

## Article

# Total Utility Payment Schemes and New Landscape- Strategic Implications for Mainland China and Taiwan

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**Abstract:** Consumer payment methods and factors affecting consumer choice of payment methods are analyzed in this study. Convenience, security, and incentives are major factors for consumers to select payment methods or schemes. The dichotomy of consumer payment methods or schemes is used for defining primary consumer payment methods or schemes and confined consumer payment schemes. For expanding uses and profits of the operator(s), consumer payment methods tend to and need to evolve into total utility payment schemes (TUPS), which leads to a drastically new consumer payment landscape. It also affects consumer businesses as well as consumer banking and financial services. Strategies of fast TUPS and swift expansion into Mainland-Chinese frequently would increase substantially the global consumer payment share of Mainland Chinese payment. Close cooperation between Mainland China's UnionPay and Taiwan banks' credit/debit cards with appropriate incentives to consumers shall be a strategy in terms of market share and profitability.

**Keywords:** Total Utility Payment Schemes (TUPS), Consumer Payment, Mobile Payment; Mobile Wallet, E-Payment, E-Commerce

## 1. Introduction

Consumer payment methods are analyzed to understand what factors affect consumers' choice of payment methods. The dichotomy of consumer payment methods or schemes is used to investigate primary consumer payment methods or schemes and confined consumer payment schemes. Total utility payment schemes (TUPS) are also explored in view of consumer needs. The drastically changing landscape of consumer payment and the enormous impact is discussed to understand how consumer businesses, consumer banking, and financial services can cooperate and propose strategic implications for Mainland China and Taiwan.

In this article, chapter 2 explains buyers' payment methods and factors affecting shoppers' choice of payment schemes. Chapter 3 explores total utility payment schemes (TUPS) and the future landscape of consumer payment. Chapter 4 formulates strategic implications for Mainland China and Taiwan operators. Chapter 5 makes concise concluding remarks.

### Definition of Terms

Definitions of terms used in this article are given as follows:

- **Operator** – The entity which provides or operates or manages or owns a payment scheme or method.
- **Payment Method or Scheme** – The method or scheme consumer makes payment to the vendor or makes transference of fund. Method or scheme means the same but be used interchangeably whenever proper in the context. More specifically, a method is referring to the general method or relatively simple method, while a scheme is referring to a complicated method.
- **Vendor** – The provider of physical or nonphysical product that consumer purchases and pays for.
- **Physical Commerce (P-commerce or P-com)** – Consumer purchases at physical locations..

## 2. Consumer Payment Methods

Consumer payment methods evolve with the advancement of technologies, economies, monetary instruments, and legal systems, as well as consumer needs, intermediaries' innovations/facilities, and vendor's marketing considerations. However, consumer payment methods have been rarely an academic study subject, except those regarding credit cards. It attracted scholars' attention in the late 1990s (Kabir et al., 2015), as electronic payment (E-payment or ePay) became phenomenal along with the notably increasing popularity of consumer electronic commerce (e-commerce or e-com). In this article, the consumer purchases at

physical locations is called “Physical Commerce” (P-commerce or P-com). With the remarkable emergence of electronic or mobile wallets (eWallets or mWallets), the landscape of consumer payment methods has changed dramatically in the past eighteen years. eWallet and mWallet are technically the same. In 2021, consumer payment methods consisted mainly of mWallet, credit/charge card, debit card, cash, vendor/bank credit, prepaid card, PostPay, bank transfer, cash on delivery, direct debit, PrePay Voucher, and SepPay<sup>1</sup> (Table 1) in sequence by the share globally (Worldpay, 2022).

**Table 1.** Shares of global consumer payment methods.

<b>E-Com Payment</b>	<b>2021</b>	<b>2025 Forecasts</b>	<b>P-Com Payment</b>	<b>2021</b>	<b>2025 Forecasts</b>
mWallet	49%	53%	mWallet	29%	39%
Credit/Charge Card	21%	19%	Credit/Charge Card	24%	22%
Debit Card	13%	13%	Debit Card	23%	22%
Bank Transfer	7%	6%	Cash	18%	10%
PostPay	3%	5%	Vendor/Bank Credit	4%	3%
Cash on Delivery	3%	1%	Prepaid Card	2%	2%
Direct Debit	1%	1%	PostPay	1%	2%
PrePay Voucher	1%	1%	-	-	-
Others	1%	1%	-	-	-
Prepaid Card	1%	0%	-	-	-
<b>Total Amount</b>	<b>US\$5.3 trillion</b>	<b>US\$8.3 trillion</b>	<b>Total Amount</b>	<b>US\$46.4 trillion</b>	<b>US\$58.9 trillion</b>

Source: Worldpay 2022

For analysis, the dichotomy of consumer payment methods or schemes is used in two categories: primary and confined. Primary consumer payment methods or schemes make payments to vendors or put initial and/or subsequent funds into a confined consumer payment scheme<sup>2</sup>, which only makes payments to vendors. Several primary payment methods or schemes also put funds into other primary payment methods or receive funds from others.<sup>3</sup> With two categories of payment methods or schemes, the aggregate payment amount made by all payment methods or schemes is larger than the aggregate final consumption amount.

### 2.1 Types of Consumer Payment Methods

The major consumer payment methods for the past eight years (Worldpay 2015; 2018; 2022) are set under primary and confined categories as follows.

#### 1) Primary consumer payment methods or schemes

- ① Mobile Wallet or mWallet – An electronic scheme keeps funds and makes payments to vendors on a mobile device or personal computer (PC). It usually makes fund transference in and out to self or others. Notable examples are Alipay, WeChat Pay, PayPal, Apple Pay, Samsung Pay, and so on.
- ② Credit Card – A scheme with an authorized amount limit consumer makes payment to the vendor or pays taxes and fees, while the actual payment is usually made monthly or by installations to the credit card issuer. It charges interests allowing a consumer to pay part of the amount in the next month and lends loans and allows drawing cash from an automatic teller machine (ATM). Credit-card brands and issuing banks usually offer debit cards, too. Notable credit-card brands are VISA, MasterCard, JCB, and others. Credit cards and debit cards are overwhelmingly issued by banks.
- ③ Charge Card – A scheme with an authorized amount limit consumer makes payment to the vendor while the actual payment is usually made monthly in full to the charge-card issuer. It does not give credit to a consumer for making part of the payment in later months like a credit card. The most notable charge-card brand is American Express. However, American Express also offers credit cards aggressively nowadays.
- ④ Debit Card – A scheme consumer makes payment to the vendor or pays taxes and fees while the amount is deducted from the linked bank account immediately. It mostly also serves as a bank card to use ATM. Credit cards and debit cards are usually two schemes offers by credit-card brands and banks. The most notable debit card brand is Union. Union also offers credit cards.
- ⑤ Cash – Although almost a handicapped payment method in e-commerce, cash is a fundamental and widely used but decreasing P-Com payment method on the globe, claiming estimated shares of 31 and 18% in 2018 and 2021, respectively (Worldpay 2018, 2022). Withdrawable from most of the other primary payment schemes, cash gives rise to an important feature of those primary payment schemes.

<sup>1</sup> SepPay stands for Separate Payment scheme, coined in this paper for the eCommerce payment made separately outside the ordering configuration.

<sup>2</sup> For example, a credit card could buy (or enable) a pre-paid card and put subsequent funds into it.

<sup>3</sup> In the case of cash, receiving funds from other primary payment schemes means a consumer could withdraw cash from those schemes. For instance, credit cards could let their holders draw cashes from automatic teller machines (ATMs).

- ⑥ Bank Transfer – Bank transfer as a payment method online corresponds to cash offline; hence, it is the fourth most used payment method online in 2018, after mWallet, credit card, and debit card. It, however, could still be carried out offline through ATMs and bank counters.
- 2) Confined consumer payment methods or schemes
- ① Prepaid Card – A scheme consumer makes payment to the vendor from the fund previously put in. A notable example is EasyCard in Taiwan. Several popular pre-paid cards could probably be used to put funds into a prepaid scheme. However, it is rare currently.
  - ② PostPay – A scheme allows consumers to make the major part of the payment on a later date(s) for online purchase. Notable examples are Klarna in Europe and the United States of America (USA) and Afterpay in Australia, New Zealand, the USA, and the United Kingdom (UK). Klarna allows payment in fourteen or thirty days after delivery of goods, or three to four installments free of interest, or longer installments with interests. Its app also gives price drop alerts. Afterpay allows payment in four installments free of interest, while the first installment payment is to be made at purchase. Both Klarna and Afterpay allow payment right away at purchase.
  - ③ Cash on Delivery (CoD) – While CoD applies to all purchases, on- or offline, through an order-and-delivery process. It is essential for fast food delivery businesses. It is also essential for e-commerce (e-com) with respect to security concerns of online payment by consumers. In this respect, cash on delivery is an extension payment method of cash. In other words, it is a cash payment method applied to e-com. Cash on delivery has evolved into collect on delivery. mWallet has naturally applied to payment on delivery; other methods, like credit cards, shall soon extend into the area.
  - ④ PrePay Voucher – A scheme, set up or approved by a vendor, consumers make payment to the specific vendor with the fund previously put in. Prepay scheme usually has built-in incentives for promotional purposes. Examples of prepay schemes are gift cards, gift vouchers, prepay vouchers, and so on. A prepay scheme with a broad customer base naturally or easily evolves into a pre-paid scheme. The two notable cases are EasyCard in Taiwan and Octopus Card in Hong Kong, both served originally solely as the prepay schemes for the respective Metros but soon transformed into popular pre-paid cards applicable to extensive vendors.
  - ⑤ SepPay – SepPay (standing for Separate Payment scheme, coined in this paper) is for the e-commerce payment made separately outside the ordering configuration. Under SepPay, consumers make an e-commerce order and receive a slip indicating the payment code and amount, with which the consumer makes payment (to complete the order) at any physical point of contracted chains or through internet banking. The contracted chains include convenience stores (e.g., konbini in Japan), other chain stores, postal offices, banks, or combination of them (e.g., Boletto Bancario in Brazil).

### 3. Consumer Needs, Total Utility Payment Schemes (TUPS), Future Landscape

Consumers' needs of convenience, security, and incentives are major factors for consumers to select payment methods or schemes.

#### 3.1. Factors Affecting Consumer Choice of Payment Schemes

Looking into the three top major factors, there are detailed factors as analyzed below. The more favorable factors one payment scheme could render, the higher popularity it could achieve.

##### 1) Convenience

- ① Speedy or non-tediousness – Tedious procedures like entering substantial/long numbers and data (which takes longer time) versus simple touches, scanning, and entering just a moderate combination code. Or touches and scanning versus just near sensing (e.g., near field communication or NFC). Speed is closely related to non-tediousness in payment procedures. With a high and increasing penetration rate, smartphone-embedded payment schemes are usually handy, speedy, and convenient as long as no tedious procedures involve.
- ② Accommodation – Accommodating both e-com and physical stores or just one situation; and whether also accommodating pure funds transference to non-vendor accounts.
- ③ Applicability – Applicable both on- and offline or just one circumstance.

##### 2) Security

- ① Fraud-prevention – Whether preventing fraud from theft of users' data, stolen/lost payment gadgets, e.g. smartphones or credit cards?
- ② Flaw-protection – Whether protecting the consumer from non-delivery, defective goods, and so on?

### 3) Incentives

- ① Discounts – Offering discounts, rebates, and/or other favorable benefits. On the other hand, if a payment scheme levies charges, it creates a negative discount (or cost) to the consumer.
- ② Credits – Rendering installment payments, credits, loans, and/or other financial facilities.
- ③ Benefits-watch – Providing price-drop alerts and/or other intelligent benefits-watch services.

#### 3.2. Toward Total Utility Payment Schemes (TUPS)

The analysis shows that detailed factors affect consumer choice of payment schemes, and favorable factors gain higher popularity. Thus, it is logical to find ideal payment schemes for consumers with favorable factors for total utility payment schemes (TUPS). TUPS needs to be speedy, accommodate both e-com and physical stores, be capable of paying vendors and making funds transference to non-vendor accounts, be applicable both on- and offline, prevent fraud and flaw, offer notable financial benefits, credits, facilities, and provide intelligent benefits-watches. In a more substantialized way, TUPS must offer the capabilities and merits of the current credit cards, mWallets, and debit cards combined, plus intelligent benefits-watches. Examining the world's current popular payment schemes (Worldpay, 2022), Visa, MasterCard, UnionPay, Alipay, and WeChat Pay are the five major payment schemes transforming themselves into TUPS. The future trend on consumer adoption of payment schemes would have more mWallets.

## 4. Strategic Implications for Mainland China and Taiwan

### 4.1. Interface between marketing and entrepreneurship

Operators including Visa, MasterCard, UnionPay, Alipay, and WeChat Pay are actively transforming into global TUPS. The Mainland China operators have a great chance to enhance their leading positions in mWallets and debit cards while increasing their shares in credit cards. Although smaller in scale, Taiwan has a relatively higher credit card presence and a high ranking in international outbound tourism/travel, which compensates Mainland China's weakness. Therefore, Taiwan and Mainland China have a common interest in joint efforts for expanding Mainland China-led payment platforms (schemes). Mainland China operators can enhance their leading positions and market penetrations, while Taiwan operators can have better sharing of fees. The following strategies help achieve these goals. Of course, the implementation of these strategies depends largely on the overall formal relations across the Taiwan Straits.

#### 4.1. Swift Transformation of UnionPay, Alipay, and WeChat Pay into TUPS

Swift transformation of UnionPay, Alipay, and WeChat Pay into TUPS makes them more popular among consumers globally, as they render more easy access to installment payments, credit, loans, price discounts, or even further intelligent services. Each introduction of a new service in the process of transformation into TUPS would be innovative and have unique publicity to attract consumers' attention and increase penetration. It also elevates and enhances the images of these brands. The priority regions to make these undertakings are countries/areas where Mainland Chinese frequently travel, have more ethnic Chinese residents or Chinese immigrants, and have notable market shares of Mainland Chinese products. Emerging markets related to significant projects of the belt and road initiative can be included, too.

#### 4.2. Lift UnionPay Credit/Debit Card Usage in Taiwan Jointly by Taiwan Banks and UnionPay

Fully utilizing the local network advantages of Taiwan banks, close cooperation between Taiwan Banks and UnionPay would increase UnionPay credit/debit card penetration in Taiwan. With appropriate incentive programs, it boosts the usage and market share of UnionPay as well as profits for both UnionPay and Taiwan banks. The joint efforts by Taiwan banks and UnionPay should be carried out with the participation of the National Credit Card Center (NCCC) in Taiwan, which would be better change its name to more conform to its Mandarin name “lianhe xinyonka zhongxin 聯合信用卡中心”, United Credit Card Center (referred to UCCC hereafter). It can make a cobranding of NCCC and UnionPay in Taiwan, while the logo of UCCC could be redesigned to become a more modern, stylish, and appealing one.

#### 4.3. Strategic Alliance among Taiwan eWallet Operators, Including Banks, and Mainland Operators

The strategic alliance is to be primarily among Taiwan eWallet operators (including banks), UnionPay, Alipay, and WeChat Pay for faster market penetrations and business growth in Taiwan, Mainland China, and the world for both Taiwan and Mainland China eWallet operators. The strategic alliance shall be established with the participation of Financial Information Service Co., Ltd. (FISC) in Taiwan. Cobranding of FISC Pay and Mainland China operators is also plausible. It is strategically advisable that Taiwan's

EasyCard transforms into a full-fledged eWallet with two variants of IC card and mobile devices. It can expand into the global arena through a strategic alliance with Mainland China eWallet operators.

#### *4.4. Further Proliferation of Contracted Stores to Elevate UnionPay Credit Card Global Market Share*

Quick further proliferation of contracted stores along with swift transformation into a total utility payment scheme (TUP) would facilitate and enhance lifting UnionPay's credit card global market share. The priority regions for quick increase of contracted stores would be the same as mentioned in Section 4.1. The undertakings would also lift UnionPay's debit card/mWallet global market share; it would just be more important to lift the lagging UnionPay credit card market share.

#### *4.5. Fast Increase of Foreign Issuing Banks to Boost UnionPay Credit Card Global Penetration*

The fast increase of foreign issuing banks of UnionPay credit cards would boost the global penetration of UnionPay's credit cards. The strategy is undertaken along with swift transformation into a TUP and quick proliferation of contracted stores to achieve the best results. The priority regions for the fast increase of foreign issuing banks would be also the same as those for the quick proliferation of contracted stores and swift transformation into TUPS. These strategies can be well coordinated to bring the best effects.

#### *4.6. Speed up Global Pervasiveness of Contracted Stores for Alipay and WeChat Pay*

Speeding up the global pervasiveness of contracted stores for Alipay and WeChat Pay elevates the market shares. For lifting penetrations, Alipay and WeChat Pay can establish strategic alliances with popular smartphone brands as well as respective local mobile communication operators. These strategies can be well coordinated with the transformation into TUPS to gain effectiveness. The priority regions for these strategies will be the same as mentioned in Section 4.1, and those countries where Mainland Chinese smartphones have good market shares.

## **5. Conclusion**

Consumer payment methods evolve with the advancement of technologies, economies, monetary instruments, and legal systems, as well as consumer needs, intermediaries' innovations/facilities, and vendor's marketing considerations. However, consumer payment methods have been rarely an academic study subject except those regarding credit cards. It has attracted scholars' attention starting at least in the late 1990s, as electronic payment became phenomenal along with the notably increasing popularity of consumer e-commerce. With the remarkable emergence of mWallet, the landscape of consumer payment methods has changed dramatically in the past eighteen years. It also renders an enormous impact on how consumer businesses, consumer banking, and financial services can be better carried out. In 2021, consumer payment methods consist mainly of mWallet, credit/charge card, debit card, cash, vendor/bank credit, prepaid card, PostPay, bank transfer, cash on delivery, direct debit, PrePay Voucher, and SepPay in sequence by the share globally.

Consumer payment methods and factors affecting consumer choice of payment methods are analyzed. Convenience, security, and incentives are important factors that consumers consider to select payment methods or schemes. Thus, the dichotomy of consumer payment methods or schemes is used in primary consumer payment methods or schemes and confined consumer payment schemes. For expanding usage and profits of the operator(s), consumer payment methods need to evolve into total utility payment schemes (TUPS) which are proposed in this study. This shall lead to a new consumer payment landscape. The strategies of fast TUPS and swift expansion into regions and emerging markets where Mainland Chinese frequently travel will increase substantially the global consumer payment share of Mainland Chinese payment schemes. The close cooperation between Mainland China's UnionPay and Taiwan banks' credit/debit cards with appropriate incentives to consumers will be a strategic positive in terms of market share and profitability for both sides.

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