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Operation and Information Technology

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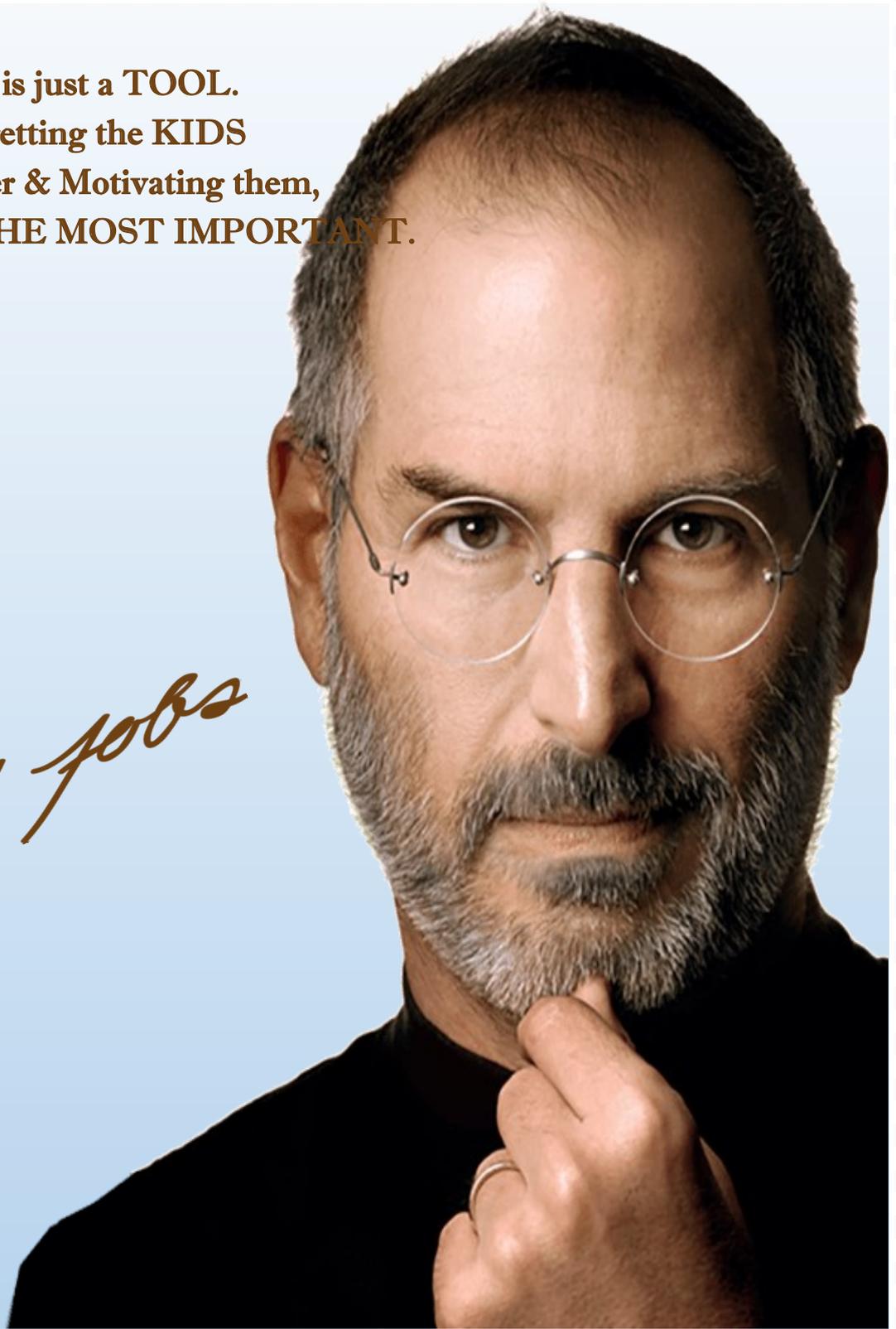


Technology can become the “WINGS” that will allow the Educational World to FLY Farther & Faster than ever before - IF WE WILL ALLOW IT.

- Jenny Arledge

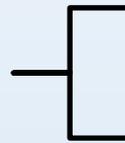
Technology is just a TOOL.
In terms of getting the KIDS
Working Together & Motivating them,
THE TEACHER IS THE MOST IMPORTANT.

Steven Jobs

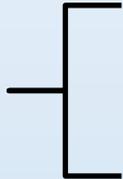




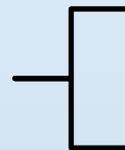
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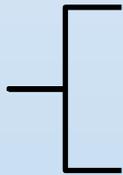
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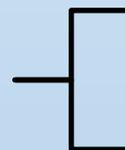
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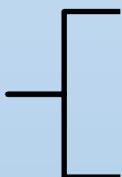
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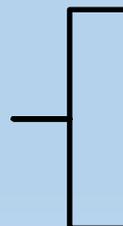
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INTRODUCING INDIA KA SMARTPHONE JioPhone



By - Devi Prasad Mohapatra

The JIO Phone brings free voice calls to feature phones. With this, the entire Indian mobile user base have the option to never recharge and pay for making voice calls.

With Android gaining focus in the Indian mobile market, it was unlikely that a feature phone from Reliance JIO could be disruptive. While the incumbents kept repeating similar strategies to squeeze profits, they ignored the elephant in the room — 50 crore feature phone users with close to zero disposable income. While Telco's kept pushing for 4G adoption through flashy advertisements, and handset makers offered substandard budget Android smartphones, nothing changed the ground reality. Mobile data continues to be relatively expensive, people still complain about mobile internet speeds and affordable Android smartphones remain unreliable.

The JIO Phone with JIO plans could make incumbents go back to the drawing board. Here are nine ways how Reliance JIO could disrupt the market.



◆ **Free Calls Always:**

The JIO Phone brings free voice calls to feature phones. With this, the entire Indian mobile user base have the option to never recharge and pay for making voice calls.

◆ **50 Crore Additional Mobile Data users:**

While the JIO Phone will provide access to JIO apps with unlimited data, people will get hooked to using Internet on their phones. This means, JIO Phone has the potential to add up to 50 crore users to the World Wide Web.

◆ **'Smart' but Not a Smartphone:**

JIO Phone could add a new segment in the handset market altogether — 4G VOLTE-enabled feature phones which offers basic smartphone features. Domestic handset makers can eye this segment and innovate to bring down costs further.

◆ **Keep Check on Mobile Bills:**

With JIO setting a price benchmark for mobile bills, rival telco's would introduce aggressively priced plans to counter JIO. Sachets plans for as little as Rs 23 will make usage more affordable.

◆ **More Pressure for Telco Rivals:**

While Telco's might ignore feature phone users and push them to adopt 4G, the introduction of JIO Mobile means rival Telco's could end up losing their 2G subscriber base significantly, thus impacting its overall numbers. Note that these 2G subscribers using feature phone are the ones who are actually paying for making voice calls and SMS.

◆ **More Video Consumption:**

With unlimited data, video consumption in India is poised to grow. Free access to apps like JIO Cinema, JIO TV will make feature phone users watch more videos.

◆ **Mass Migration from 2G to 4G VOLTE:**

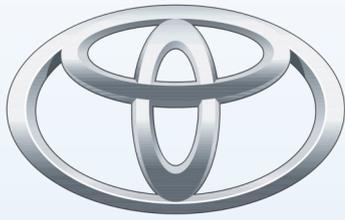
JIO Phone promises to migrate 2G subscribers (which are the majority in India) to 4G VOLTE at one go. As noted by RIL Chairman Mukesh Ambani, soon there could be more 4G subscribers in India than 2G users.

◆ **Disrupt DTH Service Providers:**

While it may be too early to comment, the JIO Phone could challenge DTH players as well. The JIO Phone even aims to make old CRT TVs smart. User can connect their JIO Phone to TVs to watch live TV through app by paying Rs 309 per month additionally.

◆ **Cheap Android Phones Need to Get Better:**

Budget Android smartphones under Rs 5,000 need to get better and more reliable to face the JIO Phone heat. The JIO Phone appears to offer better value for money for people with limited usage and could possibly worry domestic handset players.



TOYOTA CARS TO PREDICT HEART ATTACK

By - Chinmay Rout

A heart attack or diabetic blackout can have especially deadly consequences for drivers when they cause car crashes. Toyota researchers hope to change that grim equation by studying how wearable devices could help smart cars possibly save lives by predicting medical emergencies ahead of time.

The day when smart cars—either manually driven or self-driven—will watch out for the health of their drivers remains some ways off into the future. But Toyota’s Collaborative Safety Research Centre think it’s worth investing in the technology and scientific research needed to make that future happen today through a \$35-million, five-year effort that will last until 2021. Toyota researchers have already begun working with universities on seeing if wearables such as smartwatches could someday prove as accurate as clinical-grade medical equipment in monitoring signs of impending heart attacks or blackouts due to low blood sugar.



“We looked at what conditions might have contributed to crashes from an emergency medical standpoint, and also looked at signals that may be measured through wearables,” says Chuck Gulash, director of Toyota’s Collaborative Safety Research Centre.

This may not sound like a huge deal when just 1.3 percent of all passenger car crashes in the National Motor Vehicle Crash Causation Survey were reportedly caused by medical emergencies, according to a 2009 study by the National Highway Traffic Safety Administration. But that still translates into medical conditions being at least partially responsible for more than 26,000 crashes, because the overall survey included more than 2 million car crashes.

Heart attacks accounted for about 11 percent of the crashes caused by medical conditions, or approximately 2,680 crashes. Diabetic blackouts accounted for a significantly larger proportion of such crashes at 20 percent, or approximately 5,200 crashes. Toyota researchers chose to focus on those two conditions as opposed to medical emergencies that caused even more crashes—such as seizures—because they believe that wearable technologies can accurately detect and predict such conditions within the near future.

Medical emergencies involving heart attacks or diabetes are also likely to become

One part of Toyota's effort involves working with the University of Michigan to create an in-car system that could help potentially predict heart attacks in drivers. The immediate goal of this project involves establishing a "gold standard" and scientific baseline for accurately identifying heart attacks based on electrocardiography (ECG) signals. Researchers are first using high-grade medical equipment in a clinical setting to collect data on what ECG signals best predict heart attacks. Figuring this out is a necessary step even before future generations of smart-watches or other wearables achieve the medical-grade accuracy needed to possibly predict heart attacks.

"For the level of accuracy we need to detect and predict heart conditions, we are still not there with the wearables," says Pujitha Gunaratne, principal engineer at Toyota's Collaborative Safety Research Centre.

Another important part of Toyota's research with the University of Michigan involves filtering out the ECG signals from the expected background noise of a moving car. That's not a problem researcher's encounter in the generally isolated conditions of a lab setting, but wearable devices and their software will need to be able to function even in the noisier conditions of a vehicle on the road. On the software side, researchers aim to harness the power of machine learning algorithms—a popular artificial intelligence (AI) technique that can learn to identify relevant patterns in data—to help filter out noise and home in on the relevant ECG signals. "We are looking into that broad spectrum of noisy signals and finding the AI machine learning algorithms to purify that and generate noise models that will help us detect these heart conditions and possibly predict them ahead of time," Gunaratne explains.

Toyota is applying a similar philosophy to tackling the issue of diabetic blackouts among drivers. Toyota researchers are working with the University of Nebraska on a separate project that examines how different glucose (blood sugar) levels affect the behaviour and safety of drivers.

Drivers should not expect their cars to predict heart attacks by the time Toyota's Collaborative Safety Research Centre wraps up its current five-year project in 2021. But success in establishing the baselines for monitoring conditions such as heart attacks and diabetes would set the stage for potentially testing out wearable hardware and software configurations with volunteer drivers. Toyota plans to share the study results with the rest of the automotive industry and the broader research community rather than sit on the study results as proprietary knowledge.

"If we don't get working on this, when better consumer-grade wearables or algorithms are available in the 2020s, it's just pushing out this fundamental research down the road."

FITNESS TRACKER TECHNOLOGY WEARABLE DEVICE

By - Jayshree Mohanty



*W*earable devices are currently at the heart of just about every discussion related to the Internet of Things. The requirement for self-health monitoring and preventive medicine is increasing due to the projected dramatic increase in the number of elderly people until 2020. Developed technologies are truly able to reduce the overall costs for prevention and monitoring. This is possible by constantly monitoring health indicators in various areas, and in particular, wearable devices are considered to carry this task out. These wearable devices and mobile apps now have been integrated with telemedicine and tele health efficiently, to structure the medical Internet of Things. This paper reviews wearable health care devices both in scientific papers and commercial efforts.

Wearable, with the help of improved technology have been developed greatly and are considered reliable tools for long-term health monitoring systems. These are applied in the observation of a large variety of health monitoring indicators in the environment, vital signs, and fitness.

Wearable devices are now used for a wide range of healthcare observation. One of the most important elements essential in data collection is the sensor. During recent years with improvement in semiconductor technology, sensors have made investigation of a full range of parameters closer to realization.

The wearable device may be a health tracker or activity tracker.

BEST FITNESS TRACKER 2017:

- ◆ Fit bit Charge 2
- ◆ Misfit Ray
- ◆ Garmin Vivo smart HR+
- ◆ Samsung Gear Fit2
- ◆ TomTom Touch
- ◆ Xiao MI Band 2



How a health tracker or wearable device works

Your activity tracker knows a lot about you and your daily habits, but how much do you know about your activity tracker:

Walk, run, jog, sit, sleep or dance all night and your tracker will dutifully record every move you make. How does it do it? All trackers rely on the same basic core technology—an accelerometer, which measures acceleration, which is the intensity and direction of movement.

If we only moved in one direction, tracking activity would be pretty simple, but that's not the case. We live in three-dimensions: We move forward and backward, left and right, and up and down. (In tech talk, these three directions are referred to as X, Y and Z axis respectively.) Unlike old school pedometers that were designed to just track forward motion—that is, they counted steps and distance in a linear path—any modern tracker worth its salt captures data from all three axes simultaneously.

The Three Benefits of Using a Fitness Tracker

Firstly, the greatest advantage of using this type of technology in exercise is that you can focus on your exercise without having to track and monitor your heart rate intermittently during exercise. You no longer need a watch, chart or other measuring tools that would traditionally be used to measure fitness.

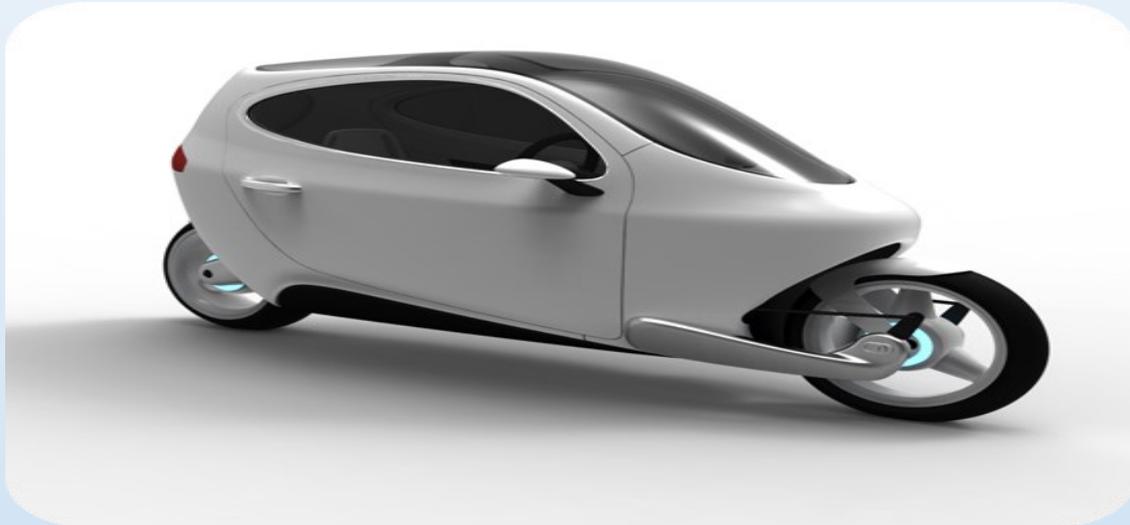
Secondly, whether you are running, swimming or interval training, a heart rate monitor will help you train more effectively and find that sweet spot for your target training zone. More importantly, especially for people with health issues, it will prevent you from over-training. A good fitness monitor should also be able to track your fitness over a period of time. This will help you better determine whether you are making progress or if you should adapt your exercise routine to increase your fitness level. The results should show an increase in your stamina, ability to intensify your workouts as well as a faster return to a resting heart rate.

Thirdly, wearing a fitness tracker with heart rate monitor will keep you honest. With so much data at a push of a button, you will know whether your efforts in a workout session have

Now a day technology not only accessible it also can be wearable which gives right direction how to maintain healthy life.

GYRO STABILIZED TWO-WHEELED FUTURE OF TRANSPORTATION

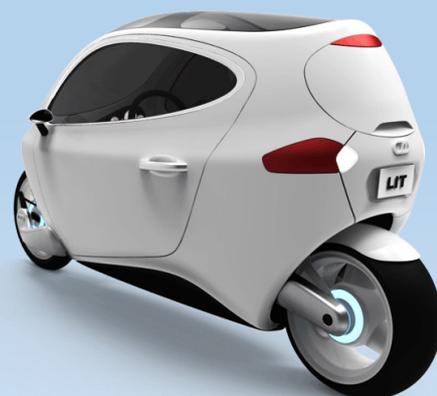
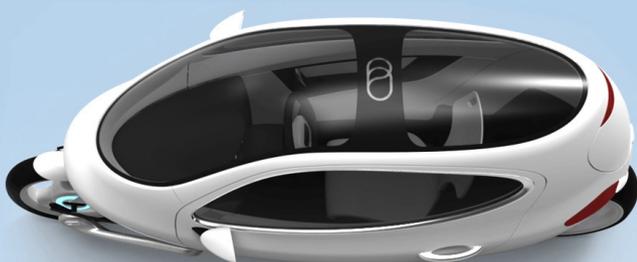
By - Abhisek Routray



Lit Motors aims for “C1”, the first prototype from San Francisco-based. It’s a fully electric, fully enclosed two-wheeled two-seater. In the production version, the C1 will come complete with airbags, a seatbelt and a smart phone connected infotainment system.

Underneath the passenger compartment are two gyroscopes that keep the C1 constantly upright. That means it stays standing while stopped and can pirouette through traffic like the best from Honda, Yamaha and Ducati. According to Lit, a small elephant would have to hit it broadside to put the C1 on the ground.

The C1 prototype will be all-wheel-drive with power provided by a hub-mounted electric motor good for 110 horsepower. Weighing in at between 800 and 900 pounds in production spec, Lit estimates a zero-to-60-mph time of around six seconds, with a 120-mph top speed and a range of 220 miles between charges to the 8 kWh lithium-ion battery pack mounted in the floor. Charge times vary depending on your outlet, with a household standard 120V juicing the C1 up in around 6 hours or around 4 hours using the 220V outlet powering your dryer.



C1 measuring around 115 inches long and 40 inches wide, the C1 feels larger on the inside than its dimensions suggest. While the C1 concept Lit Motors has been showing packs seating for two, the rear throne is more of glorified shelf than a proper bucket. In the prototype, a series of computers and controls occupy the rear passenger area, all of which will be mounted underneath the floor panel once production begins.

The rough hand-bent aluminium and steel body panels and piecemeal chassis framing are simply a way to test all the various systems, motors, gyros and suspension components. Being a prototype, battery capacity on this lone tester is currently capped at 3kWh, with the rear motor outputting around 75 hp. Current weight, sans windshield, side windows and a glass panel that will make up the roof, will be around 800 to 900 pounds in final form, but currently, the stripped-down prototype is tipping the scales at around 650 pounds, or close to 800 pounds with driver.

GYROSCOPIC TRANSPORTATION OF THE FUTURE





By - Jyoti Prakash Swain

What is a Mobile Wallet

*M*obile wallets are essentially digital versions of traditional wallets that someone would carry in their pocket. While there are many variations, usually they can hold digital information about credit and debit cards for making payments, store coupons and loyalty programs, specific information about personal identity and more.

Many companies are jumping into the mobile payments space— on both the paying and receiving sides of the transaction—and new innovators are continuously changing the industry. In the U.S., they include companies such as Google, Amazon, PayPal, Square, and Apple. Internationally, still more companies are developing and launching new technologies in this

Types of mobile wallets

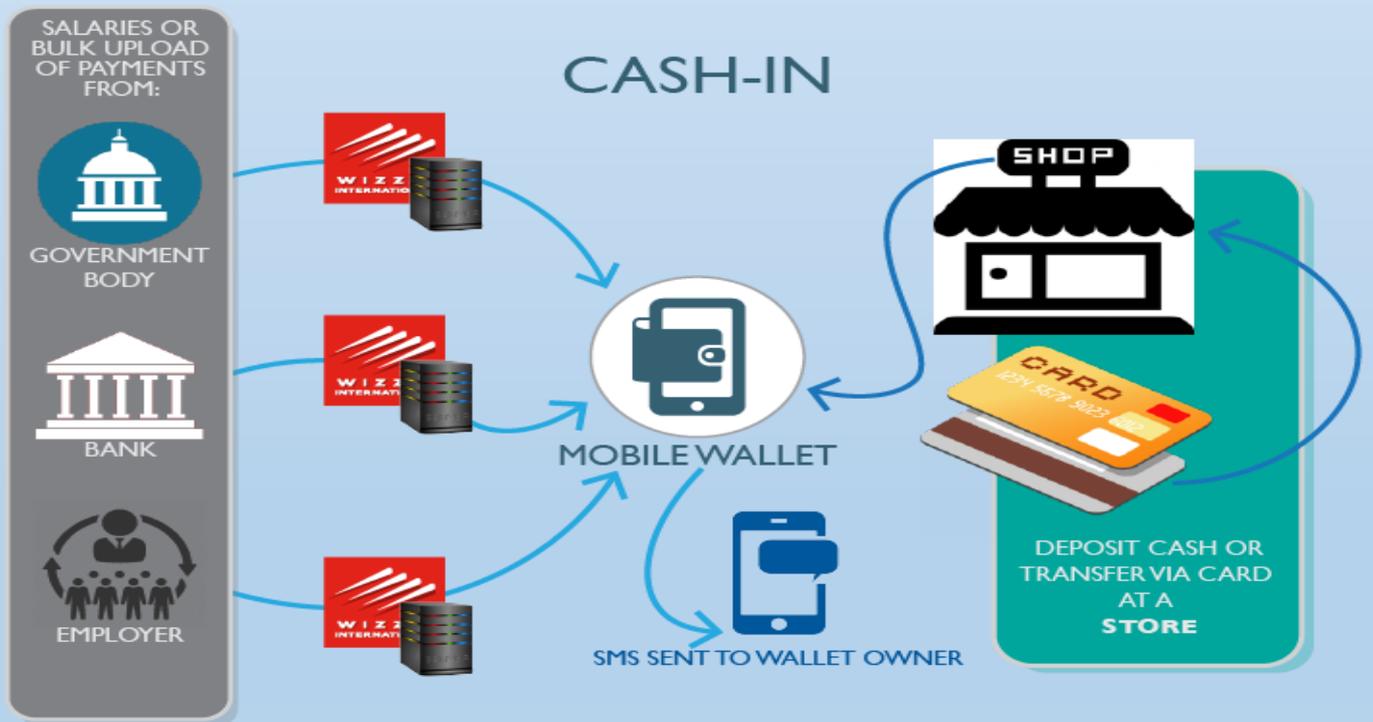
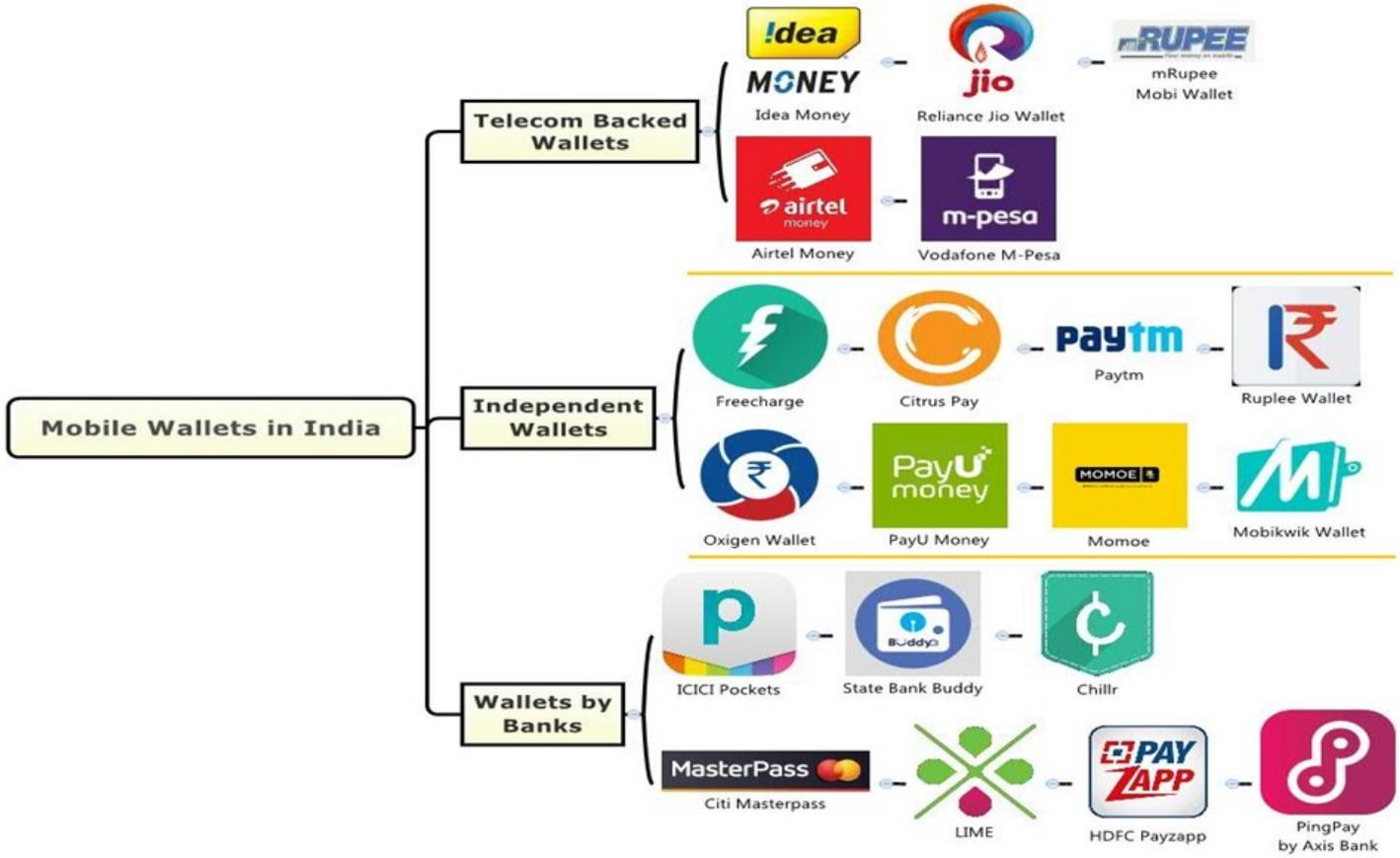
In present time in India four types of mobile wallets are popular. These are open, semi-open, semi-closed and closed.

Open mobile wallet: This wallet gives you facilities of payment for any product or service. In this wallet, you can do banking, money transfer also.

Semi open mobile wallet: In this mobile wallet you can do money transaction with those businessmen or shopkeeper only who has contract with particular wallet service provider. Through this wallet, you can't withdrawal money or get your money back. In this wallet, you can spend money only that much you loaded in that. Airtel money is one of the example of it.

Closed mobile wallet: This is very popular wallet service. In this wallet if order is cancelled, then your money will be locked to businessmen or shopkeeper. You can't get your money back, you have to buy some other thing instead of your cancelled order.

DISTRIBUTION OF MOBILE WALLET IN INDIA





USEFUL BUT UNKNOWN APPS

By - Asutosh Mohanty

DROPBOX

Dropbox provides services through its app as well as with its website. It allows its users to store their photos, documents, videos, pdfs, and other files easily on the app. Equipped with easy sharing of large files and email attachments it is one of the best storage and backup app. It stores the data on the cloud and allows the user to access them easily. The app is easy to use and contemplate with.



PREZI



Prezi

Prezi is rather a beautiful depiction of the age-old routine presentations and provides the classic power point presentations and innovative, and more interactive form. MBA and presentations go hand in hand. This superb app will let you create professional-quality presentations on the go.

Moreover, you can sync it with your other devices too to get all your work on one platform. So, be it for your classes, a seminar or even a business proposal, you will never have to showcase a half-baked presentation.

LEARNWISE

LearnWISE™ – is a leading digital learning platform brought to you by Wadhvani Foundation. This application is for institutes, faculty, students and budding entrepreneurs to organize, learn, connect and grow their skills from anywhere.

LearnWiSE has been adopted by students and faculty from various institutes around the world, including India, Indonesia, Malaysia, Philippines, East Africa and Latin America.

learnWISE

INSHORTS



Inshorts is a news app that selects latest and best news from multiple national and international sources and summarizes them to present in a short and crisp 60 words or less format, personalized for you, in both, English or Hindi. All summarized stories contain only headlines and facts, no opinions, to help you stay informed of the current affairs. Whether it's the latest government policies or shakeups in Bollywood, we get them covered and delivered super fast.

LINKEDIN

It is a sure a vital app for all the professionals and graduates. It basically establishes a connection between people in the professional world. Builds and nurtures a professional network and allows you to stay updated with the latest business and industry happenings. A LinkedIn profile is more like a professional resume and tells your story to the world, allowing you to develop as a brand. It facilitates sharing of articles, to establish our self as a leader and widens your approach and contacts with other professionals.



DUNNO



A research it later application which helps you wjot down things you want to know or research, but don't have time to when it crosses your mind. It helps keep a record of all our 'brain slaps'.

CAMSCANNER

Cams scanner is an app that uses the phone camera to scan an image and convert it into a PDF to easily share it over mail or text.



PHARMACEUTICAL OPERATIONMANAGEMENT: MANUFACTURING FOR COMPETITIVE ADVANTAGE

By - Abhisek Rath



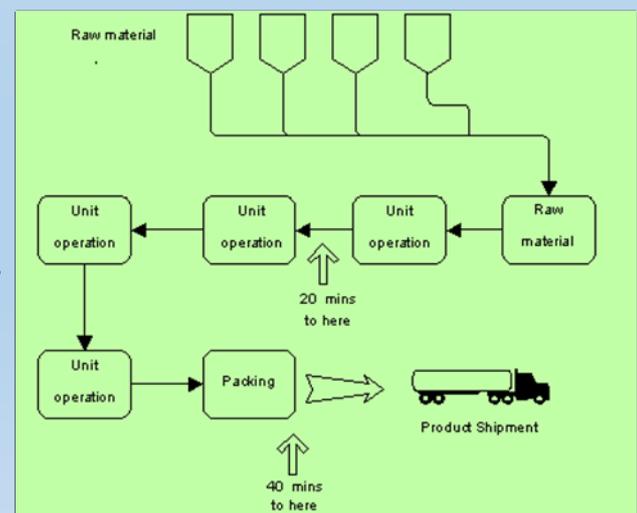
A productivity conscious organization has a distinct competitive advantage. Productivity should be viewed as an integration of knowledge, leadership and silo-less synergy. Successful productivity efforts require:

- Transformational leadership that can lead the implementation of a comprehensive vision.
- An improvement infrastructure that can support the vision and implementation.
- Successful adoption of the Six Sigma methodology.
- A learning organization.

Six Sigma methodology is being adopted in the Pharmaceutical sector to enhance productivity, reduce waste and cut cost. Six-Sigma is a five phase improvement cycle the five phases are DMAIC, which stands for: Define, Measure, Analyse, Improve and Control. In this excerpt an industrial case study is presented to exemplify use of Six Sigma in Pharmaceutical manufacturing.

Productivity Improvement Case Study

The operations involved in the pharmaceutical production process are: raw material storage, raw material treatment, three unit operations, packing and shipment.



An improvement opportunity was identified based on external benchmarking with input from external consultants. The quality, organizational, technological, and financial risk was minimal. A well thought out cost justification was prepared for this case study. Inevitably, some assumptions about performance enhancement will have to be made to arrive at an estimate of savings. One possibility is if the objective is to improve the performance of a large-scale manufacturing plant, an estimate of the ultimate performance could be obtained by applying the strategy to a pilot scale plant. Assuming the availability of a pilot plant, this does not overcome the necessity for engineering work and hardware and software costs. Thus while it would provide confidence in the likely applicability of the method to large scale, it would not satisfy the fundamental objective of assessing likely savings before purchasing and implementing the system. The major benefit gained by adopting this approach would be minimizing the risk of lost production, but the question of scale on system performance is a major issue. Under these circumstances the more presumptive approach of cost benefit analysis must be applied.

The strategy for cost benefit analysis can be applied to process improvements achieved through changes in operating procedures or plant equipment modifications. The emphasis in this section is on operating policy improvement through improved process control. Cost benefit analysis is possibly one of the most difficult areas to be considered in the development of a control system for process improvement. Here the term 'control system' is used in its widest sense as referring to any technology that delivers improvement in operation.

Measure

When considering the implementation of control scheme modifications, it is essential to establish a base case against which improved operation can be assessed. This involves building a historical record of operation prior to improvements and comparing this against resulting performance. In doing so it is vital to agree on the method of quantifying performance at the outset to avoid conflict in interpretation of the future results. Historical process operating records usually provide the necessary information. The technical requirements for a particular control system improvement can generally be ascertained prior to purchase by using a combination of past experience and process tests.

An approach to cost benefit analysis that has been widely applied in the chemical industry to justify process control system investment, is presented by Anderson (1996) and Anderson and Brisk (1992). The basic assumption of the procedure is that improvements in control will at least halve the existing variance of the output. This is a tried and tested statistic and the extent to which it can be exceeded obviously depends upon the existing quality of control; where little attention has been paid to control it is likely to be an underestimate. On well controlled plants, this level of reduction of variance may require the implementation of some complex control schemes as described in Chapters 3 and 6. In the chemical process industries, the average improvements from implementing various levels of control have been estimated.

MANUFACTURING

We improve shop-floor production efficiency through lean manufacturing methods. For instance, POBOS allows us to benchmark manufacturing costs and productivity to comparable peers for many different areas, including multiple fill/finish technologies, synthesis of active pharmaceutical ingredients (API), and production of biologics.

We take the customer's perspective to develop an end-to-end view of the supply chain, working with companies to define strategy, redesign distribution networks, benchmark performance, identify problems, improve service levels, manage risk, reduce backorders, and lower inventory.

We have a thorough understanding of external suppliers and contract management organizations (CMOs), including their capabilities and typical costs. Through our market knowledge and experience, we have helped clients capture both immediate and sustainable value in multiple projects. Our approach entails working with clients to create a comprehensive external supply strategy, segment suppliers, develop metrics for vendor performance, and establish clear management guidelines to optimize value from third-party suppliers.

QUALITY, COMPLIANCE, AND REMEDIATION

In a world of increasing complexity and regulation, quality is an often untapped source of competitive advantage. Superior quality and flawless compliance can help companies dramatically reduce quality-related costs, improve their brand perception, and improve revenues. We help clients achieve significant and sustainable improvement in their quality performance, customer satisfaction, and regulatory compliance. Our areas of quality expertise include development of quality and compliance strategies, quality performance and cost benchmarking, optimizing the quality management system (QMS), delivering compliance and remediation services, fostering a quality culture.

NETWORK STRATEGY

We help clients determine if their networks are aligned with their overall company strategy and goals. We also help clients capture value by optimizing global plant configurations, identifying opportunities to shift production to low-cost countries, assisting with plant closures or transfer of operations, ramping up production at new sites, and selecting locations for greenfield projects.

PRODUCT DEVELOPMENT AND LIFECYCLE STRATEGY

We support clients throughout the end-to-end product lifecycle. Our areas of expertise include enhancing operations during the development of new product and platform strategies, conducting diagnostics to determine readiness for launch and acceleration, developing strategies for mature products, and optimizing costs. For medical product companies, we also offer tools that enhance quality, improve manufacturing processes, and increase their products' appeal to customers.

FEATURED CAPABILITIES

We have developed a set of tools and databases specifically for pharmaceutical operations, focusing on benchmarks. For instance, POBOS benchmarks manufacturing cost, productivity, supply chain, purchasing and quality performance across more than 70 pharmaceutical, biotech and medical device companies. We also have procurement benchmarking tools with data for more than 400 companies, and a plant networks database for the top 30 pharmaceutical companies.



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