

Unified Payment Interface (UPI)—A Critical Review Of Benefits And Challenges Of Advanced Payment Systems

Dr. Hemanta Saikia¹, Mishel Elizabeth Jacob²

¹Assistant Professor, Dept. of Economics, Debraj Roy College; Golaghat-Assam, India.

²Research Scholar, School of Management and Business Studies, Mahatma Gandhi University, Kottayam.

Abstract

The Unified Payment Interface (UPI) is a mobile-first, real-time interbank payment system with the potential to transform and universalize digital payments in India. This paper examines the evolution of payment systems in India. In depth the technology underlying the Unified Payment Interface with a focus on through empirical and theoretical literature, its architecture and security systems review. When compared to existing payment methods, UPI is a significant advancement system in terms of cost, consumer ease of use, settlement times, security and has seen a high rate of user adoption. Its API-based modular architecture will allow for the creation of novel solutions for consumers and businesses. UPI is still in its early stages and merchant-centric applications are being developed. UPI solutions will significantly increase user adoption. UPI can assist in bringing a large portion of the population within the purview of the digital economy; this is a fantastic tool for increasing financial inclusion. It was observed that respondents face numerous challenges when conducting cashless transactions, including a lack of security, poor network connectivity, lack of digital awareness, illiteracy issues and difficulties making small payments, and so on. Furthermore, there is a lack of knowledge about the most recent digital payment methods.

Keywords: Mobile Payments, Real Time Payments, Unified Payment Interface, Digital Payments

INTRODUCTION: Digital payments concept is not new for Indians; various digital platforms such as NEFT, RTGS debit card, credit card, digital wallets are available to customers according to their needs. In November, 2016; the Indian government were demonetized Rs.1000 and Rs. 500 currency notes. The government also imposes restrictions on exchange of domestic currency and deposits in the banks. That time, there was shortage of money; people were in need of faster, easier

and cash equivalent measure of transactions. This paucity of money bridges the gap by opening new digital payments platforms in the country. Unified payment interface (UPI) is a platform where multiple banks account into one mobile application, with various banking features, money transfer. This is also known as P2P, send and receive money as per the needs (Aniketgodambe, 2020). The UPI helps the customers to transfer the funds from one account to another account using virtual payment address (VPA); that is more easy way, more secure and less costly system (Mishra, 2017). UPI is an innovative advanced technology, embraced by large groups; that is assuredly revolutionary in the digital payment industry (Gupta et al, 2018). The cases of few UPI Apps are SBI Pay, ICICI Pocket, Axis Pay UPI App, Union Bank UPI App, PNB UPI, Phone Pe, Tran Zapp, Paytm, and BHIM. This paper traces the concept of UPI, its benefits and challenges and comparison with other modes of digital transactions.

Review of Literature

Customers are more satisfied from digital payment services nowadays because it takes less time to transact, provide cash benefits (Sharma, 2017; Yadav, 2018). UPI is an advanced platform which is less costly, easy to operate, take less settlement period, more secured, can be used for both financial and non- financial transactions (Gochhwal, 2017). (Philip, 2019) explained that UPI affected Customers positively. UPI assisted them to easily transfer of money; access to open banking, digital payment system can be encouraged by progress of mobile phones (Mohapatra, 2017); 24*7 hours available with efficient banking system (Kakade et al, 2017) and including Email alerts and MPIN verification which can make UPI more secured (Lakshmi et al, 2019). UPI provides adaptable benefits which makes transactions economical and easy. The combinations of Aadhar system and statistics referring to enhanced financial inclusion, adoption of mobile phone indicates hope for UPI although facing competition from M-wallets and banks failures to check errors particularly with reference to frontend might affect UPI negatively (Thomas et al, 2017). UPI can be more benefited when it works at operational level; for sending and receiving the money, without any bank details, it needs only VPA or mobile number with more security. It will create a transparency in the economy by eliminating the use of cash for payments, which will help in reduction of black money (Boke et al, 2018).

Benefits Of UPI

Benefits to Banks	Benefits to Merchants	Benefits to Customers
<ul style="list-style-type: none"> ▪ Two factor verification in a single click <ul style="list-style-type: none"> ▪ Universal Application for transactions ▪ Provides Leveraged infrastructure <ul style="list-style-type: none"> ▪ Safer, Secured and Innovative <ul style="list-style-type: none"> ▪ Enables smooth business transactions 	<ul style="list-style-type: none"> ▪ Smooth collection of funds ▪ No risk of storing personal identities ▪ Acceptable for e-commerce and m-commerce transactions ▪ Easy settlement of money(no COD problems) 	<ul style="list-style-type: none"> ▪ Available 24*7. ▪ Multiple bank accounts in single application <ul style="list-style-type: none"> ▪ VPA is more secured ▪ Single click verification ▪ File complaint from mobile application

Challenges of UPI-

Both parties must have their UPI-ID or registered mobile number in their bank account to make transactions. There is no grievance redressal available in case the transaction is failed, unwillingness to install UPI applications among users, sometimes software does not support the system. Paytm, Phone pe most useable apps in urban areas, there is less popularity in rural areas. There is lot of security issues- trapping, deceived while dealing online; if the mobile is lost there is no security of data saved in phone like bank details (Neema et al, 2016). There can be technical hindrances related to app as it may not work properly which can be failure to transaction. The country like India have serious problem is Digital illiteracy among the people in rural and remote areas where people make less online transactions. It will take time for India to become full digital economy. Sometimes complex system of online transactions modes needs more information that creates problem for its users; they want very simple modes for payment.

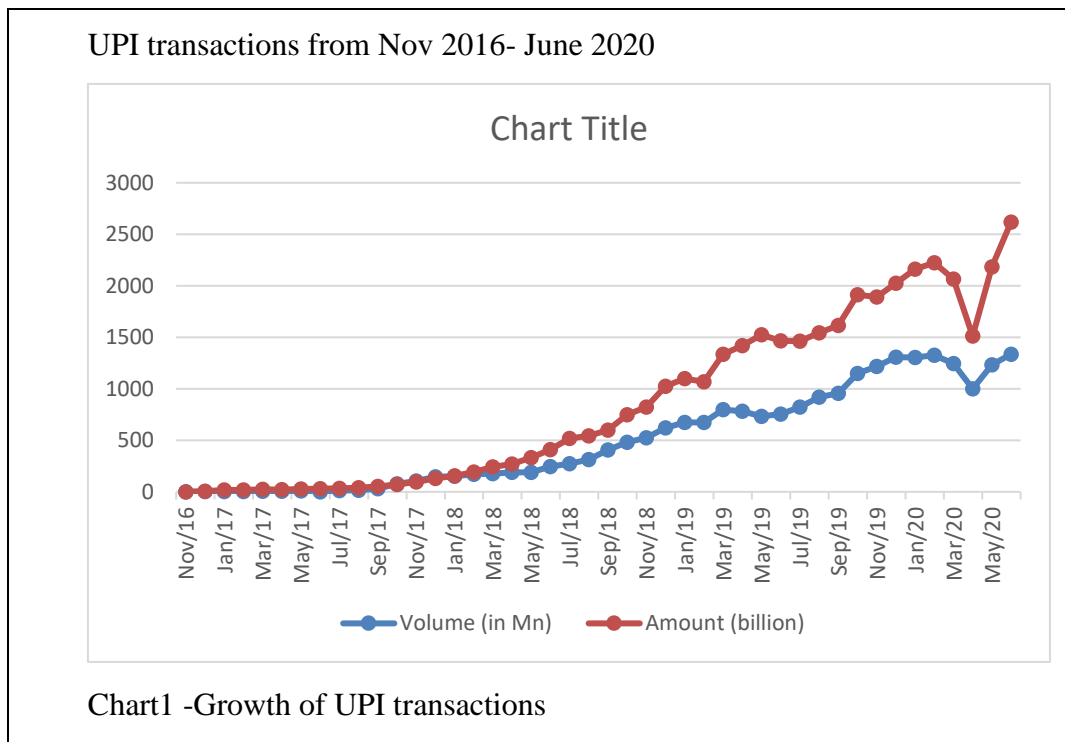
Comparison table of Transaction value of Different digital payment System up to June 2020

Digital Payment Systems - Representative Data						
Value in Rs. Billion						
Data for the period	RTGS	NEFT	Mobile banking	UPI	Debit and Credit Cards at POS	Total
	value	value	value	value	value	value
Nov-16	78479.2	8807.8	1244.9	1.0046	352.4	88885.3
Dec-16	84096.5	11537.6	1365.9	7.08	522.2	97529.28

Jan -17	77486.1	11355.1	1206.7	16.96	481.2	90546.06
Feb-17	74218.8	10877.9	1080.0	19.38	391.5	86587.58
Mar-17	123375.8	16294.5	1499.9	24.25	416.2	141610.7
Apr-17	88512.2	12156.2	1443.8	22.71	431.4	102566.3
May-17	90170.5	12410.8	1940.7	27.98	450.8	105000.8
Jun-17	92812.6	12694.2	1584.7	30.99	468.2	107590.7
Jul-17	87149.3	12011.6	1019.2	34.11	439.3	100653.5
Aug-17	89163.4	12500.4	1033.0	41.57	457.1	103195.5
Sept-17	102348.1	14182.1	1121.6	53.26	478.2	118183.3
Oct-17	92056.1	13851.3	1168.7	70.56	530.5	107677.2
Nov-17	98410.5	13884.0	848.4	96.7	483.3	113722.9
Dec-17	100907.8	15779.2	921.5	131.74	528.7	118268.9
Jan-18	107488.4	15374.1	928.7	155.71	521.9	124468.8
Feb-18	91765.6	14843.9	945.0	191.26	465.9	108211.7
Mar-18	126340.30	22540.77	1415.03	241.73	86164.8	236702.6
Apr-18	94045.7	16326.64	1348.39	270.22	90294.1	202285.1
May-18	105720.93	17152.0	1789.44	332.88	94092.7	219088
Jun-18	114199.03	19017.08	1966.05	408.34	94203.4	229793.9
Jul-18	112012.91	1966.05	2059.82	518.43	482461.2	599018.4
Aug-18	109214.10	18712.4	109214.10	542.12	96957.8	334640.5
Sept-18	104037.34	18015.5	2176.33	598.35	91907.6	216735.1
Oct-18	111856.75	19227.03	2480.17	749.78	110369.7	244683.4
Nov-18	103085.10	18246.68	2492.51	822.32	105532.5	230179.1
Dec-18	116423.73	19570.4	116423.73	1025.95	107261.3	360705.1
Jan -19	124797.03	19662.6	2959.74	1099.32	105519.9	254038.6
Feb-19	112759.85	19214.3	3047.25	1067.37	94005.1	230093.9
Mar-19	148729.35	25470.0	4401.53	1334.61	110674.9	290610.4
Apr-19	112453.31	20546.7	4020.18	1420.34	113064.9	251505.4
May-19	123973.82	21277.7	4850.08	1524.5	119329.3	270955.4
Jun-19	120017.43	17496.5	4975.43	1465.6	114381.7	258336.7
Jul-19	125770.57	17842.6	5341.24	1463.87	11816.14	162234.4
Aug-19	115236.29	17961.528	3280.43	1545.05	11767.8	149791.1
Sept-19	110834.7	18117.809	4701.68	1614.57	11517.1	146785.9
Oct-19	104129.82	18607.863	5327.59	1913.6	14128.2	144107.1
Nov-19	86798.06	17346.512	4712.95	1892.3	11771.9	122521.7
Dec-19	103169.37	19422.30	4931.44	2025.21	12818.4	142366.7
Jan -20	98808.21	19294.64	5213.68	2162.43	12915.6	138394.6
Feb-20	89909.4	5201.99	5258.46	2225.17	12036.3	114631.3

Mar-20	120472.21	22836.646	5201.99	2064.	9834.2	160409
Apr-20	64436.531	13064.064	3640.31	1511.41	4385.6	87037.92
May-20	70418.693	14817.495	-	2183.91	-	87420.1
Jun-20	86519.777	19065.861	-	2618.35	-	108204

Table-1 Source <https://www.rbi.org.in/>



UPI is known as biggest revolution in the cashless payment industry. During the financial year (2019-20)–2344701.32bn.totaldigital transactions, 27630.31bn worth done through UPI. In (June,2020) 2618.35 bn. Transactions occurred through UPI.

Conclusion

The study concludes that UPI is a real-time digital payment system with a number of advantages, including being safer, more secure, and less expensive than card networks. Customers should be encouraged to use UPI, which provides a one-step solution for monetary transactions.

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