



Dear Readers,

Season's greetings and I hope you are still pursuing that New Year resolution.

We at Mahindra Comviva enter this year with high spirits and while we look back at the year gone by (and what a stellar year it was), we stay hungry, stay foolish.

To raise a toast to the year to come, we have compiled for you an array of delectable delights. Learn about how gamification is becoming a powerful tool for customer education while saving big bucks across industries in 'A Game Plan'. Keep an eye out for the hacker and the crackers in 'What the HACK?' We take you through the multitude of initiatives that Econet is driving in Zimbabwe through EcoCash to create a cash lite economy. We also compiled for you a narrative of all that has happened in the last year in the world of mobile wallets.

I leave you with some inspiring words from T.S.Eliot.

"For last year's words belong to last year's language And next year's words await another voice. And to make an end is to make a beginning."

Srinivas Nidugondi

SVP and Head of Mobile Financial Solutions at Mahindra Comviva



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By Gopal Gupta

New to the world of cyber security? Then you must be struggling to understand the difference between various types of security teams. You must have heard the term hackers (also called crackers), portrayed in movies as the geek surrounded by systems as big as 60's IBM but as fast as quantum computers working on Matrix type command console and hacking any system within minutes, sometimes in seconds if it's a climax scene or there is a Gun to his or his GF's head (if it is Bollywood, it would be his mother's head).

WHAT THE HACK?

Understandably, the reality is far less dramatic. However, the impact hackers create is far reaching. Be it financial, political, national security, reputational (personal, national or of organization) etc. So, when somebody decides to tread into the highly troubled waters (but interesting) of security, (s) he is usually disappointed to hear their mentor say: "No, you can't hack Gmail or Facebook of somebody, it is too tough" (Disclaimer: there is no place for impossible word in cyber security's dictionary, no matter how many patches you apply). But, before you raise your expectations too high, first let's understand the difference between different categories:

Black hat hackers: A "black hat" hacker is a hacker who "violates computer security for little reason beyond maliciousness or for personal gain" (Moore, 2005). The one mentioned in the beginning - the one portrayed in movies. In layman terms, you can call them the bad guys of hacking performing unauthorized hacking for some kind of gain. They usually keep their findings to themselves and sell the exploits in



black-market. Black hat hackers break into secure networks to destroy, modify, or steal data; or to make the network unusable for those who are authorized to use the network. Black hat hackers are also referred to as the "crackers" within the security industry and by modern programmers. Once they have gained control over a system, they may apply patches or fixes to the system to retain their control over the system.

White hat hackers: These are the good guys of hacking authorized to perform testing. You can call your internal security tester or third party you have authorized to perform security testing on your infrastructure/application as white hat hackers. White hat hacker takes all necessary permission and discloses all the findings to the owner of the system. White hat hacker does not reveal any information of the system to any other party not authorized to have such information.

Grey hat hackers: As the name suggests, they lie in between Black hat and White hat. Grey hat hacker is somebody who has not been authorized by the organization to perform attack/testing on its application/infrastructure. But still grey hat hacker does so and responsibly reports to the organization about any security finding. He may charge the organization for fixing the issue. But remember, testing without permission is still illegal.

Red Team: This is a comparatively new concept and it is gaining popularity among security conscious people (even among government and the military establishment). The Red team is a team of security experts who try to break into the organization's security systems by attacking it like a hacker. They will use all possible attack vectors including social engineering to break into unauthorized system. Usually they have the permission to perform this attack from higher management but not many in the organization are aware of their mission. Red team is very effective in identifying realistic security threats of an organization. The best part of it is that it also identifies the gap in human factor and process

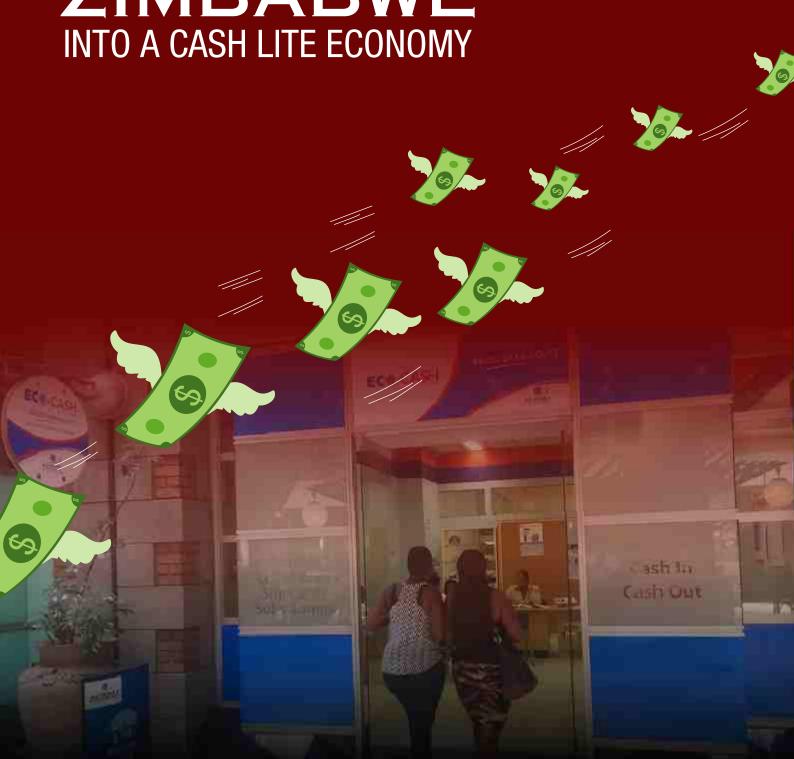
So to protect ourselves from hackers, we do need hackers. Software product developers have to figure out their own White Hat, Grey Hat hackers or partners who can help us build very robust solutions. Keep hacking!!!!

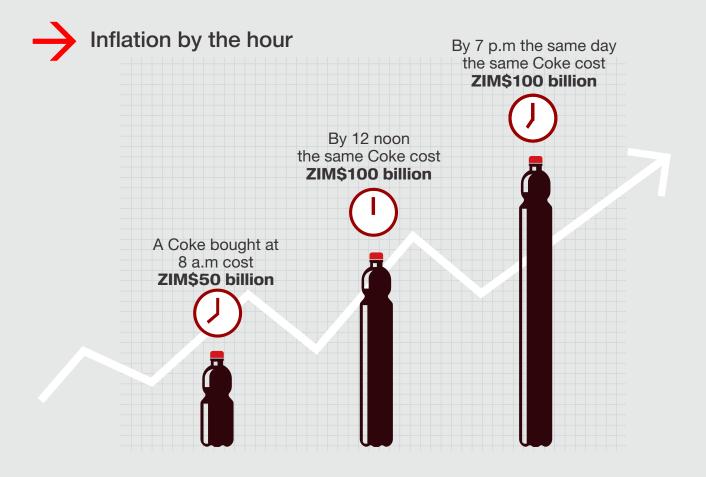


About the author: Gopal Gupta has over 8 years of experience in information security, security consulting, security training and product development. He has worked for BFSI, telecomm, energy and healthcare sectors' security. Gopal holds the degree in Electronics & Telecomm Engineering. He is working as Security Architect for Mobile Financial Solution and also provides training on Secure Software Development and PCI-DSS.

Changing Lives VRITTI January 2016

ECOCASH T R A N S F O R M I N G ZIMBABWE INTO A CASH LITE ECONOMY





2008: In Zimbabwe, with hyperinflation touching 5 Billion, all mayhem broke loose. A bottle of Coke costing ZIM \$50 Billion in the morning sells for over ZIM \$150 Billion in the evening – a hike of over 300%. This was what living in Zimbabwe was like in 2008. Things came to such a pass by 2009 that the Zimbabwean Dollar (ZIM) was not worth the paper it was printed on and was soon replaced by the US Dollar. Although the currency shift managed to control the wildly galloping inflation but it also gave rise to new problems and challenges. "Dollarization of Economy" wiped off bank savings of millions of Zimbabweans even while they were queuing up in front of their banks to withdraw their savings. People lost their trust in banking institutions and turned to informal payment channels. Moreover, with \$1 being the minimum currency in use, Zimbabweans experienced an acute coin shortage leading to "change problem".

Now, let us fast forward to 2015: the economy is rebounding, the change problem has been marginalized, and financial inclusion is finally a reality and not some visionary's dream. The credit for driving this change goes to EcoCash, Zimbabwe's first and most prominent mobile service company. Launched in 2011,

Things came to such a pass by 2009 that the Zimbabwean Dollar (ZIM) was not worth the paper it was printed on and was soon replaced by the US Dollar.

by EcoNet Wireless, Zimbabwe's leading mobile operator, EcoCash has grown as a viable alternative to cash for millions of Zimbabweans looking to save, borrow, transfer and save money.

EcoCash practically makes every financial transaction possible using a mobile phone. Open and manage a savings account or get loan within minutes? It's possible. Transfer money to friends and family instantly? It's easy. Pay online or at POS using debit card linked to mobile money account? It's doable. Whatever be the requirement – EcoCash make it happens for Zimbabweans!

Today, EcoCash is used by 5 million Zimbabweans, accelerating the use of electronic payments in the country and making the economy cash-light. Watch this engaging video on how EcoCash has transformed the financial landscape in Zimbabwe





Ecocash in 2015

Used by 53% of Zimbabwe's adult population



Annually handles transactions valued over



Accounts for about half of Zimbabwe's national financial services penetration level of about

30%



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THROUGH THE LOOKING GLASS

2015 Gone by in Payments and Looking Forward to 2016





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By Harishankar V

As we end another exciting year in mobile payments, let's take a brief look at the landmark events that transpired in 2015. In the course of this brief write up, we will also take a quick sneak peek into the exciting things that we can expect to see in 2016. Tim Cook put succinctly early last year that 2015 is going to be the 'Year of Apple Pay'. This turned out to be debatable as the year went by, but many payment industry experts will agree that innovation in payments was driven firmly by mobile and mobility in 2015. This is even more evident in the number of "OEM Pay" products that were introduced in the market in 2015 as competition to Apple Pay released in late 2014. Let's look at some of the biggest news makers in the payments industry in 2015

The 'Pays' of the world

With the launch of Android Pay, Samsung Pay and LG Pay technology powered payment services came to the forefront to counter the much hyped Apple Pay in the United States. But the 'Pay' phenomenon was not limited to OEMs with Walmart and Chase emerging as two of the biggest proponents of CurrentC - the payment product co-created and piloted by a consortium of US based companies called the Merchant Customer Exchange (MCX).

The year also saw Apple Pay becoming a global phenomenon with the launch of Apple Pay in UK in partnership with Transport for London, providing customers in UK the ability to pay for public transportation through their

mobile phones. Apple Pay was also launched in Canada and Australia for American Express customers by the end of the year.

With Android Pay limited only to USA and Samsung Pay limited to South Korea and some parts of the USA, Apple Pay still has a head start over other 'Pay' providers.

Even with the plethora of mobile payment systems available to consumers in 2015 the average consumer is still very hesitant to take them up putting the entire mobile payment industry at the crossroad of various mobile payment systems. Also the real transaction numbers are yet to be released by the providers and the verdict is still out there in the open.

bah symenne







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Person to Person payments has been around for a long time, with PayPal being the pioneers of this industry. But 2015 saw a clear resurgence of P2P payments with a social angle built into it. With a drastic increase in smartphone usage among 'Gen X', the need to instantly transfer money to friends and family greatly increased.

The year saw PayPal going public with a current market cap of \$46B - almost twice that of the company that it split from. Google Wallet also became a P2P payment system in 2015 after Android Pay become the de-facto merchant payment app.

The year also saw a great many new social payment initiatives being introduced. Some of

the most popular social messaging platforms in the world like Snapchat, WeChat and Line started providing P2P services integrated into their very popular messaging apps.

Venmo got great coverage and saw a great increase in its usage in 2015. Facebook also launched its own P2P service using the Messenger platform easing sending and receiving money across platforms. Square also launched its own P2P social payments platform called Square Cash which was much talked about.

With more than \$13B transferred socially in 2015, the sector is warming up with more action expected in 2016.



Source: http://blog.gsmarena.com/square-cash-lets-you-send-cash-to-anyone-through-just-an-email/

US's EMV Migration

With the USA migrating to EMV in 2015, the last bastion of EMV in the developed world has been finally breached. The concept of Chip Card is still new in the US, but banks have finally woken up to the opportunities available in the mobile payments segment and started issuing EMV based Chip Cards to their customers with existing cards being reissued as Chip and PIN or Chip and Sign cards.

The migration has not been without its usual share of problems. The biggest issue seems to be the longer customer checkout time due to the card remaining dipped inside the point of sale system for the duration of the transaction. The lack of training among the retailers in the usage of Chip cards is also hurting the actual adoption and usage of Chip based cards. Many merchants are still swiping cards with Chips in them, since the acceptance systems have not changed.



Wearables

The wearables industry has had a really good year with Apple and Google at each other's throats to introduce the better smart watch. This has led to wearable devices enabling payments, with Apple allowing customers to pay for products and services using the Apple Watch, and Android starting to support NFC based payment from Android Wear devices.

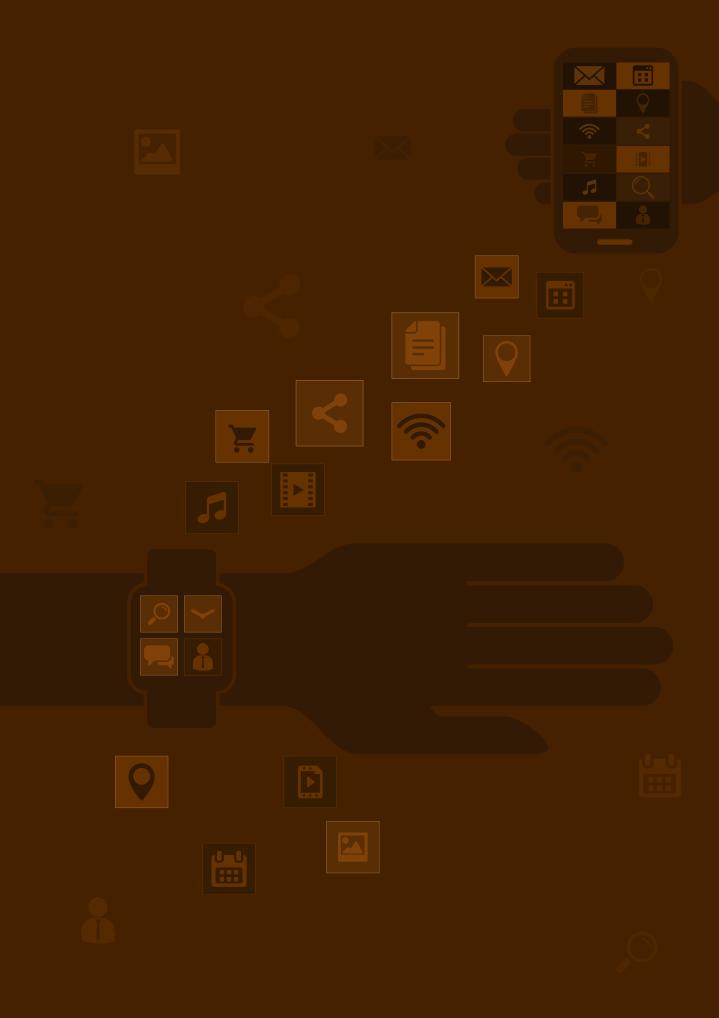
The year also saw Samsung launch its first smart watch with NFC payment capability in the form of Samsung Gear S2. Apart from the biggies, the industry also saw small time technology providers starting to provide payment services, with NFC based payments being the most loved proposition for these players. Companies like Watch2Pay piloted

successfully payments using a specially designed watch to make retail and transit payments. They have even partnered with Dubai transport authorities to allow customers to pay for the Dubai Metro with their technology.

Innovations in payments were not restricted to Smart watches, with companies like Nymi coming up with a unique wristband which allowed payment authentication using customer's heart beat. MasterCard has also partnered with specialized apparel and accessory manufacturers to allow everyday wearables like jackets, shirts, trousers, skirts, belts, rings and other accessories to make payments.



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Blockchain

Even though BitCoin, the original pioneers of Blockchain is having a rough year with Bitcoin oscillating between \$100 to around \$400, Blockchain as a technology was the most talked about technological phenomenon in 2015. It was so popular in 2015 that some of the biggest names on Wall Street, such as JP Morgan Chase invested heavily in Blockchain based startups. According to CNN Money, more than \$1B was invested in Blockchain and BitCoin related startups in 2015.

Banks have realized that technology is the future of banking and payments and Blockchain seems to have caught their fancy.

There are reports that many banks are dabbling in Blockchain technology and also the concept of shared ledgers and private ledgers. Banks are also realizing that with each breach in data from banks around the world the best way to store records and accounting is to make them public and incentivising the bearers of these ledgers.

Even though Blockchain as a technology is in its infancy, there is great potential and banks have realized this and the popularity of Blockchain is expected to increase exponentially in the coming years.

What to look for in 2016 – Convergence of Technology and User Experience

We are three week into the New Year and we have already seen some significant announcements made in the payment innovation space. MasterCard has announced a partnership with Samsung, where automated payments have been integrated into smart refrigerators, thus enabling customers to make payments directly from the device in question. Likewise, the first investment in Blockchain for 2016 has already been made.

2015 was a landmark year for technology in Payments. But many of these technologies are at crossroads with regards to consumer understanding, assimilation and ultimately adoption. But this also puts all these companies and products at a great advantage, where they can create compelling value proposition for consumers, increasing security and putting the consumer's mind to ease with respect to the adoption of these products.

User experience is expected to be at the fore in 2016, where technology companies are expected to gel ease of use, greater security, better user interface, thus creating a cohesive user experience, one in which payment is just one part of a larger consumer purchase experience.

These developments have generated a great deal of excitement for both technology enablers as well as consumers, and I personally am really excited about payments in 2016, given that I am in the thick of it!!

About the author: Harishankar or Hari as he likes to be called, is a Product Manager for mobiquity Wallet at Mahindra Comviva. He considers himself a self-made tech junkie, with a craze for the latest and greatest gadgets out there. He has more than 7 years of diverse experience ranging from Product Management, Project Management and Product Development in the domain of mobile wallets, mobile payments, e-commerce payments.





By Sandeep Kumar

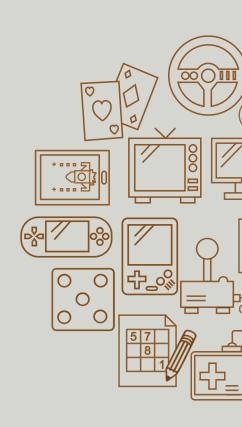
Gamification is being used across industries as diverse as consumer goods to financial services. Specifically, financial institutions and banks are adopting gamification to achieve different goals such as driving self-service, reducing opex and encouraging savings habit

THE CAME PLAN

Game Level #1

Many organizations cutting across industries have increased their spending on training, learning and other engagement programs to influence and motivate end users as well as employees. As per Gallup recent study, 70% of the employees in the US are not engaged while only 15% of employees in Germany are engaged. Also, only 29% of B2B customers are fully engaged. Moreover, most of these engagement products, or programs, are 'Function-Focused*' as opposed to 'Human-Focused*'. Function-focused systems are designed for 'getting things done' quickly, however, in a 'Human-Focused' design, the focus is on human motivation as opposed to functional efficiency. A Human-Focused design emphasizes that people are not small cogs in a big system.

Games provide the best insights into Human Focused Design. In fact, the Game industry was the first to combine Human-Focused design with Psychological motivators to create 'Game Elements' and 'Game Dynamics' to please the end user – the humans sitting in front of the gaming console.



But do games really motivate us to act in a particular way or fashion? Many of us like to think that children these days lack the work ethics, the discipline and the persistence needed to succeed in life, but put them in front of a gaming console and they will stay up late in the night just to level up their gaming character. You will probably understand their motivation only if you are a gaming fan and you've ever been caught up in the act of "Levelling Up" while enjoying your favourite game. In general, no one likes routine work that require strong work ethics, persistence and will power, but even the kids will stay up late if there's a sense of accomplishment and fun in their work.

Game Level #2

Gamification provides a framework to bring game techniques (i.e. game elements and dynamics) into non-gaming context. Its origins lie in a belief system that the dynamics and techniques of Gamification can be extended to routine real-life scenarios to create real, joyful and meaningful real life experiences. Most Games are just escapist fantasies, with no real benefits for the gamer even after they've spent hours levelling up, accumulating points and budgets etc. After completing a game, the gamer feels a sense of emptiness leading to the question - why did I play this game that means absolutely nothing to me in the real world?

But, imagine a game-life scenario (vs. a real-life scenario), where the more time you spend on the game the more productive you become in life: Wouldn't you play and enjoy all day? This is Gamification! In their Gamification 2020 report, Gartner predicts that Gamification, combined with other emerging trends will have significant impact on innovation, emergence of customer engagement platforms and Gamification of personal development etc.

Game Level #3

Unfortunately, Gamification designers think that applying game mechanics like points, badges and leader boards (PBL Fallacy) etc. is enough to create a great user experience – which is fun as well as engaging. However, Gamification is not just what game element you use in the product, but it is why, when and how these elements appear. Effective Gamification is combination of game design, game dynamics, behavioural economics, motivational psychology, UI/UX and ROI driven business implementation.



Game Level #4

Why Gamification? The customer has spoken with a leading survey showing more than enough evidence in support of gamification. In a survey conducted by Corporate Executive Board, covering 7K users and interviews conducted with hundreds of marketing executives the consumers voted for "simplicity" – i.e., the ease with which they can gather information about the product or service, trustworthiness of the information, and of course how easy it is to onboard new product or services.

For example, in the early part of the product lifecycle, gamification techniques can make it easier for new users to understand the product and keep their motivation high (using a system of rewards) and thus help in faster on-boarding.

Gamification is being used across industries as diverse as consumer goods to financial services. Specifically, financial institutions and banks are adopting gamification to achieve different goals such as driving self-service, reducing opex and encouraging savings habit. Especially in new financial product/service launches, where user's perception of trust, comfort level and anxiety play a big role in the adoption of service gamification techniques can help in reducing adoption barriers by building the comfort level necessary for increasing adoption. Growing use of internet and mobile banking is fuelling the adoption of gamification in financial services.

Here's a list of some Gamification use cases in banking and financial services industry.

Abas Bank - Shesha (quick-quick)

Abas, a South Africa bank, succeeded in engaging low-income customers in a gamified program called 'Learning by doing'. The gamified program engages customer in the form of quiz.

- a) The quiz focussed on checking account balance with an airtime prize rewarding the best answer.
- b) The game also engages and challenges the customer to check their account balance on their phone. The customers are rewarded with large cash prize.

By gamifying the self-service experience the bank was able to reduce the length of the customer queue on weekends and month-ends. It was assessed that the cost of Gamification could be covered by the amount saved because of reduced customer footfall in the branches. The balance check activity of participants increased from 0 to 54% in the first two months after completing the game and 61% six months after playing the game.



BBVA Bank - BBVA Game:

The BBVA Bank, a Spanish bank, launched 'BBVA Game' increase usage of internet banking. Customer earns point by using e-banking, which can be redeemed for gifts. This Gamification was so successful that it attracted over 100,000 registered users in the first six months. As a result, the bank encouraged more customers to use online services regularly.

DSK Bank - DSK Gameo

DSK Bank, a Bulgarian bank, launched a behavioural gamified saving process with the aim to change customer's savings habits. Using gaming principles, the application encourages the customer to set financial goals, perform certain transactions and educate themselves about new banking products. Customers are rewarded for these activities.

PNC Bank - PNC Punch the Pig

US-based PNC Bank is using gamification to drive higher investments from consumers. They have introduced the 'Punch the Pig' feature as a part of their virtual wallet. When consumers are banking online, they can "punch" a piggy bank whenever it pops up to transfer a chosen amount from their spend account to their growth account. Consumers can decide on how often the pig pops up or PNC can even surprise them by displaying the pig at random moments.

Game Level #5

The entire story of mankind can be summed in three words "Ciltius, Altius, Fortius" which in Latin means "Faster, Higher, and Stronger". At one end of the scale are the Homo Economicus who have the desire to possess wealth while at the other end of the scale are the Homo Faber who seek intrinsic fulfilment through their work. So far, Homo Economicus have dominate Homo Faber. Then there's the other segment: Home Ludens – who are interested in the rituals of play within work. Gamification brings out the Homo Ludens within us by recreating gaming scenarios for routine work. Because as James P. Carse said, "Life is nothing else than an infinite game"

Unlock next Level: Send email to sandeep.kumar4@mahindracomviva.com

Human Focused Design This term is first coined by Yu-Kai-Chou.



About the author: Sandeep Kumar has over 11 years of experience in Core Banking and Payments. At Mahindra Comviva, he is serving as product manager in product management group for the mobile finance solutions portfolio. He leads product management for mobiquity® Money.



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