

# M-Banking and the rural India: yet a galactic distance to travel? - An analytical study with reference to Srikakulam District of Andhra Pradesh, India.

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## ABSTRACT

Mobile banking can be considered virtually to be the bank in your pocket. While the urban folk is availing the most of its advantages, it is yet a distinct proposition for the rural sector to witness its presence in a full swing and reap the benefits thereof. In a way, the rural India is not yet ready to become aware of the technicalities associated there to, for that matter the electronic transaction itself is not comprehensible in their mind-set. This hiatus is not shrinking despite the perennial efforts of the banking sector to induce the concept into the public minds, especially with regard to rural India. The rationale behind this research paper is to make an in-depth analytical study of the contributing factors for this occurrence and explore the ways & means to bridge the gap progressively. A survey has been conducted by taking a sample size of 720 respondents out of 1200 rural habitants surveyed of different demographics of Srikakulam district, Andhra Pradesh, India via self-explanatory and structured questionnaire to elicit their opinions. The data obtained has been tabulated and analysed to identify the factors influencing non-adoption of m-banking services by using statistical tools via ANOVA test for identifying the significant levels to match with the formulated hypothesis. While the concept of mobile banking is highly discouraging in the rural India, the study reveals that the rural Srikakulam district is at its nadir. The incumbent factors for such a state have been compared to that of the national situation and arrived at framing appropriate & viable solutions in a pragmatic manner. This research paper does not only enable the banks to a large extent to modify their existing system to suit the behaviour of rural customers to motivate them towards adopting m-banking services and thus enhance their customer base, but to government also in initiating innovative and easy measures for up-lifting the rural in all fronts including the concept of mobile banking.

**Keywords:** Mobile banking, E-Banking, Factors for non-adoption of m-banking, Indian banking system.

## 1. Introduction:

Mobile Banking is a booming global phenomenon in the banking arena with its roots spreading at a rapid pace widely across India with myriad accounting, transactional, Investment and support oriented services encompassing subheads such as inquires, funds transfers & remittances, payments including credit card, roaming remittances, different kinds of loans including personal, agricultural & farmer households, time & fixed deposits, third-party deposits, SMS services, account management etc. All these services are conducted via a remotely operated smartphone/tablet by using a specially designed app provided by the corresponding bank/financial institution.

While the Indian mobile users are trying to get themselves aware of the mobile banking applications, there is a mammoth support from the government also which adds to fast adoption of mobile banking. With a view to make “The total cashless concept” owing to many advantages including eradication of corruption from the grass root level the government is particular about the people using the smartphones for banking purposes. Incidentally the government’s above initiative comes handy as the current quantum of about 1.17 billion mobile phone users in the country can do better using mobile banking apps. Supporting the government initiative, the National Payments Corporation of India (NPCI) has launched an amicable mobile app BHIM (Bharat Interface for Money) in line with the ideals of Unified Payment Interface (UPI) on 30<sup>th</sup> December 2016, which has already been downloaded by 20 million users. This has resulted in 720 million transactions during 2016-17 which is an encouraging proposition. This shows a drastic leap when compared to 94.7 million in 2013-14. In parallel, the magnitude of mobile banking transactions witnessed a surge of Rs. 1057.20 billion over 2,240 millions in 2013-14. Further, it is heartening to observe that there has been a multi-proportional hike in digital mobile banking transactions, within a three years span, to the tune of over Rs. 30 million from Rs. 9.60 million in 2014. The phenomenal growth owes large to the demonetisation drive by the prime minister besides its conspicuous advantages of total convenience, freeing from physical exertion, speedy transactions and avoiding dependency. But unfortunately, the growth is rampant in the urban India only and the presence is not noticeable in the semi-urban and rural areas and is still more farsighted in the rural places of Srikakulam district, Andhra Pradesh.

## 2. Need for the study:

This particular area mentioned above leaves ample space for anyone to have a comprehensive understanding of the state of affairs in the rural places of Srikakulam district in terms of a) What is ailing these areas that thwart the progress, b) High resistance to change, c) Dislike to move out of their comfort zone to understand and grab the opportunities of mobile banking, d) Literacy factors & other allied factors and what has to be done to inculcate the awareness and interest in the minds of the rural people to adopt the mobile banking as well as to design the strategic methods for progressive implementation. The wide scope

that the situation offers has prompted the researcher to make an in-depth study of the pros and cons and to provide apt solutions with ways and means.

### 3. Scope of the study:

Although the above narrative is a national phenomenon, the current study has been confined to the rural areas of Srikakulam district only. The study covers 200 out of 1,800 villages on random basis, where some considerable banking transactions take place daily.

### 4. Literature review:

M-banking is defined as the product or service offered by the financial industry using a mobile device, namely a mobile phone, smartphone, or tablet (Shaikh & Karjaluo, 2015). Kim, Shin, and Lee (2009) also trace another definition for m-banking as the subset of applications of mobile e-commerce offered by the financial industry. In fact, mobile commerce is also known as a subset of e-commerce that uses radio-based wireless devices to conduct business transactions over the web (Keng & Zixing, 2003).

The researcher has widely studied the work done on the spread & impact of mobile banking in the rural and backward areas of eastern countries like China, Malaysia and Thailand along with a few African nations so as to correlate it to the similar scenario in India. The researcher has also probed in to the works of some of the Indian researchers and has found that they are also of the same view point in regard to the prevalence of mobile banking in the rural India.

**Carlos Tam, Tiago Oliveira, (2017)** proposed a model combining the success model of DeLone & McLean IS and that of the Task Technology Fit (TTF) to evaluate the impact of m-banking on individual performance. The results reveal that use and user satisfaction are important precedents of individual performance, and the importance of the moderating effects of TTF over usage to individual performance. The system quality, information quality, and service quality positively affect user satisfaction. Understanding the significance of m-banking context on individual performance is useful to provide new insight to m-banking managers to apply strategies to retain users or even attract potential adopters.

**Afshan, Sahar, Sharif, Arshian (2015):** The purpose of their study is to analyze the untapped (behavioral, environmental and technological) dimensions of mobile banking acceptance by following a more comprehensive approach to address mobile banking intention for adoption. The empirical findings established the significant contribution of task (TAC) and technology characteristics (TEC) in facilitating task technology fit (TTF). Initial trust is also found to be facilitated by structural assurance (SA) and familiarity with bank (FB). The statistical results also support the significant association of task technology fit (TTF), initial trust (IT) and facilitating condition (FC) with intention to adopt m-banking.

**Laforet and Li (2005):** Their study on consumer attitude and adoption of Mobile banking in china showed, there are several factors that affect and influence the consumer's attitude towards online banking. They are person's demography, individual acceptance of new technology, motivation and behaviour towards different

banking technologies. They have observed that the main barriers to online banking are the perception of risks, computer and technological skills and Chinese traditional cash-carry banking culture.

**Gan, Clemes, Limsogunchai & Weng (2006):** Their study indicates a) perceived risk factors, b) the service quality, c) user input factors, d) education, e) employment are the determinants of consumers' choice of electronic banking and non-electronic banking channels.

**Kuchara Varsha (2012):** According to her the major factors responsible for internet banking are convenience, security, easy to maintain banking transaction, curiosity, better rate and low service charges. The study found out that 50 per cent of respondents feel, internet banking is convenient and is definitely a flexible way of banking and has various transaction-related benefits.

**Tobbin (2012)** carried out an exploratory qualitative study in rural areas in Ghana. The outcome of his study provides a rich contribution and a model into identifying factors that influence the intention to adopt mobile banking services in rural population. The factors uncovered in his findings were linked to perceived ease of use, perceived usefulness, perceived trust, perceived economic factors, convenience, affordability, age and gender.

**Kishore & Sequeira (2016)** investigated mobile banking service adoption in rural Karnataka, India. The findings of their studies reveal that performance expectancy, effort expectancy, social influence, attitude, and perceived risk influence behavioural intention. Age and gender were found to have some moderating effect.

**Riquelme and Rios (2010) & Yu (2012):** In their study age, gender, educational status and income/poverty level have been found to be the important elements that influence on the use of mobile phones as a banking platform.

**Ian Ndlovu, Mercy Ndlovu (2013)** in their exhaustive research work on the role of banking sector in Gwanda district, Zimbabwe with a focus on the rural locales and formulated hypothesis that mobile money is reducing rural financial exclusion faster than traditional rural banking, micro-financing and financial development aid. The hypothesis has resulted in arriving at an actuality that the mobile banking has potential in reducing poverty by bringing into mainstream economic activity. This can correlated to Indian rural scenario also.

**Abhishek Behl, Abhinav Pal (2016):** Their study aims to develop a relationship between perception of users, degree of usage of mobile banking and the barriers associated with usage of mobile banking in rural India. The results reveal that perception whether it is towards usefulness, ease of use or risk version plays an important role towards degree of diffusion of mobile banking in rural setup.

**Kolodinsky (2004)** in his study on the factors that affect the adoption of E-Banking technologies has identified six factors i.e., relative advantage, complexity/simplicity, compatibility, observability, risk tolerance and product involvement are associated with it. Though the study is not exclusive to rural sector, it comes quite handy, once it is geared-up in the usage of mobile banking in the ensuing times.

**Yang et al., (2007)** identified current trend and development of the application of E-Banking in rural areas and the economic impact on local financial institutions. The result showed that the customers of small and local community banks possess the minimal awareness on e-banking. The researcher makes it a point that there is absolutely no scope for the rural folk to be aware of mobile banking, even when they do not know what the e-banking is.

**Ching Poon (2008)** studied customers' acceptance of electronic banking services in Malaysia. The researcher identified ten factors such as convenience of usage, accessibility, availability of features, bank management and image, security, privacy, design, content, speed and fees and charges. The result showed that out of ten factors accessibility, convenience of usage, design and content are the major sources of satisfaction & privacy and security are the main sources of dissatisfaction. The same are applicable to mobile banking also and can be widely attributed when once the mobile banking is forayed into rural sector. This analysis has come handy to certain extent while making hypothesis in this research.

**Nishi (2012)** measured the satisfaction level of rural customers from electronic banking services and also analyzed the factors that influence rural customers' satisfaction. The study found that rural customers were of neutral opinion with regard to the provision of updating, accuracy of transactions and convenience of e-banking. Similar points will come into picture when once the mobile banking start hitting the Indian rural side.

**Unnithan and Swatman (2001):** They have stated that mobile phones have become a significant communication tool for every person throughout the world. In rural India, where the mobile users outnumbered the fixed line subscribers due to better mobile infrastructure, that has made the mobile banking much better in offering services. Various players in the field of offering mobile banking services are expecting a potential growth in Indian mobile banking. But the actual usages of mobile banking are incommensurate with the number of mobile users in the country.

**Chandan Gupta, Anil Chandhok, Manu Gupta (2016)** have rendered an in-depth study of prospects and problems on e-commerce and m-commerce in India mainly with a purpose to find out whether a) m-commerce is able to penetrate Indian market really or not, b) the problems and issues with m-commerce in India, and c) what is stopping m-commerce in expanding its growth and help the people to connect to the global business? This study offers an insight to the researcher to explore the feasibility of m-banking which is a subset of m-commerce making its impact in the rural India and gain popularity.

## 5. Objectives of the study:

1. To analyze the developments in the rural mobile banking usage and corresponding progress made by the banking sector.
2. To study the awareness levels of rural citizens concerning mobile banking and to what extent they are availing various financial services that the bankers are providing.
3. What is the perception of rural people regarding banking services and their satisfaction level?

4. To have a broad outlook of the rural mindset towards adoption of mobile banking and the incumbent factors that influence the adoption or retreat and
5. With the comprehensive understanding of the current scenario of mobile banking in the village sector and to provide most viable suggestions to motivate rural customers to go in for mobile banking as a routine indicating the merits involved and to the bankers to initiate appropriate measures for promoting this objective.

## 6. Hypothesis:

Wide and in-depth observations, for a considerable period, on the changing dimensions of the banking system in urban and rural areas of Srikakulam district led the researcher to formulate the following hypotheses and collect the requisite data accordingly for testing them. This is to enable the researcher to chalk out a strategic plan of action for conducting the research oriented to meet the objectives of the said research.

H1: The demographic parameters viz. Age, Gender, Education, Occupation and Income have a significant influence on usage of mobile banking services.

H2: Possession of efficient smartphones does not have a significant influence on downloading mobile banking app.

H3: Awareness of mobile banking does not have a significant influence on usage of mobile banking services.

H4: Downloading the mobile banking app alone does not have a significant influence on usage of mobile banking services.

H5<sub>1</sub>: Insecurity factor has a significant influence on non-usage of mobile banking services.

H5<sub>2</sub>: Fear of high banking charges has a significant influence on non-usage of mobile banking services

H5<sub>3</sub>: Lack of trust has a significant influence on non-usage of mobile banking services.

H5<sub>4</sub>: The apathy towards internet services (Speed & Interruptions) has a significant influence on non-usage of mobile banking services.

H5<sub>5</sub>: A strong notion amongst rural folks that the mobile banking apps are not user friendly has a significant influence on non-usage of mobile banking services.

H5<sub>6</sub>: A strong belief on improper customer services has a significant influence on non-usage of mobile banking services.

H5<sub>7</sub>: Language has a significant influence on non-usage of mobile banking services.

## 7. Methodology:

The current study, being objective and descriptive in nature, the researcher has adopted both qualitative and quantitative techniques to elicit the requisite data from the outcome of the informal and unstructured personal interviews and the gist of responses obtained through a well structured questionnaire suited to meet the study objectives respectively. 40 villages in an assorted manner were selected for survey

covering the population of 1200 across Srikakulam district. Simple random sampling technique has been deployed in collection of data for accurate results. In the process, 720 duly filled-in responses have been considered for analyzing the data. ANOVA, an effective statistical tool in vogue, has been used for testing of the formulated hypothesis.

### **7.1 Banking sector in India at a glance:**

The Indian banking sector is broadly classified into scheduled and non-scheduled banks. The scheduled banks are those included under the 2nd Schedule of the Reserve Bank of India Act, 1934. The scheduled banks are further classified into: nationalised banks; State Bank of India and its associates; Regional Rural Banks (RRBs); foreign banks; and other Indian private sector banks. The term commercial banks refer to both scheduled and non-scheduled commercial banks regulated under the Banking Regulation Act, 1949.

The post liberalisation period has witnessed a dramatic change in Indian banking in terms of functioning, policy making and implementation. This has given birth to technically-oriented private banks viz., Global Trust Bank, which later amalgamated with Oriental Bank of Commerce, UTI Bank (Axis Bank), ICICI Bank and HDFC Bank, which has led to stiff competition among banks in terms of services, growth of capital, profitability with a caution towards bad debts and necessitated reinvigoration of the existing banks. As a consequence there has been a marked growth in banking as a whole, which resulted in effective contribution to Indian economy from all the three banking sectors viz. Government, Private and Foreign Banks. This has paved a path for the emergence and growth of Foreign Direct Investments (FDIs).

It is a sort of “rags to riches” story exactly happened in Indian economy as it rose from the state of shambles in 1991 to an absolute affluence, i.e., attain the status of the third largest economy in the world by 2011 and so is the case of banking sector also following the recommendations of the M. Narasimham committee set-up by the Finance Ministry of Government of India (GOI) in 1991 to analyze the Indian banking system and recommending legislation and regulations to make it more effective, competitive and efficient.

As a part of economic and banking reforms, the private sector banks were given a nod for expansion including setting up of more branches, besides upgrading the extension counters conforming to the RBI guidelines so as to attain capital adequacy and prudential accounting standards. They are also allowed to close non-viable branches other than in rural areas. The pace of transactions necessitated rapid computerization in banking which has become a “blessing in disguise” in the advent of e-commerce and its rapid proliferation.

## 7.2 Structure of current Indian Banking:



The current study is confined to scheduled commercial banks (SCBs) only.

It is unfortunate to some extent that the Indian banking is on the knife-edge, owing to the distress of at outrageous pile-up of voluminous NPA, but it is heartening to take in to cognizance that it has not shown any impact on the growth of e-banking at large and so is the mobile banking services.

### 7.3 E-banking:

The idea and concept of e-banking in India has its origin, a way back during 1990's with the launch of Electronic Clearing Service (ECS) to cater to bulk and repetitive payments consequent to the RBI's (Reserve Bank of India) vision and mission to ensure the safe, efficient, interoperable, authorized, accessible, inclusive and compliant with international standards to proactively encourage electronic payment system for ushering-in a less cash society in India and with this concept made a regulation to promote innovation and competition with an intention to help payment system achieve international standards.

Liberalization with rolling back of the government interference started in 1991-92 has brought out a total new dimension to Indian banking set-up leading to flexibility and independence of operations, amply suitable to handle complex market driven competitive system with relative ease. The new facet has emphasized the thrust on the bankers to totally alter their pattern of uniform thinking to undertake the challenges to explore growth potential, invoking customer trust and confronting the progressive intermediation of new entrants (e.g. Google Wallet, PayPal). The situation has warranted, whatever the business models be, the bankers have to focus their attention around the customer i.e., i) reputation commercial performance, ii) service performance, iii) marketing performance and the capabilities required to support them. The various improvements conducive to customer interest such as launch of electronic channels i.e., ATMs, Plastic money, Internet Banking and Mobile banking in addition to their conventional branch operations enhanced the customer inclination towards electronic channels. This has conspicuous effects on growth potential and cost optimization in marketing and distribution.

These innovative changes have opened a plethora of following benefits to the customers:

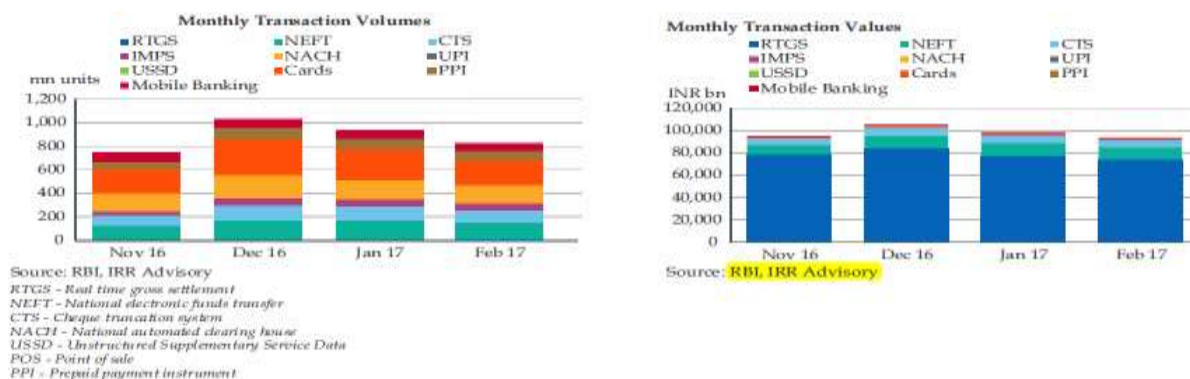
- The online banking system eased the bill payments of the customers round the clock without moving from his posture.



- Avoiding long queues & cumbersome procedures of funds transfers of all kinds with a single click have averted the delays and promoting a great deal of goodwill.
- Balance enquiries are at figure tips with authentic information which facilitated customers financial planning.
- Instant alerts on all sorts of transactions pertaining to customers' account have adequately helped the customer in dealing with his future course of actions.
- Cash management is a difficult area, be it to an individual customer or a retail seller. The emergence of e-banking adequately helped the customers to successfully manage their operations relating to short term and long term investments, controlling cash flows vis-à-vis payables and receivables.
- The e-banking services helped the online shoppers, making their payments easier.
- One prominent advantage of e-banking is that, that it eliminated several cumbersome and unhandy correspondences in respect of customers to bank and vice-versa.
- It offers a wide range of banking products and financial services to corporate and retail customers through a variety of delivery channels and through its specialized subsidiaries in the areas of investment banking, life and non-life insurance, venture capital and asset management.
- The e-banking includes the products and specialized services such as investment banking, life and non-life insurance, venture capital and asset management that are offered to corporate and regular customers.
- Going brokerage services-online like bond market transactions, transactions in stock, ETF (exchange-traded fund) and stock options markets, transactions in futures, future options, transactions in precious metals, trading, securities custody, financing against pledge of investment portfolio has made the investors' life easy and saved their precious time.
- Dematerialized account (Demat) has entailed several benefits to the customers such as a) instant crediting of the bonus to their accounts, b) total elimination of risk due to loss on account of fire, theft or mutilation, c) Lower transaction costs and d) avoidance of stamp duty and filling up of transfer deeds.
- Tax advisory services offered to public and private sector clients on capital structuring and funding options to reduce their funding costs.
- Forex operations such as travelling cards, multicurrency operations, international trading, international funds transfers, international shopping cards, NRI services etc., are made easy via e-banking.
- More secure than conventional banking because of multi layer protection procedure.

Despite the benefits narrated in the foregoing, e-banking is not in full bloom in India. It has made its relative presence felt in the urban sector and yet to hit the rural India. Nevertheless, Indian e-banking is not

at its wit's end, but rapid progress has been envisaged sequel to the onset of digital banking leading towards a big revolution. Post demonetization is yet to witness a push in the arena of payment transactions. The relevant statistical report of RBI in respect of the volume and value of various types of transactions of all modes of payments that took place since November 2016, as presented by FICCI is shown in Exhibit-1.



As per concise RBI report representing electronic payments, as updated on 6<sup>th</sup> March, 2018, the total number of transactions taken place as of November 2016 is 672 that rose to 1122 by February 2018. There is a handsome hike of 167 per cent. The detailed report, the mode of payment-wise is shown in Exhibit-2. The corresponding value of transactions till November 2016 stands at Rs. 94004.2 billion giving raise to Rs. 131980.80 billion until February 2018 which represents a phenomenal growth of 140.40 per cent shown in Exhibit-3.

Electronic Payment Systems - Representative Data (Updated as on March 06, 2018)  
 (Total Number of Transactions: Source RBI)

Exhibit: 2

Data for the period	RTGS	NEFT	CTS	IMPS	NACH	UPI	USSD	Debit and Credit Cards at POS	PPI	Mobile Banking	Total
	volume	volume	volume	volume	volume	volume	volume (in thousands)	volume	volume	volume	volume
Nov-16	7.9	123.0	87.1	36.2	152.5	0.3	7.0	205.5	59.0	72.3	671.5
Jan-18	11.2	170.2	96.7	99.6	208.1	151.7	172.8	271.1	113.6	106.3	1122.3

The above figures are provisional

Electronic Payment Systems - Representative Data (Updated as on March 06, 2018)  
 (Total value of transactions: Source RBI)

Exhibit: 3

Data for the period	RTGS	NEFT	CTS	IMPS	NACH	UPI	USSD	Debit and Credit Cards at POS	PPI	Mobile Banking	Total
	value	value	value	value	value	value	value (in Rs. thousand)	value	value	value	value
Nov-16	78479.2	8807.8	5419.2	324.8	606.6	0.9	7302.6	352.4	13.2	1244.9	94004.2
Jan-18	107488.4	15374.1	6792.6	882.1	727.7	155.4	290020.0	521.9	38.3	928.7	131980.8

The above figures are provisional

Although the above figures are overwhelming displaying a stance to the explosion of e-banking, they are confined largely to the urban India only. In a report, titled “ENCASHING ON DIGITAL: Financial Services in 2020”, drafted by Facebook and The Boston Consulting Group (BCG) in June 2017, it is optimistically predicted that as a result of the ongoing digital drive in India, the number of users opting for

online banking is expected to double to reach 150 million mark by 2020, from the current 45 million active urban online banking users. Notwithstanding the high proliferation of e-banking activities, it is predominantly noticeable that out of 470 Million bank account holders, only 30-40 Million users are active on e-banking contributing to only 8 per cent. The 8% reflects apparently a good volume of money involved, but the percentage of usage of e-banking services is at its lowest ebb compared to many other countries. 180-200 million are internet users but not online banking & the rest (220-240 Million) does not have internet access. It is totally a sorry-state-of-affairs when coming to the rural sector, where digital revolution in e-banking is yet to make a dent, for obvious reasons.

## **8. Mobile Banking In India:**

### **Transition phase:**

“Necessity is the mother of invention” is true to its every bit and practically the relevance of time is one of its dimensions. As the time is becoming a rare commodity for handling the inevitable multiple activities in human endeavour to catch-up the trends in the rapidly changing world. In this dynamic process all the luxuries are automatically converted into comforts and the comforts turning to necessities. Mobile banking is not an exception to this phenomenon.

Mobile banking (M-banking) has its origin way back in 1999 when PayBox a European company, with the financial support from Deutsche Bank, had started via SMS mode, that has revolutionised the total banking activities, thus has become a viable part-and-parcel of the banking segment over period of time. Consequently, the advancement of mobile technology in hard and softwares led to the conversion of the feature phone in to a smart phone with the cost effective utility in terms of device cost and data plans which facilitated the exponential growth of mobile banking usage at large.

While internet banking has already been established in a big way, offering all kinds of banking services, the mobile banking also is drawing levels in catering most of such services with minor limitations. The following are the generic services offered by mobile banking system: a) fund transfers, b) bill payments, c) ordering cheques, d) updating profiles and personal information, e) verification of lost or stolen cards, f) buying and selling of stocks, g) securities, h) obtaining current information about securities, i) Information regarding branch and ATM locations, j) alerts, k) account statements and l) balance enquiries etc.,

### **Mobile banking merits and demerits:**

#### **Merits:**

- ❖ Quick and easy to use
- ❖ Transact while on the run
- ❖ Saves time
- ❖ Cost effective
- ❖ 24/7 Services

- ❖ More secure and hassle free compared to online banking
- ❖ Avoidance of long queues for all sorts of transactions, thus it frees from physical exertion.

**Demerits:**

- ❖ Vulnerable to security threats (phishing scams, viruses, Trojans etc.,)
- ❖ Possibility of losing the device by theft or forgetfulness
- ❖ Device cost is high
- ❖ High transactional charges
- ❖ Requires data plans to use mobile banking which is an additional cost to the customer.

**8.1 Status of M-Banking in India:**

Report of Counterpoint Research 2017 predicts that India will stand at second place with 530 million smartphone users preceded by China with 1.3 billion in 2018. India currently has 650 million mobile phone users, out of which 300 to 400 million are the smartphone users. The two thirds (433 million) of the mobile phone users are planning to upgrade their devices to smartphone within a span of one year.

TRAI (Telecom Regulatory Authority of India) press release notification: 48/2018 dated 24<sup>th</sup> April 2018 shows that the total number of the current mobile phone users in India stands at 1156.87 million with the monthly growth of 0.43 per cent, of which the urban segment has the share of 650.03 million (0.49 per cent monthly growth rate) and the rest 506.03 million by the rural sector reflecting the monthly growth rate at 1.55 per cent. This emulative growth adds a better ground for spurring mobile banking wide across the country.

Being rewarding cost & comfort wise, in the customers' and bankers' point of view, the mobile banking is fast evolving into a prominent revenue channel for banks and delight to customers. The resultant effect unveils a high focus on the delivery of personalised real-time customer services on the mobile on the part of bankers. This is the right Mantra on bankers' part for achieving the high degree of customer satisfaction.

The 2017 survey report of BCG (Boston Consulting Group) and Facebook shows that there are 38 million active urban online banking users and estimated that it might reach 150 million by 2020 as a consequence of demonetisation, which is a vehicle for transformation to mobile banking that is going to overtake net-banking in 2018. The statistics reveals that in adoption of mobile banking, India stands at 4<sup>th</sup> rank globally.

While the mobile banking is gathering momentum in the urban areas at a moderate pace, it is still limping to reach the rural sector, but there is an untapped potential envisaged in the village segment. Current status shows that the existing 6,00,000 (approximately) village habitations in India, only 5 per cent have a commercial bank branches. RBI has identified 4,90,000 unbanked villages and initiated steps for the bank coverage under second phase of Pradhan Mantri Jan Dhan Yojna. Besides, Indian banks are widening their branch network in the rural areas to tap this potential so as to bag the new market opportunities.

Banks, telecom providers & RBI are putting efforts to foray the un-banked rural India through mobile banking solutions. Withstanding all these endeavours, the rural sector is still trailing a lot behind for several reasons. The current research is aimed at finding out the intrinsic and extrinsic factors contributing to this stolid state with a critical study on the status of mobile banking in rural areas of Srikakulam district, Andhra Pradesh State, India and providing the necessary inputs to better the situation in all fronts.

### 9. Data Analysis:

The primary part of the survey is to obtain the demographic details of the respondents i.e., Gender, Age, Education, Occupation and Income and the same is tabulated below:

Testing of Hypothesis:

**H1: The demographic parameters viz. Age, Gender, Education, Occupation and Income have a significant influence on the usage of mobile banking services.**

Table – 1

ANOVA						
Demographic Factors		Sum of Squares	df	Mean Square	F	Sig.
Gender	Between Groups	2.063	1	2.063	11.688	.001
	Within Groups	126.737	718	.177		
	Total	128.800	719			
Age	Between Groups	12.895	1	12.895	18.587	.000
	Within Groups	498.105	718	.694		
	Total	511.000	719			
Education	Between Groups	30.695	1	30.695	20.217	.000
	Within Groups	1090.105	718	1.518		
	Total	1120.800	719			
Occupation	Between Groups	26.316	1	26.316	18.566	.000
	Within Groups	1017.684	718	1.417		
	Total	1044.000	719			
Income	Between Groups	16.842	1	16.842	25.237	.000
	Within Groups	479.158	718	.667		
	Total	496.000	719			

From the Table-1 it is clear that the demographic parameters have a little bearing on the usage of mobile banking services.

**Gender:**

The Table-2 results reveals:  $p < 0.05$  (0.000) where  $F = 18.587$ . It is observed that the majority of the respondents is males 76.70 per cent (554) and the rest is females 23.30 per cent (168). It clearly indicates that the gender as a demographic factor has a significant influence on the usage of mobile banking services and hence, the hypothesis has been accepted.

**Age:**

The Table-2 results show:  $p < 0.05$  (0.000) where  $F = 11.688$ . It can be seen that the age groups of 26-40 45.00 per cent (324) and 41-60 31.07 per cent (228) form the big lot followed by above 60 that is 16.7 per cent (120). It is evident that the age as a demographic factor has a significant influence on the usage of mobile banking services and hence, the hypothesis has been accepted.

**Education:**

The Table-2 results disclose:  $p < 0.05$  (0.000) where  $F = 20.217$ . It is inferred that the graduates represent the biggest portion with 43.30 per cent (312), others (diploma, ITI & vocational etc.,) in the second place with 23.30 per cent (168) and the next intermediates 20.00 per cent (144). Hence, the education as a demographic factor has a significant influence on the usage of mobile banking services and hence, the hypothesis has been accepted.

**Occupation:**

The Table-2 results demonstrate:  $p < 0.05$  (0.000) where  $F = 18.566$ . It is a clear indicative that the employed occupy the highest proportion with 40.00 per cent (288) and followed by the un-employed & farmers which constitutes to 20.07 per cent (144) each. It is, therefore, the occupation as a demographic factor has a significant influence on the usage of mobile banking services and hence, the hypothesis has been accepted.

**Income:**

The Table-2 results depict:  $p < 0.05$  (0.000) where  $F = 25.237$ . It can be elicited that the lion share is held by the income group of below Rs. 10,000 with 53.33 per cent (384), the 10K – 25k with 30.00 per cent (216) is in the second row and 25k – 50k 13.30 per cent (96) at the third. It adequately proves that the Income as a demographic factor has a significant influence on the usage of mobile banking service, as such, the hypothesis has been accepted.

**H2:** Possession of efficient smartphones does not have a significant influence on downloading mobile banking app.

**Table - 2**

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16.000	1	16.000	92.051	.000
Within Groups	124.800	718	.174		
Total	140.800	719			

The data synchronized in table – 2 draws out the  $P < 0.005$  (.000) and  $F = 92.050$ . Out of 528 smart phone users, only 120 (22.72 per cent) have downloaded the mobile banking app. It amply illustrate, mere owning the efficient smartphones does not have a significant influence on downloading mobile banking app. As such, the formulated hypothesis stands accepted.

**H3: Awareness of mobile banking does not have a significant influence on usage of mobile banking services**

**Table – 3**

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.168	1	12.168	53.070	.000
Within Groups	164.632	718	.229		
Total	176.800	719			

As is seen from the table – 3, where the  $p < 0.05$  (.000) and  $F = 53.070$ , among 408 respondents who are aware of mobile banking, only 36 respondents (8.82 per cent) are using mobile banking services. This proves that sheer awareness of mobile banking does not have a significant influence on the usage of mobile banking services and hence, the formulated hypothesis is accepted.

**H4: Downloading the mobile banking app alone does not have a significant influence on usage of mobile banking services.**

**Table – 4**

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.474	1	9.474	75.140	.000
Within Groups	90.526	718	.126		
Total	100.000	719			

From Table – 4 where the value arrived  $P < 0.05$  (.000) and  $F = 75.140$ , it is observed that 36 (30.00 per cent) respondents from the lot of 120 mobile banking app downloaders. This clearly spells out that downloading the mobile banking app alone does not have a significant influence on usage of mobile banking services. Hence, the formulated hypothesis is accepted.

On meticulous evaluation of data, the genuine factors that detract the smartphone users from using mobile banking services were surfaced. All the factors as per the formulated hypotheses were analysed individually and tested.

**H5<sub>1</sub>: The feeling of Insecurity has a significant influence on non-adoption of mobile banking services.**

H5<sub>2</sub>: The apprehension of high mobile banking charges among the rural people has a significant influence on the un-willingness towards usage of mobile banking services.

H5<sub>3</sub>: Lack of trust in rural folk has a significant influence on disinclination towards usage of mobile banking services.

H5<sub>4</sub>: Fear of privacy has a significant influence on the reluctance towards using mobile banking services.

H5<sub>5</sub>: Concern about internet speed & network interruptions has a significant influence on non-usage of mobile banking services.

H5<sub>6</sub>: A notional disbelief on customer service has a significant influence on non-usage of mobile banking services.

H5<sub>7</sub>: English language has a significant influence on the non-usage of mobile banking services.

**Table -5**

ANOVA						
Influencing Factors		Sum of Squares	df	Mean Square	F	Sig.
Insecurity	Between Groups	43.116	1	43.116	98.689	.000
	Within Groups	313.684	718	.437		
	Total	356.800	719			
Charges are high	Between Groups	64.042	1	64.042	288.910	.000
	Within Groups	159.158	718	.222		
	Total	223.200	719			
Lack of Trust	Between Groups	65.695	1	65.695	290.976	.000
	Within Groups	162.105	718	.226		
	Total	227.800	719			
No privacy	Between Groups	189.011	1	189.011	754.825	.000
	Within Groups	179.789	718	.250		
	Total	368.800	719			
network interruptions / Speed of Internet	Between Groups	81.516	1	81.516	302.184	.000
	Within Groups	193.684	718	.270		
	Total	275.200	719			
Customer Services	Between Groups	215.253	1	215.253	904.088	.000
	Within Groups	170.947	718	.238		
	Total	386.200	719			
English language	Between Groups	47.253	1	47.253	342.883	.000
	Within Groups	98.947	718	.138		
	Total	146.200	719			

### **Insecurity:**

The statistics in table – 6 shows  $P < 0.05$  (.000) and  $F = 98.689$ . This clearly indicates that the Insecurity factor has a significant influence on non usage of mobile banking services i.e., 73.25 per cent (352) out of 482 respondents are away from mobile banking services, and hence the hypothesis is accepted.



**High Charges:**

The Table – 6 reveals that the  $P < 0.05$  (.000) and  $F = 288.910$ . With this it can be drawn that 70.15 per cent of respondents (337) are not inclined to adopt mobile banking services out of fear of high charges and hence it has a significant influence on non usage of mobile banking services. Therefore, the formulated hypothesis has been accepted.

**Lack of Trust:**

It is observed from the Table-6 that the  $P < 0.05$  (.000) and  $F = 290.976$ . It is derived from the results that 65 per cent of respondents (313) are not prone to mobile banking usage because of lack of trust. As such the trust factor has a significant influence on non-usage of mobile banking services. Hence, the hypothesis is accepted.

**No Privacy:**

The Table – 6 shows that the  $P < 0.05$  (.000) and  $F = 754.825$ . It is extracted from the results that 62.33 per cent of respondents (298) are not in favor of mobile banking due to privacy factor, thus the trust has a significant influence on non-usage of non-usage of mobile banking services. Hence, the formulated hypothesis has been accepted.

**Network Interruptions/Speed;**

Table – 6 depicts the  $P < 0.05$  (.000) and  $F = 302.184$ . It is inferred from the results that 55.45 per cent respondents (265) are notional about network speed and interruptions. Thus, the element of Network speed / Interruptions has a significant influence on non-usage of mobile banking services and therefore the hypothesis is accepted.

**Service Quality:**

It is viewed from the Table – 6 that the  $P < 0.05$  (.000) and  $F = 904.088$ . The results spell-out, 66.33 per cent respondents (318) are skeptical about the service quality provided by banks. This concludes that the service quality has a significant influence on non-usage of mobile banking service. Accordingly the formulated hypothesis has been accepted.

**English language:**

The Table – 6 reckons the  $P < 0.05$  (.000) and  $F = 342.883$ . The outcome of the results manifests 71.20 per cent of respondents (71) are disinclined towards mobile banking as English language is a big barrier. Thus, the formulated hypothesis that the English language factor has a significant influence on non-usage of mobile banking services, is proved.

**10. Findings:****10.1 Statistical Findings:**

On vigorous survey conducted in 40 villages of Srikakulam district, a population of 720 persons (sample size) owning the mobile phones and bank account has been considered for study.

- The majority (76.7 per cent) of respondents comprise male and the rest (23.3 per cent) female.
- The most productive respondents include the age group of 26-40 years (52.08 per cent) and closely followed by the age group of 41-60 (30.00 per cent).

- Concerning the educational background of respondents, the graduates form the major chunk (41.11 per cent), Intermediates (20.60 per cent) are in the second row and others with diploma holders, ITI & vocational courses (19.03 per cent) occupy the third row.
- In regard to the occupational levels, the greater portion (38.61 per cent) is taken by the employed including the government service and private, the next is farmers (29.86 per cent) followed by un-employed (18.33 per cent).
- 53.3 per cent of the respondent's monthly income below ₹10,000 followed by 30.00 per cent with the income group of ₹10,000 to ₹25,000.
- All respondents of this survey on mobile phone users and holding a minimum one bank account. All the respondents having one savings bank account.
- 73.3 respondents are smart users.
- 56.7 per cent of the respondents aware of mobile banking services.
- Majority of the respondents came to know about mobile banking from their friends/relatives.
- 65.4 per cent people know that their corresponding bank providing mobile banking app.
- 16.7 per cent respondents are downloading mobile banking app.
- 25.00 per cent of the respondent are not interested in mobile banking app download.
- 5.1 per cent of the respondents are doing mobile banking.
- Major part of the respondents are using mobile banking services i.e., transfer of funds, recharges, EMI's, balance enquiry and e-shopping.
- The maximum part (44.11 per cent) among 408 respondents who have not downloaded the mobile banking app comprises those who are not interested. 29.41 per cent (un-willing and never wanted), 17.64 per cent are not bothered and the balance 8.84 per cent are ignorant of such app.
- The actual users of the mobile banking services among 120 of those who downloaded the respective app are 30 per cent (36) only.
- The reasons for not going in for mobile banking despite downloading the app are: Insecurity (82.11 per cent), High charges (59.22 per cent), Lack of Trust (52.10 per cent) , No privacy (46.77) , Fear of frequent network interruptions / speed of internet (89.54), Not bothered (48.20 per cent), Dissatisfactory customer support (72.34 per cent) and discomfort with English language (68.12 per cent).
- The only 36 mobile banking service users have expressed the reasons for adoption that include a) convenience and ease of use, b) saving of time c) 24/7 access, d) secure transactions, e) reliable service, f) easy funds transfers, g) avoiding physical strain and they want to be modern and up-to-date.

## 10.2 General Findings:

- When considering the total population of rural Srikakulam, the very concept of the m-banking is at the bleakest stage with the most marginal knowledge on the subject.
- The factors observed for such a grim scenario are a) illiteracy, b) complacency, c) high resistance to change, d) gross ignorance, e) phobia towards using electronic devices, f) acute poverty, g) incongruous financial management, h) obstinate attitude and mind set, i) high dependency on circumstances, j) indelible belief of handling liquid cash only, k) unfavourable government support and l) concentration of high population in the rural sector.

## 11. Suggestions & Recommendations:

Comprehensive and meticulous analysis of the data collected has prompted the researcher to present a bi-dimensional matrix of plausible suggestions and recommendations to weeded-out the current and impending impediments, overhaul the prevailing system and overall advancement of the rural society in general from the grass-root level.

1. Considering the existing customer data base, the bankers have to chalk-out a comprehensive and long term strategic plan of action to educate the rural customers and render high amount of motivation to them to get attracted towards the adoption of mobile banking irrespective of their education, occupation and income levels.
2. It is the onus on the part of government to inculcate the total awareness and interest among the rural people towards mobile banking via various means such as public Adds, SMS services, special campaigns, social media, short films etc., and accordingly initiate steps to avert all sorts of apprehensions in the minds of rural.
3. As part of the Digital India project, the government wants to ensure that every Indian has a smartphone by 2019. In this direction a special emphasis with a focus has to be given in the rural areas and hasten the process to the extent possible.
4. The current scenario is that that the bank employees at the levels of worker & junior managers and their agents are not well conversant of the m-banking concept and its applications. It is therefore imperative on the part of the top management/Board level need to conduct structured and easily implementable training and awareness programmes periodically for coping up with the rapidly changing trends in the system, so as to propagate the concept, theory and practice of m-banking among the rural customers in an easily comprehensible & perceivable manner.
5. The bankers' agents have to necessarily undertake the responsibility of briefing and convincing the rural customers about mobile banking on a day-to-day basis, in addition to their other routine banking activities. Such reiteration is sure to plant the seeds of m-banking adoption in the minds

of the village customers. They must put their best efforts to ward off the apprehensions and fears from the minds of village customers.

6. The bankers have to think of the novel & most effective methods of publicity on mobile banking among the rural areas. The concerned bank officials need to make it a point of paying periodic visits to the villages, irrespective of existence of their branches, and demonstrate the transactional process via giant screen displays, Audio-Visual shows and corresponding bank agents have to render affable follow-up through verbal, tabs & mobile modes.
7. It is a clearly noticeable fact that the public sector banks function with a conceited temperament in dealing even with the general customers and more so with the rural folk violating the basic principle of “customer is a god” necessarily. A meticulous adoption of this basic principle is warranted to be fixed in the mind set of bank employees at the operational level.
8. The current m-banking system in India sans the policy of extending incentives, cash or kind or in any beneficial form to the customers. This ideology is to be strongly discouraged since the very concept of m-banking is new in nature and difficult for the customers both in urban and rural sectors to understand and move forward in adopting the usage of mobile banking. Some of the RBI authorized non-banking financial companies (NBFCs) like Paytm, MobiKwik etc.,) are offering several such enticing incentives (cash back, discounts, coupons, movie tickets, shopping vouchers etc.,) are becoming popular and attracting more and more customers. It is therefore, vital to the PSBs (Public Sector Banks) and private sector banks too to think critically in that angle and take it as a ‘thrust’ area in order to draw the customers to their fold and give a boost to the growth of mobile banking usage in urban sector and rural part with a special focus.
9. As far as downloading of the mobile banking app is concerned, the current practice is the account holders are downloading the same from google play store. The process involves the risk factor and confusion. While searching for the corresponding mobile banking app, it displays multiple options under the same bank name causing a big dilemma in choosing the right one. A live example is State Bank of India (SBI). The search result displays multiple apps like SBI Online, SBI Card, SBI Quick, SBI Anywhere personal, SBI Buddy, SBI Anywhere corporate, SBI Rewardz, State Bank MobiCash, SBI Mingle etc. In this circumstance a general customer gets highly confused in selecting the right app. It is next to impossible for a rural customer to understand this. So as to avert this type of complex procedure, it is suggested to the bankers that they provide a direct hassle free link without involving the google play store via SMS or through their agents. This saves time and ensures the customers’ trust, security and marginalisation of cyber threats.

10. The App has to be developed in a user friendly manner with a simple menu driven and interactive interface to the user and capable of resolving the transactional issues instantly. It is advisable that the app has an exclusive toll free number for customer support.
11. An app can be developed by combined efforts of telecom operators and banks embedding the same on all new SIM cards, so that any customer buying a new SIM card has a preinstalled application.
12. The current situation lacks proper co-ordination between bankers and mobile network providers. A strong and highly effective coordination is necessary in promoting mobile banking for mutual advantages. The initiation has to come from both bankers and network providers for building-up a sustained coordination, with the aim of benefiting the customers.
13. Strong and effective security measures play a very crucial role on the part of bankers to inculcate total trust among customers and it invites more and more of them towards mobile banking usage. Adopting a dynamic policy in safeguarding security despite infrastructure cost add to reliability and wins name & fame to the bankers and it will act a feather in their cap. Such a popularity/branding will come handy while striking the rural sector. The following tips are suggested to the bankers while getting the app developed:
  - a. Ensure the security of the app's code, and network connections on the back end.
  - b. Ascertain identification, authentication, and authorization process to curb all sorts of fraudulent transactions and cyber crimes.
  - c. Adopt a robust mobile encryption policy.
  - d. App should be highly capable of blocking unauthorized devices, and secure with firewall, antivirus, and anti-spam software.
  - e. The app should be fool-proof in preventing cross-channel infections of any kind.

All the above measures in one way or other are in practice but they should be fortified further so as to avert the untoward happenings.

14. It is an essential fact the banker should note that they should minimize the service charges towards NEFT (National Electronic Fund), RTGS (Real Time Gross Settlement), IMPS (Immediate Payment Service) Timings etc., so as to give an impetus to mobile banking.

### 11.1 General Suggestions:

1. The rural sector is plagued with the several indelible odious beliefs & practices, illiteracy, adamancy, high degree of complacency, superstitions, ignorance, high resistance to change, element of negativity, unidirectional thinking patterns, and several other ills. Hence, rapid rural development from the grass route level should be taken up on the war-footing by the government in a result-oriented manner to eliminate the above and also to alleviate the poverty.

2. Although the government deserves all praise for launching numerous developmental measures, the implementation is in a sublime state. This area required a multi-fold strengthening in order to reach a certain level where the rural folks are enlightened enough to think for their own development to on par with the urban. This gives scope for them to understand the modern concepts like e-commerce, e-banking, e-governance etc. However, it is an up-hill task. The burden of rural up-liftment does not only lie with the government, but there is also a compelling moral & social responsibility on the part of several self-help groups NGOs, Colleges, Universities and all other educational institutions as well as industries to undertake the task. They have to handle this task with a sense of belonging in such a way that their efforts should create an utmost interest and eagerness in the minds of rural people with an orientation towards sociability and progressive refinement from time to time.
3. The rural customers are suggested to shun their lackadaisical attitude and cultivate analytical thinking, flexibility, following the changing trends and positive attitude with a firm belief that it takes them to a long way in their life and career. Only then, they can catch-up with the modern concepts & amenities, mobile banking being the one. They will have to keep themselves amenable to mobile banking, keeping in mind the plethora of advantages such as i) ease of use, ii) saving of time, iii) avoidance of big queues, iv) comfortability, v) anywhere & anytime banking, vi) safety and security, vii) availing more number of services like buying online movie, train and air tickets, bills payments, mobile & D2H recharges, online shopping, funds transfers and many other benevolent services.
4. Those who are already into the mobile banking should necessarily follow some precautions and alerts in terms of security and hassle-free transactions.
  - a. Keeping the mobile phone secured by a unique password comprising a mix of alphanumeric and special characters.
  - b. Changing the password on regular basis.
  - c. Reporting to the concerning authorities (Bank and Police station) immediately in case of a lost or stolen phone
  - d. Exercising more care and caution in transactions via mobile banking which involves a risk factor.
  - e. Not sharing the confidential information with any person or organization or any kind of that sort. No bank will ask such information over phone.
  - f. Informing the concerned bank at once in case of changing the mobile number.

## 12. Conclusion:

The study has given an immense scope to understand the roots & history of mobile banking and its practice. It also has profusely helped in gaining a comprehensive understanding and perception of urban

behaviour towards mobile banking and the complexities involved in the rural scenario at fathomable scales. On the one hand the sphere of mobile banking is undoubtedly rosy in the urban areas and it is contrary on the other in the case of the rural sector, where the picture is gloomy for obvious reasons. The existing system is grossly failing to extend its opportunities to the rural and as a sequel, the fruits of mobile banking are not reaching rural sector. The in-depth analysis of the study vs. prevailing system vis-a-vis its pros and cons entailed a great scope in providing the above suggestions and viable solutions. Thus, it is paramount that the concept of mobile banking should spread widely against all odds as it largely adds comfort to all consumers socially, economically and technically and contributes to the country's exchequer.

### 13. Scope for further research:

As the very concept of mobile banking is in the nascent stage in the rural India, there is compelling and perennial need for mobile banking to unfold its dynamics. Thus, this research paper opens an unlimited scope for further research on all fronts including m-commerce, m-governance and all other allied areas.

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