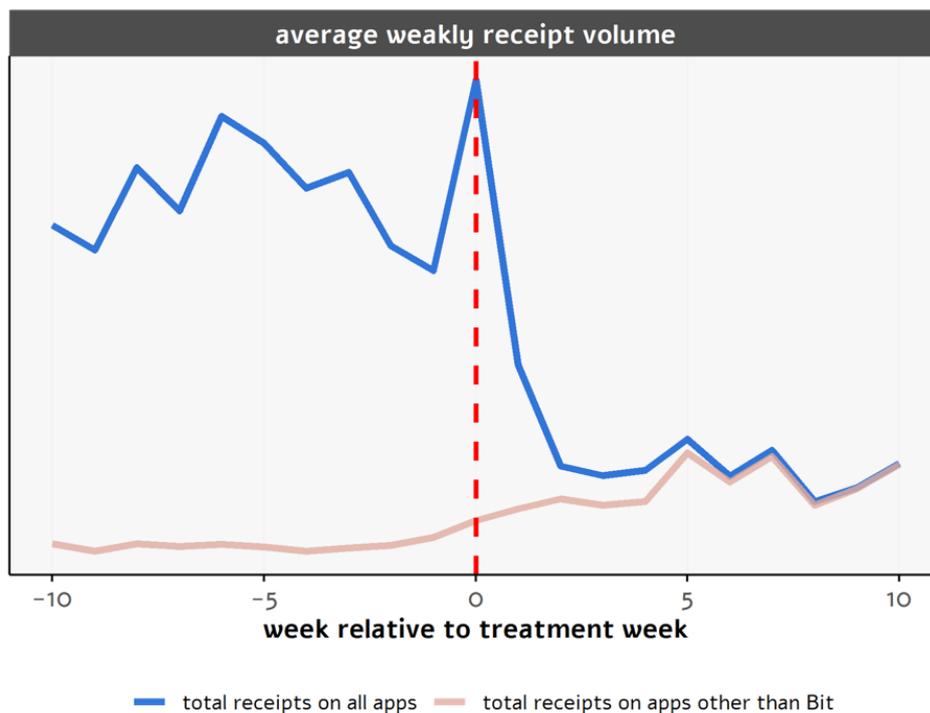
ordinary-transactions is even greater than its share of total transfers. An examination of the differences between activity patterns in ordinary versus commercial transactions, sheds some light on multi-homing motivation. Particularly, it is possible that a considerable portion of multi-homing and, in particular, the choice to use Pay and Paybox are not due to the demand side but rather, are due to the usage restrictions of the apps in general, and of Bit in particular. In principle, all of the apps have an annual receipt cap of NIS 50,000. This cap is related to Israeli bank conduct regulation in the context of the anti-money-laundering and funding of terrorism regime. However, the apps differ from one another in terms of the policy that they adopt when recipients reach the cap. On Paybox, the user can choose to undergo a “know your customer” process at the end of which his annual receipt cap can increase up to NIS 150,000. Similarly, Pay enables customers of Bank Leumi only to increase the receipt cap up to NIS 200,000. Bit however, enables businesses to increase the receipt cap only by way of entering into a contract with a credit card clearance company to which the business pays a clearance commission as is acceptable on the credit card market.

In this context, the effect of very small businesses reaching the annual receipt cap on their operations was estimated. Estimation methodology involved comparing groups of very small businesses which, at various times, reached the receipt cap on Bit during 2020, against businesses that did not reach the receipt cap.²²

Figure 4 provides an illustration of the effect of reaching the annual receipt cap on the operations of very small businesses, on Bit and the other apps. The chart sets out the weekly sum of receipts of a group of very small businesses all of which reached the receipt cap on Bit on a random week during the course of 2020. The chart focuses on the time frame of ten weeks prior to reaching the receipt cap and ten weeks thereafter.

²² The econometric estimation methodology is based on: Callaway, B. & Sant’Anna, P.H. Difference-in-Differences with Multiple Time Periods. *Journal of Econometrics*. (2020). The methodology is from the difference-in-differences family and is designed for application in cases in which there are differences between the units included in a treatment on the date of receipt of the treatment (in the current case, “treatment” means reaching the receipt cap on Bit). When applying the methodology, an econometric model was chosen that does not contain explanatory variables and in which the anticipation parameter equals zero. The database used contains beneficiaries whose total sum of non-group receipts received on all of the apps during 2020 ranged between NIS 30,000 and NIS 90,000, and the maximum sum that they received on Paybox was no greater than NIS 40,000. The effect of reaching the receipt cap was estimated in two cases: Where there is no further limit with respect to the beneficiary’s multi-homing, and where all beneficiaries make use of more than one app prior to the examination period. The statistical indications show that the parallel trends assumption prior to the treatment period stands in all of the examinations, so that the pseudo group-time treatment effects are not clearly different from zero for periods preceding the treatment.

Figure 4: **Effect of the Receipt Cap on Weekly Receipts – Example**
Effects of the Receipt Cap on Weekly Receipts – Example



Source: Bank Hapoalim, Bank Leumi and Discount Bank; Research Division's calculations

The estimation findings show that where a business reached the receipt cap on Bit, its total average weekly receipts on the other apps increased. The estimated increase in the group of beneficiaries that made use of several apps prior to treatment is even higher.

However, this diversion is not sufficient to fully “compensate” for the loss of ability to receive money via Bit. This leads to the total weekly receipts on all apps after reaching the cap being significantly lower than it was prior to reaching the cap. A slightly lower decrease in total weekly receipts was estimated for beneficiaries who made use of more than one app prior to reaching Bit's annual cap.

This examination provides evidence that Bit has a leading position under a dynamic test as well. The other apps do not provide a proper alternative for beneficiaries to receive payments. The reasonable explanation for this finding is that the beneficiaries are unable to divert payers to making use of other apps.

7. Insights, Recommendations and Future Directions

As noted, this study is focused on the field of P2P transfer apps and was conducted to facilitate learning the market characteristics and consumer conduct. This endeavor was made to enable formulation of the steps necessary to be taken in order to ensure the development of a

competitive market for the benefit of the consumers. The study raises a number of main insights:

1. **The P2P transfer app filed is characterized by a significant network effect.** That means that the value and attraction of a particular payment app for each of the users increases as the number of registered users of the app increases. As arose from the data, the average number of transfers of each user and the number of such users' transaction partners increase as the size of the app's network expands. Moreover, as noted above, this increase is not linear, but rather convex with respect to the number of transaction partners, the number of transfers and the volume of the transactions. Generally speaking, markets that are characterized by a network effect frequently tend to be centralized and lean towards a winner-takes-all market structure. In such markets, it is very difficult for a new firm to penetrate the market and pose a competitive threat for the dominant firm. This is normally the case even if the new entrant offers a higher quality product, as it has no way of competing against the incumbent's immense network advantage. Markets of this kind give rise to competition concerns, even if the firm that "wins" the market is the one that offered the best quality product at the initial stage. That is because the centralized market structure might suppress the "winner's" competitive incentives in the long term, in light of the competition barrier that the network effect created. This dynamic is common in the world of digital platforms, in which the ability to connect and operate with a large number of people is a large part of the value that the platform offers. It would appear that in the current case of the Israeli P2P payment apps market, we are nearing a single winner market, as Bit has almost taken over all of the ordinary P2P transfers (transfers that do not include group transfers or "business" transfers). This fact requires taking steps towards ensuring the development of a more competitive market, despite the fact that Bit is not in breach of the Economic Competition Law.
2. **P2P payment transfer users do not tend to use more than one payment app for the same purpose** (meaning that consumers tend to be single and not multi-homers). Although user registration exhibits a considerable degree of multi-homing, this not so much the case with actual use. In fact, it would appear that the multi-homing that exists is due mainly to the artificial restriction of the receipt cap on each app, and of the differentiation that Paybox has created with respect to group transfers. This tendency by consumers increases the concern of reaching a winner-takes-all market structure, since it reinforces the presumption that consumers will tend not to try a new app as a substitute for their "regular" app.

3. **The field has growth potential**, and it would appear that the penetration of P2P transfer apps has not yet exhausted itself and that the market is not saturated. That is in terms of both the number of registered users and the scope of use by existing users, particularly compared to international data.

As noted above, all of the P2P transfer apps currently operating in Israel are based on credit card infrastructure and accordingly, carry clearance costs for each transaction executed on the app. In other countries it is usual for P2P transfer apps to be based on direct transfer infrastructure between bank accounts, often on the basis of immediate payment infrastructure ("faster payments") which do not involve similar costs. The technological and legal infrastructures to enable a similar transfers scheme in Israel has not yet been developed or implemented. Particularly, the regulation of the field of executing payment transactions, which will enable external players to initiate bank transfers for the customers of all banks, has not yet been completed. The completion of these developments might assist in the continued growth of the field and may facilitate the entrance of parties that are unable to finance the clearance costs.

These insights suggest that despite the growth potential of the field of P2P transfer apps in Israel, the ability of a new competitor to enter the market is becoming almost impossible, even if it will be able to offer consumers higher utility and has the ability to distinguish itself. This conclusion appears to already be the case at present, and is expected to exacerbate as the existing apps grow and as the differentiation of the apps in comparison with the use of cash is reinforced.

Concerns regarding Abuse of Market Power in the Field of P2P

Firstly, the state of affairs that is described above might give rise to a competition concern regarding the increasing ability of the leading app, Bit, to abuse its emerging dominance in the field of P2P transfers in order to harm the conditions of users of payment platforms later on. Thus, for instance, Bit might harm the quality of the services that it provides to all users by giving a unilateral notice of its intention to collect extensive private information about them. Even users who do not wish to agree to collection of the information might be forced to agree since they will have no realistic ability to transition to a competing app, due to the importance in the size of the network of such an app. Another potential harm is specific harm to the owners of very small businesses (and in particular, businesses that do not receive payment via credit card), inter alia by collecting high commissions. These businesses will not be able to refuse the demand or waive the use of Bit without risk of losing many customers who are on Bit's network.

In order to deal with this concern, it would appear that steps needed to be taken that might weaken the network effect, concern mandating interoperability between the apps. This may

enable the development of a competitive market in which each consumer chooses to use his most suitable app, without his choice being dictated by the number of registered users on the apps network.

Two main disadvantages of such a solution should be noted. Firstly, there is a concern of potential harm to the incentive of innovation and development. On a market that is characterized by network advantages, each firm knows that if it “wins” the competition, it can expect to enjoy a dominant position which will enable it to make profits. The desire to attain that position is an incentive for firms to invest in innovation, in the generation of goodwill, in increased efficiency and in production. If, from the outset, companies knew that ex-post regulatory intervention would prevent them from “collecting the fruits” of the position that they attain, their incentive to invest in improving the product and penetrating the market will be reduced next time around. Secondly, a weakening of the network effect might harm the incentive of apps to diversify themselves. In a world without interoperability, the apps have an incentive to offer a unique experience, for instance, to beneficiaries – not merely to attract beneficiaries but also to attract the payers who will engage in transactions with them. This increases the chance that the payer will have a number of apps for the purpose of performing transactions with different beneficiaries. In a world with interoperability, the connection between recruitment of the beneficiary and recruitment of the payer (and vice versa) is severed. As a result of that, the app's incentive to invest in one of the parties to the transaction who might be considered to be less worthwhile in and of itself might weaken and that might also reduce the rate of multi-homing.

Despite these disadvantages, the ICA advocates that it is necessary to mitigate the network effect in this field. Both because even now the rate of multi-homing in usage is quite low, but mainly because of the understanding that a lack of intervention will fix a market structure that is not competitive.

One possible way of creating interoperability is to mandate an interfacing duty between the different P2P payment apps (a duty which might reasonably be applied as of a particular scope of operations of a payment app). In this type of market conditions every consumer will be able to transfer payment via the payment app that he chooses to use, to any consumer registered on any app (and similarly, each consumer will be able to receive funds from everyone registered on any app). This solution is similar to the interoperability that exists, for instance, in the world of telephony: everyone who has a telephone can dial any other number, irrespective of the identity of the company that provides services to the other person.

Another potential method of generating interoperability and ensuring that every app enjoys the advantages of the network is to set up a database that will connect between a person's telephone number and his bank account or means of payment. Using this database will enable a payer to

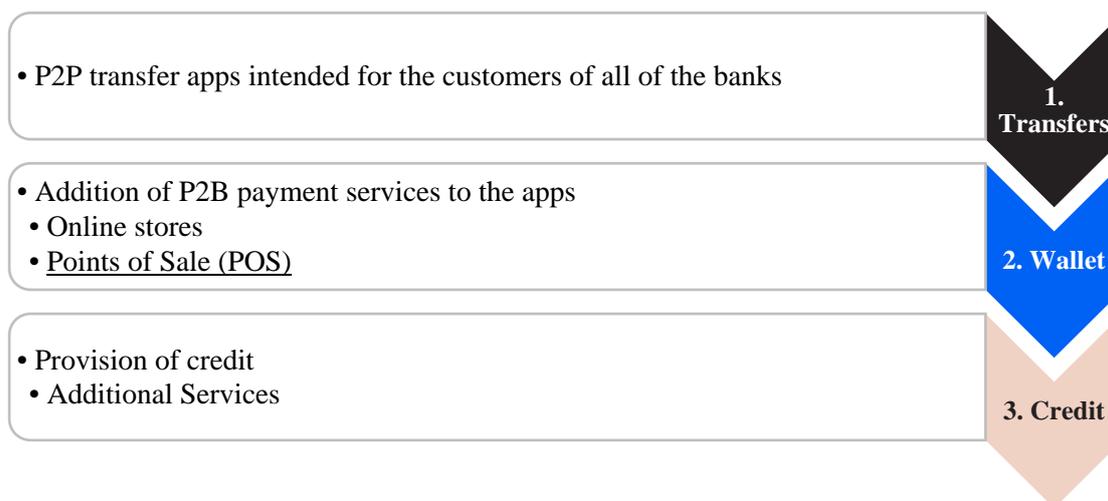
transfer funds to a beneficiary based on their telephone number alone, without the user necessarily having the same payment app (or any app for that matter). Similar databases (which are known by the names “proxy directory”, “alias look up”, etc.) are in use in various countries around the world, including Sweden, Great Britain and Australia; and sometimes that might be used for other purposes and enable innovative developments in fields outside of the financial world. The efficacy of such a solution is naturally dependent on the number of people who register for the database. Since it is possible, in Israel, to execute P2P transfers without registration, as aforesaid, there is a concern that it will be very difficult to promote people to make use of the database, and appropriate incentives to do so will likely be needed. Furthermore, there might be room to consider the imposition of a duty on apps with a significant market share to allow payment via the database.

There is not enough room to set out the precise details in this report, as well as the advantages and disadvantages of each of the solutions; these solutions require detailed examination. In this context, on June 14, 2021, the Bank of Israel published a call to the public for information about payments via mobile telephones, relating, inter alia, to information regarding an interface for executing P2P payments between different apps.²³

Concerns regarding Payments at Businesses and Use of Information Collected Incidentally to the Use of P2P Transfer Apps

As mentioned, the provision of payment services between individuals on the existing P2P transfer apps is not a profitable activity. It would appear that the main value the apps' operators driven from their operation, is as a method for recruiting customers. This is likely effective since having a frequent interface with such customers and obtaining information that is economically valuable, facilitates offering customers supplementary paid services. Particularly, the expected commercial development pathway of payment apps is set out in the following flowchart:

²³ Available at the following link: <https://www.boi.org.il/he/PaymentSystem/Pages/MobilePaymntInfo.aspx>



In the first stage, the banks set up an app designated for transfers between individuals (P2P), which is intended for the customers of all of the banks.²⁴ This activity is not profitable for the banks.

A common method for deriving profit from a P2P transfer app is to add an option of paying at businesses via the app, first on online stores or at online payment interfaces at physical stores, and later at points of sale (POS) in stores. This kind of operation model in which the payment app enables payment to a wide variety of businesses shall hereinafter be known as a “**digital wallet**” or “**wallet**”.

In this context, a concern may arise that market power in the provision of P2P transfer app services will enable an entity to fortify a dominant position in the field of digital markets as well. However, it is not yet clear whether that is expected to be the only or even main “front door” entry into this field. The field of digital wallets is only just starting out in Israel and is still being designed and formulated, and at the present time, it would appear that there are relatively varied players (and potential players) in the field who come through different “front doors” (such as operations in the field of cellular telephones or retail operations).

It is emphasized that as a rule, wallet services are not characterized by a direct network effect in the same way that P2P transfer services are. These services are characterized by an indirect network effect (a two-sided market) – the more businesses enable payment using the wallet, the more the value and attraction of wallet services for each customer increases. Similarly, the greater the number of customers using the wallet, the more the value of it for each business increases. However, for the vast majority of wallet services that are based on the credit cards that are currently on offer on the market, this indirect network effect is in fact neutralized

²⁴ The universal appeal to customers irrespective of their affiliation with the bank that set up the app is an attribute that is of competitive importance on a market in which direct competition for the recruitment of existing customers of competing banks was weak for many years.

because for technological reasons, all businesses can honor all wallets.²⁵ If additional technological-commercial infrastructure is developed in the market, it will be exposed to the challenges that characterize this kind of network effect, particularly against the backdrop of the readiness of the credit card infrastructure.

Indeed, if a particular entity accumulates market power in the field of digital wallets thanks to a large and exclusive customer base, it might use this power in order to harm various parties, including issuers and businesses with terminals. But as noted above, it would appear that it is too early to know whether there is a concern of the accumulation of such market power as a result of the operations of such an entity in the field of P2P transfers. Therefore, it appears as though the appropriate approach would be to continue monitoring the development of the field of digital wallets, while seeking for solutions for these concerns, if intervention becomes necessary, at more advanced stages.

Another method of deriving profits from the operation of an app is by using it to offer credit, optimized through use of the information collected regarding the customer incidentally to provision of the P2P transfer services. Some also raise the option of offering and providing users with other banking services. These services appear to constitute the core of the financial model for wallet operations, since they are expected to drive wallet profitability. This market feature is important from a competitive point of view, since the financial entities (and later on, possibly entities from other fields as well) compete for access to persons who are not part of their “regular” customer base. From the consumer’s point of view, this may provide value by offering tailor made products more suitable to the customer’s requirements, using the consumer information collected during his use of the app for the purpose of P2P transfers.

On the other hand, it is not possible to overlook the fact that the dominant app operator is the largest bank in the country, which only recently had the credit card company that it owned separated from it, with the aim of increasing competition in banking services. Against this backdrop, there are some who fear that the collection of this information might provide an advantage to the P2P transfer app operators (leading banks) in their access to continuous, high quality information about customers, in a way that might strengthen the largest bank and give rise to a gap that cannot be bridged, from a competitive point of view, between it and its competitors in the provision of credit, or at least, its small competitors in the provision of credit.

²⁵ The intention here is to wallets that are based on non-contact payments using NFC (Near Field Communication) under the EMV standard. According to the implementation outline prescribed by the Bank of Israel, there has been considerable progress in the implementation of this standard at points of sale, so that now, most POSs allow non-contact payment using this technology. The wallet operator is not required to enter into technological or commercial contracts with the businesses that make use of the wallet service. That is the reason for neutralization of the indirect network effect in provision of the service.

Therefore, there are those who wish to impose restrictions on use of the information that is accrued on the P2P payment app for other purposes.

Even though the ICA acknowledges the concern regarding preserving the advantage that leading banks have in accessing information and customers, the ICA does not justify preventing use of the information that is collected incidentally to the use of P2P transfer services. Instead, steps must be taken as described above, in order to open the P2P field to a wider variety of competitors who will be able to collect the information and use it for the purpose of increasing competition in adjacent fields as well. And all of that alongside the creation of efficient mechanisms for sharing information, subject to the customer's consent.²⁶

²⁶ See the Memorandum of the Provision of Financial Information Services Law, 5780-2020; Joint Paper of the Competition Authority, the Protection of Privacy Authority and the Consumer Protection and Fair Trade Authority regarding the Right to Data Portability, which was published on January 3, 2021.