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MOBILE WILL RULE THE POST-COVID ERA

The smartphone will unleash digital transformation

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Contents

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How will we handle the next pandemic?

"

Which new technologies will boom?

"

Sometime in the future, facial recognition systems across airports and other public places will report a sudden spike in people suddenly sneezing or coughing. Based on that an Artificial Intelligence system will personally alert every such mobile user and also warn the healthcare industry. Based on the change in patient symptoms across the world, governments will be alerted that a global pandemic is on the way. AI will check the geographical densities of cases and recommend a lockdown timetable for each and every part of the world. Drones and driverless cars will press into action to ensure essential services and supplies. The global network of IoT (Internet of Things) devices will give real-time information on the status of goods, supplies and movement of humans. AI will track everything at a micro and macro level modifying its recommendations repeatedly. When the curve has been flattened, an AI timetable will bring the world back to normal.

Far-fetched? Science fiction? Utopia? Dystopia? It's difficult to tell, but both lockdowns and contact tracing have already become a part of our vocabulary. Most tech already exist to make the above a reality. It always needs a trigger and once any tech gets its foot in the door, it usually enters to take over the house.9/11 made the surveillance state a reality. The COVID-19 crisis will lead to something which will be only clear in the years to come. For example if someone came out with a swanky transparent hygienic Bluetooth mask, that might as well become compulsory at airports, train-bus stations and large gatherings.

After the financial crisis of 2007-08, the following were launched in 2009-10: WhatsApp, Instagram, Uber, Ola, Paytm, Xiaomi, Vivo, Venmo, Slack, Square, Pinterest, WeWork, Snapdeal, GoFundMe etc. The current crisis may also see a spurt of startups getting into healthcare, contact tracing, government tracking and AI. World War II led to advances in cryptography, computing, CDMA, rocketry (which led to NASA, satellites, GPS, satellite TV etc), jet planes, nuclear energy… Every global tragedy leads to some sort of technological acceleration. One can only guess as to what companies and tech will start coming out from 2021-22 onward. The stock market has always returned stronger after every recession and it won't be different this time.

That's at the global level. When you break it down, some countries will win, others will lose. Some industries will flourish, others won't. Some technologies will rule, others die out. New industries and tech will be created from scratch. We have already entered a new era. Now let's watch it pan out!

Sunil Rajguru

RISE OF THE MOBILE ECOSYSTEM

If the 2010s was the decade of the smartphone, then the 2020s will be the one where mobile apps will be taken to the next level. The mobile is already an extension of your personality and that will only be cemented in the post-Covid world

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I n the 1980s, the desktop exceeded mainframe sales and later the laptop co-existed with the desktop. However if there's one device that could theoretically put every other device out of business, then it's the smartphone. As long as you have all the apps, all the bandwidth and the cloud, then you don't really need anything else. The mobile can really be the one device that can replace all other devices. Imagine a world with just screens, input devices and your personal smartphone which had all the power you need and you could take it where you want and use that power wherever. However, we are getting a bit ahead of ourselves. The COVID-19 pandemic crisis and subsequent lockdown has already changed our way of life and the way we use technology. Certain long-trend terms of the pre-Covid world are getting cemented and new ones are being created.

Mobile workforce will increase: Sometime back the mobile workforce crossed 1 billion and with the way it's going, 2 billion could come sooner than you think thanks to the recent tech acceleration. More and more tasks can be done on the mobile and it is being made secure from the company point of view.

While it started with official mail and then became indispensable for agents and courier-delivery boys, that's just the beginning and soon almost every profession will be able to complete many of their tasks on the mobile. A point to be noted is that while the desktop and laptop did not really reach the lower classes or rural masses, the smartphone did. Rural India is the next big growth story.

Mobile apps will mushroom: The Corona crisis is a strange thing. While some industries are in recession, others are seeing a boom. One such is the mobile app industry which is seeing more downloads and more app makers are scrambling to meet the need of the all those jumping on the bandwagon. If anything can be done on the desktop or laptop, it will be done on the smartphone. That includes both work apps and those for leisure like gaming. Artificial

Intelligence is also being leveraged big time in the apps that are on their way.

Contact tracing gets a foot in the door:

Everyone knew that the mobile devices could be used to track people and governments were trying to leverage that to their advantage but there were too many privacy concerns. However it takes just a good crisis to get that foot in the door. Contact tracing is the latest and now private citizens will finally be tracked. Israel mastered this and used mobile GPS information of critical patients to find out where they were and send alerts to those mobiles that were in proximity. Even in India we have the Aarogya Setu App. Expect this to be used for more things in the future. Your mobile is now your I-card.

Collaboration will be popular on mobile too: Zoom was launched in 2011 and only in 2020 it became such a rage. Soon other collaboration platforms followed. People realize that a lot of

international, domestic and local travel is not necessary. Videoconferencing and secure and seamless file sharing tools can solve a lot of problems. And what can be done on the desktop/laptop can eventually be done on the mobile. It's no wonder that WhatsApp upped the video call capacity from 4 to 8,cosy for most internal meetings.

Digital wallet and cryptocurrency: In a no touch

world people are scared to exchange notes and coins. That can't happen with digital money. That got a fillip in India after the demonetization of 2016 and globally will get now. In the long run people may also explore cryptocurrencies. Digital cash can empower the lower classes that may not have access to other channels but have mobiles.

5G/successor technology will be the kill shot:

1G was calls. 2G was also SMSes. 3G was Internet. 4G supersized it all and we got the consumer Internet revolution. 5G will not be limited to mobiles. It will power smart homes, smart cars, smart factories and eventually smart cities: One upper estimate puts the number of

IoT (Internet of Things) devices at 500 billion by 2030. That ecosystem will be ruled by the mobile and we can only imagine what all that will encompass. The Age of the Mobile has already begun.
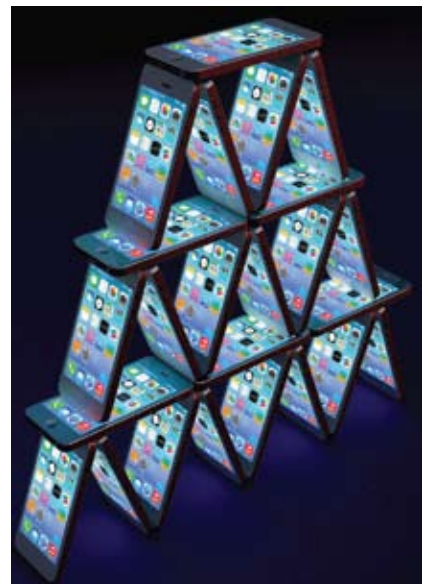
COVID-19 RENEWS FOCUS ON BETTER & SECURE MOBILITY MANAGEMENT STRATEGY

Offering people the flexibility to work from anywhere, any time, and use their own devices has exposed businesses to a much bigger Mobility Management problem than it may seem

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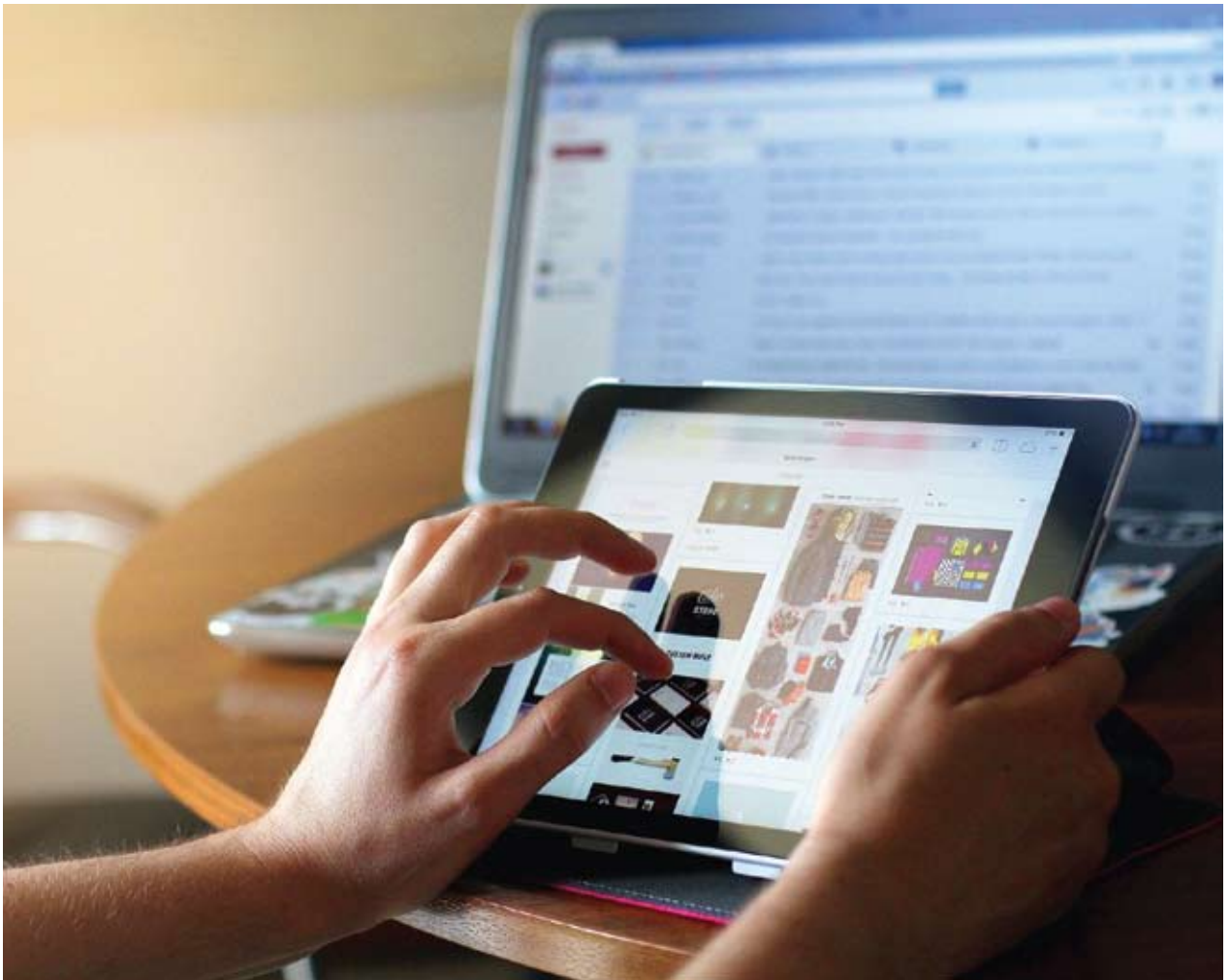
The COVID-19 crisis has brought life and work to a screeching halt in its wake, but businesses managed to stay afloat, thanks to a plethora of smart devices and digital tools at their disposal.

Cloud and Mobile technologies have enabled people to work anywhere, anytime and from any device of their choice. But they have also exposed organizations to a problem which is far more complex than it may appear.

Managing a fleet of corporate-owned and employee-owned mobile devices and securing business data on those devices has never been an easy task for businesses anyway. But with Bring Your Own Device (BYOD) and the Consumerization of IT, businesses now have been fighting two battles at the same time. The influx of user-friendly consumer devices and applications into the corporate network have made it difficult for businesses to protect the employees from malicious attacks and prevent sensitive business data from falling into the wrong hands. The sudden switch to 'Remote Work' during the COVID-19 crisis has just added to the woes.

The crisis has demonstrated the importance of always-on application availability as much of the global workforce continues to work from home, said Edgar Dias, MD, F5 Networks, India. "Businesses have seen the urgent need to accelerate their digital transformation efforts to scale capacity for remote access and availability of their business applications without compromising on performance and security. This trend will likely continue through the post-pandemic period," said he.

Ananthakrishnan Vaidyanathan, Product Manager, ManageEngine said, "People working from home and accessing corporate data from unsecured networks posed a major challenge for the businesses in terms of managing the access from those remote devices. Hence, it has become crucial for the IT administrators to ensure that all the mobile devices get updated and patched regularly, and data on those devices remain secure and protected."

Secure mobile workforce with EMM

Enterprise mobility management (EMM) solutions and practices, however, have helped them to securely manage those devices and prevent any unauthorized access to business applications and business data on those mobile devices.

EMM encompasses a range of solutions which can be broadly segregated into three categories:

1. Mobile device management (MDM)

MDM gives organizations the ability to remotely control, encrypt, and enforce policies on mobile devices. It can be used to wipe all apps and data from the lost or stolen devices.

2. Mobile application management (MAM)

MAM gives organizations the ability to manage mobile applications, including deploying and updating them, applying security policies.

3. Mobile information management (MIM)

MIM gives organizations the ability to manage and secure the sensitive, and business-critical data on mobile devices.

EMM solutions encapsulate various aspects of enterprise mobility management starting from managing mobile devices and applications, to managing content, and security part of it as well. The EMM needs also may vary from business to business, depending on specific business needs. Hence, they need to decide which of these elements or areas deserve better attention.

Secure endpoints: Is UEM the smarter choice?

Many businesses today feel that EMM solutions are not enough when it comes to endpoint management. For example, mobile endpoints and IoT endpoints are completely different and need different forms of security and management altogether.

Unified endpoint management (UEM) takes a more holistic and cohesive approach to the endpoint management issue, by helping businesses manage the security, compliance, productivity, and resource usage of all their endpoints, irrespective of the device type (laptops, tablets, mobiles, wearables, IoT-enabled devices). It supports all major OS types as well. UEM, used in combination with cognitive insights and analytics can deliver unprecedented endpoint management capabilities to IT admins.

Many UEM solutions offer users automated enrollment, pre-configuration, and retirement for the devices and personalization and dynamic policy configuration across virtual and physical endpoints as well- which make it a more viable option for endpoint management.

Apart from the simplifying device management for the IT admins, UEM makes it easy for the employees to access any content from anywhere, anytime and use any device of their choice to get their work done.

APPS REMAIN RESILIENT DURING THE PANDEMIC

While the COVID-19 crisis and subsequent lockdown have shaken the global economy to the core and almost every industry suffers, healthcare and mobile apps with the use of AI show great promise

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We have been under lockdown for about 2 months now. During this period, many things have changed. We are more careful about self-hygiene: We are sanitizing ourselves and our devices. We are having more and more apps installed. From games to collaboration to contact tracing, the way we use our mobile is seeing a sea change.

According to a Adjust'sGlobal App Trends 2020 report, during the last week of March, there was a 132% increase in the number of installs compared to last year. Gaming apps saw a 47% increase in sessions and 75% increase in installs in Q1 2020 compared to Q1 2019.

The business apps have seen a huge rise in sessions up 105% compared to Q1 2019, and installs are up by 70%, as the majority of employees now work remotely.

The app development market growth

Many kinds of apps are developed to make the everyday operations of the users at ease and keep them entertained in this quarantine. Many social media apps, delivery apps, healthcare apps, education apps and much more are developed to make the work easier for people in this lockdown situation. Even the government has various mobile apps that help people out during these difficult

Gaming installs, Q1 2019 vs. 2020

Source: Adjust — App Trends 2020

times, like the BHIM or UMANG apps or even the AarogyaSetu Mobile App to track COVID-19 spread.

The education industry is keeping up with the teaching and learning sessions for the students in this period of time. With the schools and other educational institutions closed, the e-learning apps are surely shining.

According to the sources from Techcrunch.com, worldwide consumer spending in mobile apps is projected to reach $171 billion by 2024, which is more than double the $85 billion from 2019. This total, however, is about $3 billion (or 2%) less than the forecast the firm had released prior to the COVID-19 outbreak. Still, it's notable that even the slowest-growing regions on both app stores, Apple's App Store and Google Play, will see revenue that's over 80% higher than their 2019 levels by the year 2024.

According to a report by Store Intelligence Data, despite the economic downturn resulting from COVID-19, the mobile app spending worldwide will continue to grow and the worldwide consumer spending in mobile apps is projected to reach $171 billion by 2024, which is more than double the $85 billion from 2019. Another report by Nielsen highlights that time spent on smartphones has increased by 4 hours per day post the lockdown. Users are engaging in various activities such as gaming, browsing social networks, and chatting, along with staying fit through apps

Role of AI in mobile app development

AI is a revolutionary technology designed to change the way people use devices making them more intelligent and giving personalized user experience. It is the new addition to technological developments. The use of AI and Machine Learning in mobile applications development plays a significant role by providing a personal experience to the users by replicating human intelligence in machines.

This technology creates a high impact on transforming the user experience.

Following are some of the roles of AI in mobile app development:

% Share of reattributions vs. attributions
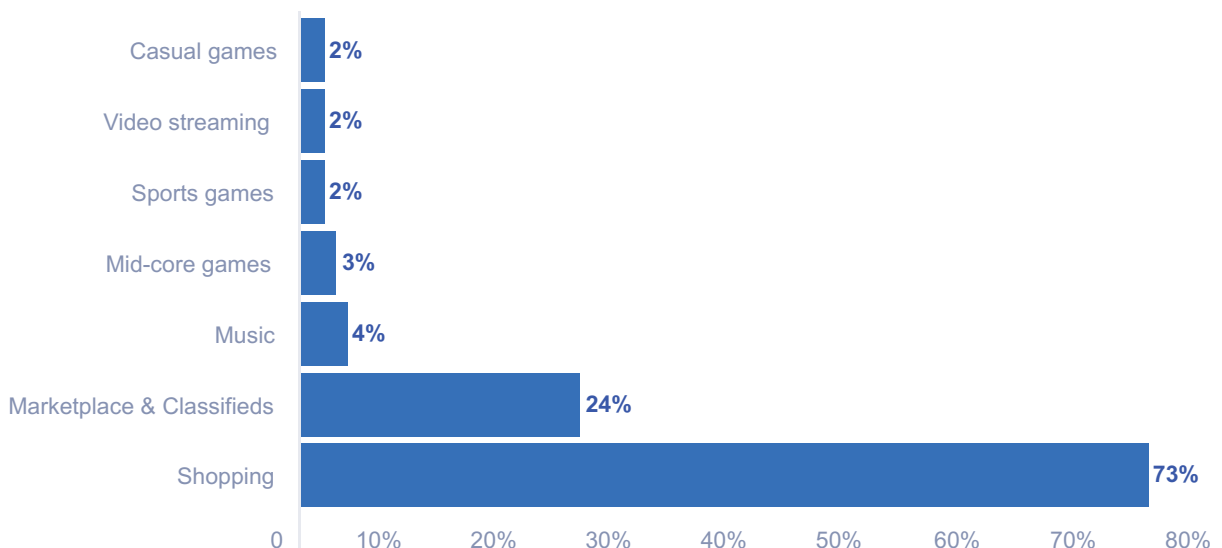
Source: Adjust — App Trends 2020

- AI collects and analyzes the user's app data for understanding the behavioural and usage pattern of the user.
- All this data collected by AI technology helps to create a better user experience and engagement.
- It gives the users a satisfactory interface and experience by understanding the user's patterns of using mobile app development.
- It enhances the user's daily operation of the technology and thus provides better customer satisfaction every day.
- It also ensures quality experience through entertainment and engagement, along with providing accuracy and perfection.

Use of AI can enhance :

1. **User engagement:** AI is currently being used to analyze user behavior to provide insight into the user. AI can tell mobile apps what users are looking for and how they are using their apps. Mobile developers can use this information to make changes for better user engagement.

2. **Decision making:** AI can analyze large bits of data that humans can't. AI can change the game by reading them in a humane way and give developers a much better conclusion. This can later be used to make a well-informed decision.

3. **Personalization:** Mobile is already marketized as personalized for each user. AI-first records user behavior and then changes their app or suggests change according to the user's usage for a better experience.

"The COVID-19 pandemic has been a critical situation for all of us. Although the times are tough, it is a growth opportunity for many industries especially the Mobile app development industry. There is a lockdown in the country and this situation is posing an opportunity for these industries to increase their market."
—Praveen Tyagi, Managing Director, Pace-IIT & Medical, CEO and Founder, EduIsFun Technologies (STEPapp)

"One of the popular AI technologies used in interactive voice control systems and mobile applications is Speech Recognition Technology. This technology allows decoding and transforming human speech into a format that is understandable to a computer. Text Analytics and NLP technology allows us to find the information we need in search engines, generate news and is currently used for security and fraud detection systems."
—Rohit Kumar, CEO and CMD, Xpay.Life

4. **Context-driven user experience:** AI-based algorithms can use the user location along with several vital aspects and then come up with user-centric messages and recommendations. Similarly, depending on the age of the user, AI can give user-centric experience. AI-based algorithms by sensing the user location along with several vital aspects, can understand the individual user contexts better and accordingly can come with user-centric messages and recommendations.

5. **AI Chatbots:** AI can also be utilized in the relevant contexts by the Chatbots to address and solve specific user problems. The Chatbots often do this customer service better than so-called customer services. It is already predicted that by 2025, a vast majority of customer interactions will be handled by intelligent bots.

6. New AI technologies like speech recognition, object recognition, automated reasoning, cognitive computing and machine learning can transform the solutions.

According to the 2019 CIO Survey by Gartner, the number of companies implementing AI technologies in some form has grown by 270 per cent in the past four years, and by 37 per cent in the past year alone.

Artificial Intelligence implementation in App development

There are numerous ways in which the implementation of AI can be done for app development.

Implementation of AI can be done through these:

1. Creating a smart and interactive Personal Assistant that will reduce the excess workload for users is one of the best ways of implementing AI. A digital assistant formed with the latest technology of artificial intelligence brings intelligence in the decision-making process.

2. For businesses, building a digital assistant will ease out the activities like solving customer queries, storing big data, collection of the necessary information and many more areas where it is required for the smooth running of the business.

3. Another way of implementing AI is for creating security controls for the application. With the increasing rate of cybercrimes, a controlled security and privacy system for mobile apps will provide the security of confidential information and thus helps in reducing crimes like data theft, plagiarism, etc.

4. With AI, apps can create a more personalized experience for users by analyzing data and identifying key patterns in user behavior. However, to leverage the power of AI for business' mobile app development, it is vital to start with a clear business objective first and then see how AI can get applied. Just because AI is the 'in thing', and there is a certain cool factor associated with it, using it without considering the business goal may result in over engineering and an anti-pattern in development.

5. AI is a conglomeration of multiple technologies. It can be considered a general term for a range of applications used by website and mobile app developers. They include Image and Speech Recognition, Cognitive Computing, Automatic Analysis, and Machine Learning. Therefore, the next step would be to critically evaluate which AI technology can be applied in the specific use cases. Engineering team may need some time for R&D and experimentation on algorithms to use. Business leaders and Product managers should factor this time in the overall Go To Market plan for the app.

6. App Developers use OpenCV machine learning library, Tensorflow deep learning framework, MLKit machine learning framework to develop AI based algorithms in the mobile app development. Apple already offers developers their own Machine Learning frameworks: Core ML and the Create ML for iOS app development.

Similarly, Amazon's Machine Learning framework comprises a set of tools to create highly sophisticated, intelligent and high-end mobile applications. Similarly, Microsoft Cognitive Toolkit (CNTK) is used to create various Machine Learning models which can be customized as per developer's requirements

"AI brings effectiveness in the day-to-day working of the user. Saving time and providing efficiency to complete a particular task is one of the ways of implementing AI for mobile apps."

—Ajay Chaudhary, Associate Vice President, Engineering & Global Head Mobile Practices - GlobalLogic

because it lets them select metrics, networks and algorithms.

7. Concept of AI test bot will help developers to test mobile apps more efficiently and maximize quality assurance by investing less development time.

Before the application is ready for commercial use, QA Engineers also need to test the AI enabled apps differently such as using a 'Glocal' approach. Also, it needs to get defined upfront clear metrics on what will be a success factor in using AI on the mobile, e.g. there needs to be 70% accuracy for relevant product recommendations for an ecommerce app.

Impact on the industry and app developers

The mobile app industry has evolved drastically over the past few years. According to Mobile Application Market Statistics, the global mobile application market size was valued at $106.27 billion

"The impact of the AI on the apps can be best observed through the current scenario. With COVID-19 taking a toll on almost all the industries, and with social distancing becoming the new normal, we believe AI will play a critical role in product development and offering services to its users."

—Abhay Pai, CTO, StepSetGo

in 2018, and projected to reach $407.31 billion by 2026, growing at a CAGR of 18.4% from 2019 to 2026.

With the help of machine learning and AI, apps are constantly competing against each other and developing various ways to offer a top-notch experience to the users. Additionally, consumers are consistently looking for innovations resulting in fueling the demand to improve the UX/UI (User Experience/User Interface).

Not only personalised, but AI gives more contextualised user experience. The AI senses the location and other aspects of the user and brings out context-based user experience accordingly. For the app developers, AI brings opportunities to create AI-driven apps for the targeted audience and provide valuable solutions.

• **Readymade AI solutions:** Readymade AI Solutions helps to construct artificial intelligence into a web application from the very scratch is out of reach to many organizations.

To adopt AI in web development, big tech giants like Facebook and Google have come up with AI tool-kits that allow ready-made plugins (natural learning process and machine learning) to be attributed in the web application. This has made it possible for small enterprises to integrate AI in their web application.

The introduction of AI in the technological world is creating a great impact for the app development industries. With the intelligence of AI and Machine learning, the users are communicated with timely and relevant messages and thus help to keep users engaged and tuned to the app.

• **Coding made easy:** AI in web development would help the user to automate various tasks that would help the web developers to find the solution. AI helps the user to create code from scratch that

> *"The introduction of AI in the technological world is creating a great impact for the app development industries. With the intelligence of AI and Machine learning, the users are communicated with timely and relevant messages and thus help to keep users engaged and tuned to the app. AI helps human beings to make more informed decisions and makes their lives better."*
>
> *—Praveen Tyagi, Managing Director, Pace-IIT & Medical, CEO and Founder, EdulsFun Technologies (STEPapp)*

> *"Machine Learning algorithms are widely integrated in medical applications. With the help of Machine Learning, doctors can make better and faster diagnosis and predict patient outcomes sooner."*
>
> *—Rohit Kumar, CEO and CMD, Xpay.Life*

allows the developers to build up smarter apps and ensures faster time to market and quick turnaround time.

• **Testing and Quality Assurance:** AI has played a big role in providing quality-driven data that reduces mundane activities and gives meaningful inferences to the user experience.

• **Deployment:** AI collects and analyses the data from the user's usage and generates effective actions for increasing the user's engagement in using the app.

• **Project Management:** AI helps the project managers to smoothly run their projects and get more reliable outcomes. Artificial intelligence is increasingly finding its way into project management tools and technology to handle everything from scheduling to analyzing the patterns of a working team and offering suggestions. These augmented tools make AI an obvious benefit to project managers going forward.

Chatbots are also being actively applied by Healthcare service providers, as these online programs can assist patients in many ways such as scheduling appointments, answering common questions, aiding in the payment process and even providing basic virtual diagnostics. Many research groups are currently demonstrating Deep Learning based or building prototype AI-algorithms that can help detect COVID-19 using chest X-Ray scans.

AI is capable of greatly facilitating the workflow of different organizations. That's why adoption of this technology is fast and seasoned companies are integrating Machine Learning and Deep Learning algorithms into their applications to offer advanced features to their customers. Healthcare, Business, Education, and Manufacturing are some of the sectors using AI applications. The continuous development of AI is leading to new opportunities for business owners and new markets for services.

Mobile apps have already started integrating AI technology to perform certain specific tasks such as voice or handwriting recognition, image search engines and performing medical diagnosis.

ON-DEMAND MOBILE APPS ARE MUSHROOMING IN 2020

The on-demand mobile app is a platform that permits consumers to use necessary services at the time when they want. On-demand apps are more suitable and efficient for every business model. They all are becoming popular, getting advanced, and spreading in the online marketplace. The growth clearly shows that as a business corporation, you must have ideas and knowledge about such on-demand apps

Ashish Mittal
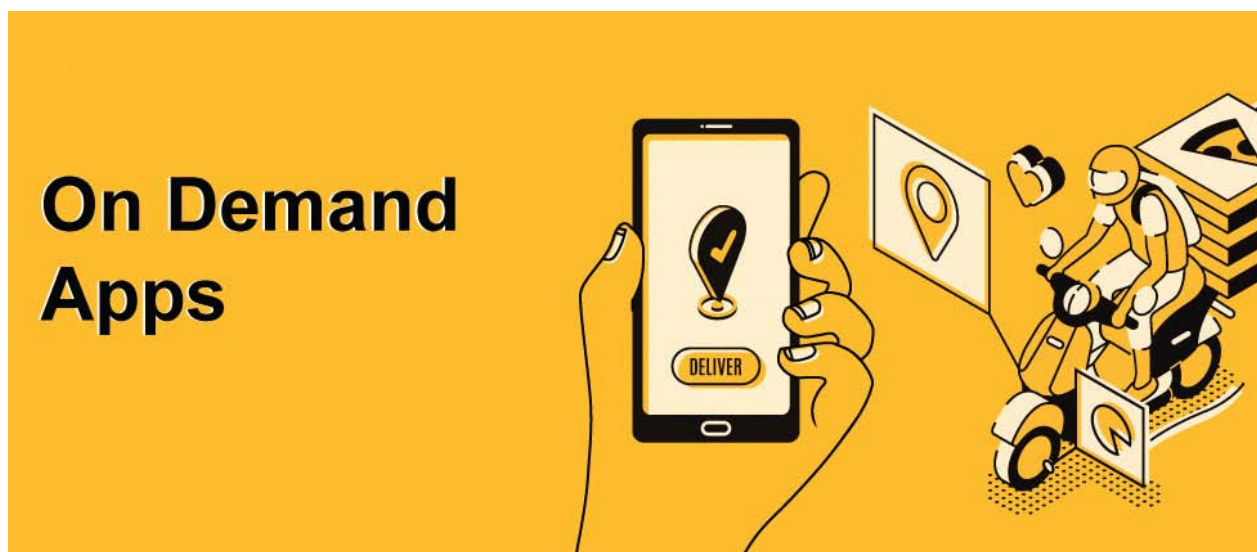
On-demand applications provide utility to several industries for the wide market over the world. The rising popularity of different applications and on-demand app development has changed the view of users and markets. They have provided several benefits to the customers as per the needs. They are fulfilling users' demands and making it in employment.

In this high-tech time, every possible thing is being delivered at the doorstep through mobile applications. They have attracted customers and given a huge benefit to the business.

In 2019 we have experienced the market growth where the on-demand industry has increased into the billion-dollar market. Also, in 2020, on-demand apps continue their growth, and their demand keeps going too far.

Because entrepreneurs want to grow more towards on-demand delivery apps, they are helping small businesses to satisfy customer expectations and boost productivity. With this many online businesses are growing fast and achieving visibility in minimum time. Uber, VistaJet, Lyft, TaskRabbit, and more are some of the known examples of on-demand apps that changed the business way.

What are on-demand apps?

On-demand apps can be explained as a connecting layer between users and different businesses. On-demand apps cover different fields,

and customers utilize them frequently. The app helps users to acquire several products or services which they want.

The on-demand services can range from food delivery, grocery, laundry, car rentals, spa, personal health services, etc. In brief, through on-demand services, users can acquire those services with a few simple taps on their smartphone. Most online businesses are using the services of on-demand apps in order to thrive and build a reputation. In this time of digitalization, every business allures the on-demand app business.

Benefits of on-demand delivery apps that flourish the business

Today almost all businesses out there are into on-demand app development service for their business. And when the talk comes to developing customized mobile app solutions, everything goes justifiable.

Although, if you want to enjoy the effective and highly-extensible mobile app for your business, then you must have the correct features included in it. Also, check for the fragile part of the app so as to take care of it. Those apps will be helpful in advancing ROI for the business and will also add value to it.

Some benefits for your business are…

1. Unlimited business opportunities: The competition in the mobile app market is very immense. Regardless you want to develop a food delivery app, a laundry booking app, booking healthcare services, or car rental booking services, you will have various on-demand app companies that can help you to enhance your business.

You will be able to have a database containing valuable data about the app users like their contact

> **Every possible thing is being delivered at the doorstep through mobile applications. They have attracted customers and given a huge benefit to the business**

details, addresses, email addresses, interests, references, and even their online action.

It can help you create notified decisions to ride your business toward growth.

Those large amounts of varied data can let you do several things for your business like …
a) You can take advantage of email marketing.
b) It gives the opportunity to enhance business based on consumer reviews and feedback.
c) It can improve conversion rates by giving the best services in the market.
d) The apps help to lure your target market toward your business.
e) Personalized chats help to enhance your services.
f) Create a 'Business-Customer' relationship.

2. Perfect model for all businesses: On-demand apps solution is ideal for all businesses. The on-demand apps are the ones that are always ready to meet customers' requirements based on the product or services. This defines them from the best fit model for any particular industry.

At this time, we all are too busy in our day to day life and unable to achieve some specific things. So, it will be a perfect time when a well-executed business plan can help customers to contact with needed products or services. The on-demand business model can make users' tasks easy and simple on time. We know that the importance of online presence is an essential factor for any business. The on-demand app solution supports small enterprises with their business models. And, assisted by rising business highlights, sales, and obtaining a return on investment in no time.And that's why on-demand app development services are making a buzz in the market.

3. Tracking and monitoring facility: On-demand apps provide the best facilities to track and monitor the services. At the time of the on-demand application development stage, the team of developers gives the location tracking facility with the help of a map for both user and business.

In this digitalization world, the issue of fraud and customer dissatisfaction has grown for multiple reasons. Tracking and monitoring functionality are the best solutions that help to track the real-time location of the product. It also assists the customers to solve their queries. This is the perfect solution for all those fraud problems.

4. Leverage the potential of Mobility: In the latest report by Statista, it is stated that mobile users are increasing day by day and can rise up to 4.68 billion in 2020. The most vital benefit of the on-demand business app is that it gives the opportunity to go customized. Every business requirement is different from others and the user's need also varies. That's why it is crucial that you offer custom features for them.

Customized features will help you to raise business in a new approach to engage with your target audience with the support of mobility. This can grow the business in the best possible way.The whole thing indicates that business with a mobile application is going to run for a long time.

And especially, on-demand app business will definitely be going far away in the competitive market by satisfying consumers with their needs.

5. Provide you with a competitive edge: On-demand applications provide a competitive edge in the business market. Business grows and gains success by the planned idea and with the help of an experienced developers' team.The current business market is very competitive, here everything is done through a planned idea. Also, the custom featured application is specially built by keeping customers' requirements in mind. All in all, the apps diminish the service problems faced by consumers. This will be based on the project management operations and convenience of custom-developed features. A mobile application is concentrated on enhancing the productivity of the business and process.

That connects more customers and supports them with a customized touch and user-friendly experience.

6. Increased Security and Scalability: Since 2018, on-demand business apps are high in demand and continue to grow like a giant in 2020 with more utilization of mobile devices. Applications with security and scalability can only be acceptable by most of the users. So, these secure apps are building a significant impact on the market.

Customized on-demand apps are highly reliable as they store data safely to fulfill the different requirements of the business. There are multiple mobile applications being used by us for every work. So, compared to any of the mobile apps for Android or iOS platforms, On-demand apps are reliable and more efficient. It builds with security to keep the record safe and secure.

> **If you want to enjoy the effective and highly-extensible mobile app for your business, then you must have the correct features included in it**

7. Affordable cost: The approach of businesses is going beyond the traditional. All are working for a unique solution and coming with new ideas of services. This method helps the user to take an interest in the application.Apart from the unique concept, now businesses are going at an affordable cost. So before planning for a business, it needs to think of a unique idea at an affordable cost.

All this is possible only with the on-demand app development company. They do all the things and increase business visibility in no time. With the same method, a business can also achieve the desired outcome with less development cost because you will provide a new and useful product that will fulfill the user's expectation and will add value to your customer spending on the product or service.

Conclusion: We have seen how on-demand mobile applications will support small businesses to grow in 2020 and increase their access. Listed above are all the benefits that a company can gain from these apps.On-demand apps are focused on providing effective and scalable services to users directly. The comfort of availability to select the services within a few clicks is a convenient option for all users. As per the current market scenario, it is possible that this service will go for a long time and will continue its advancement with time.

So if you want to enter into the market with a unique and creative on-demand service application idea and want to sustain for the long then connect with us and get a perfect solution for all your requirements.

The author is Director of Yugasa Software Labs Pvt Ltd.

ROLE OF NO-CODE APPS IN SCALING AND IMPLEMENTING DIGITAL TRANSFORMATION

With organizations looking for ways to break the silos while innovating and reducing costs, low code and no code tools have come to the forefront to help them do all of those

Divyesh Kharade

Low code and no-code platforms entered the market in efforts to free the development teams from more time consuming menial tasks, giving them more time to focus on coding where human ingenuity is required and necessary.

This resulted in projects gettings launched faster and more efficiently. Soon enough organizations started adopting these platforms to get more productivity out of their workforce, cut down IT backlogs, break the silos, innovate and reduce costs.

To top that, the world also started to shift to a mobile-first approach of interacting with information. It was not long after that that businesses started adopting low code/no-code tools and shorten

development cycles to create innovative apps for their customers as well as their workforce.

Building apps has always been an extensive process, whether done traditionally or using drag and drop technologies. From just an idea to a viable product, the journey can be smooth or a rollercoaster ride.

There are following perspectives to scalability

1. Scaling apps to cover more use cases/ more functions/ processes
2. Load balancing – dealing with a huge influx of users or a sudden decrease or constantly resizing user base
3. Scaling apps to increased user base can also mean incorporating localization, changes in business rules such as different holidays in different geographies
4. Integrating apps to multiple other existing systems, for example, HR payroll, geolocation, etc.

After successful completion, hitting a dead end would be the last thing on mind. However, dead ends are more common than one would think. While robust enough to handle dynamic information and navigate through complex workflows, apps often have limited capacity to handle the explosive growth in numbers of users, data or upgrades.

To enable the all-time capability of your app you need an able developer to maintain the app at all times. An unscalable app would require custom coding to make it flexible and run smoothly. The development process should commence with scalability as a priority so that there is zero downtime even with a huge influx of users and data.

Scalable LC NC

Low code/ no-code tools empower users to quickly build minimum viable products and deploy apps on the fly, learn of the response and optimize. They enable continuous innovation as well as scalability regardless of the starting point.

SaaS-based low code/ no-code tools run on flexible EC2 structures. That means that the end-user who is designing apps on their platform need not worry about the managing or provision of servers for the app. The platform takes care of load balancing. All the customer needs to do is [purchase] license for the increasing user base/ app complexity/ storage and keep on going with the app just as they were.

LC, NC tools make it really easy for designers to make changes in-app for a diverse userbase.

DIVYESH KHARADE, CEO, DronaHQ

With organizations looking for ways to break the silos while innovating and reducing costs, low code and no code tools have come to the forefront to help them do all of those. Low code and no-code tools empower continuous innovation and scaling regardless of the starting point. They enable users to quickly build minimum viable products (MVPs) and deploy apps on the fly, learn from the response and optimize.

Scalability is a word heard so often in business-particularly in regard to the future growth of the organization. The term is as essential to large organizations as it is to any small business. It is the enablement of a product or service to adapt to changes over time, usually involving growth, expansion or upgrade.

While it is used to refer to technological systems, it often ends up determining the adaptability of a company as a whole- as the scalability of one function can be tied to that of another. Scalability also means a growth in the number of customers, data and resources which makes it crucial to have a system that handles increases data efficiently, or the quality of the product or service takes a hit eventually impacting the organization's reputation.

The author is CEO, DronaHQ

THE IMPORTANCE OF AI-CI IN MODERNIZING YOUR APPS

PCQuest, in association with Streebo and IBM, held a live webinar on the theme of "App Modernization with Cloud Pak for Apps & AI" with the aim of increasing customer reach by as much as 70%. All the attendees got detailed information on how Artificial Intelligence could help during this current Covid-19 crisis

PCQ Bureau

Sunil Rajguru, Editor, PCQuest, said that the current crisis was an opportunity for digital acceleration. During times of crisis, technology always comes to the rescue and a lot of advancementis made. This is the time to upgrade organizations and personal skills to ride through the crisis and prosper.

Streebo is an IBM Business Partner that builds products, tools and pre-built solutions for Digital Transformation.Co-founder and Managing Partner Usman Memongave a presentation titled "Modernize yourApps with AI & get them Voice & ChatActivated!" where he talked about the next-gen apps with the IBM-powered Conversational Interface (CI).Quoting sources, Memon pointed out that there was a 20% increase in online buying after the onset of Covid-19, Facebook and WhatsApp saw a 40% surge in their users while there was a spike in consumers' digital interaction rate by 30% and their affinity of availing digital services.

A Conversational Interface (CI) is necessary with the advent of AI and NLP and the spread of messaging platforms and voice clients.A whole shift is happening on how end users are expecting to interact with systems. The benefits of CI include increased revenue & customer reach, cost savings, increased productivity, 24X7 availability and increased customer satisfaction. CI has been successful in organizations like ICICI, RedBus and IRCTC.

During the webinar, a demonstration was also given on how a CI actually works in the environment of a bank where one can make a query in English or a local language or even Hinglish, login, do funds transfer (with the safe and secure OTP), all in one sitting. The Streebo-IBM app can actually make you do all that on WhatsApp or via SMS. Taking it even further, you can go with voice interaction too. Another demonstration was shown on a furniture store, where it is quite easy to make a query, get the answer and even buy a product in the very same process via Amazon Alexa. All this is done keeping scalability and security in mind.
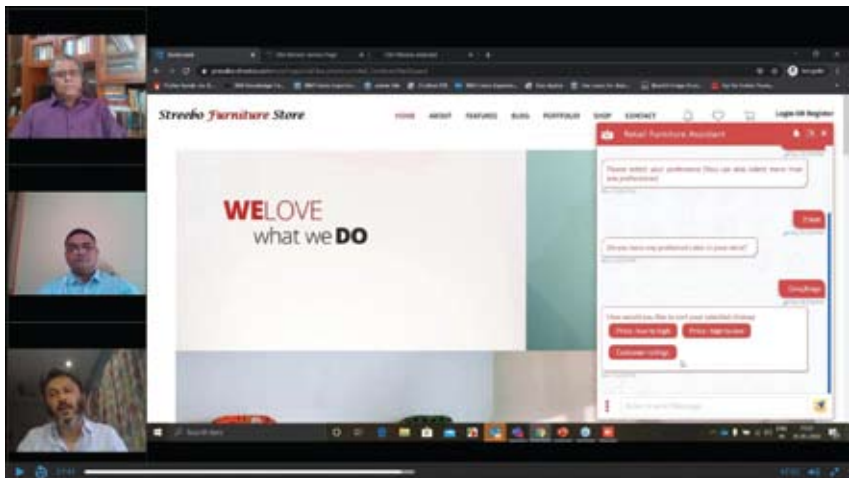
Said Memon, "Our experience has been that it drives productivity, it drives more adoption within your system. It becomes much easier for people to look for information." He added, "We have two models. We have a capex model where you can make investment upfront or we also have an opex model. You can start with a pilot or an MVP. Since the market is tight, we have also come out with a creative opex model, which is a subscription model. You can sign up for a free trial and go to a month to month subscription."

1-2-3…ARE WE HEADING FOR A JIO MONOPOLY?

The mobile is the future of computing and he who controls it controls the ecosystem of the future. 5G and its successor technologies will go beyond mobiles and power entire connected cities

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Modi Telstra. Hutch. Spice. S-Tel. Etisalat. Loop Mobile. Virgin. T24. Videocon. MTS. Aircel. Telenor. Docomo. Reliance Communications. Phew! That's the long list of telecom operators in India which either didn't take off or went bankrupt or got merged into a larger entity. BSNL is a government white elephant, Vodafone Idea is in the doldrums and AirTel has not been that consistent with its performances in the last few years.

That leaves only one company which has the potential of being the Last Man Standing—Reliance Jio, the newest kid on the block that has captured market share and whose disruption long ago still reverberates in the Indian telecom industry.

While there has been economic doom and gloom thanks to the COVID-19 crisis, only one company seems to be on a spree to acquire money. Recently, Jio has picked up a whopping US$10 billion+ from its deals with Facebook, KKR, Silver Lake, Vista Equity Partners and General Atlantic. Here are three things to note…

1. Money. Money. Money: The COVID-19 economic recession may be in full swing right now and nobody knows how long it is going to last. But when things pick up, Jio is the only telecom operator in India which currently has money in its war chest and can go all guns blazing during the economic upswing. After every recession, usually the market beats its previous records and rising investments sees a slew of new products. You can be sure that Jio has a long-term gameplan. You can be sure that it will be big. You can be sure that when that happens, the gap will further widen with its competitors.

2. Mobile + Apps = *Karlo Duniya Muthi Main*: Facebook is not just Facebook. It's WhatsApp. It's Instagram. It's Messenger. It's Oculus. Jio, apart from being the market leader in mobile connections is also JioFi, JioFiber, JioApps and many other things. The future belongs to the ecosystem of the mobile
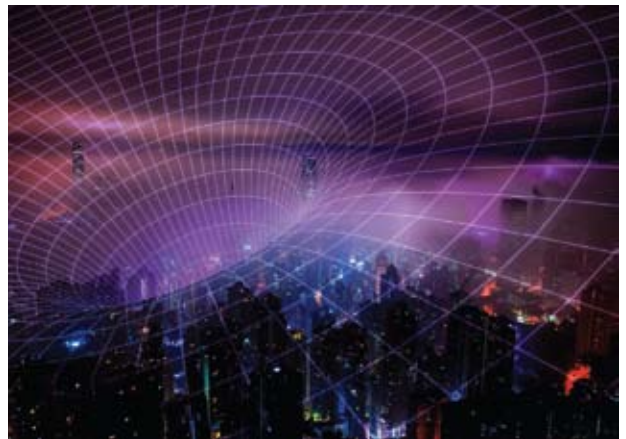
handset + apps + data pipe. Mukesh Ambani is baking the complete cake and not just looking at individual ingredients. Years ago, Dhirubhai Ambani was not just into textiles, but the entire backend of the production process. Mukesh is doing the same with the mobile ecosystem.

3. Life beyond 4G: The future belongs to Industry 4.0, the Internet of Things (IoTs), Industrial IIoTs, wearable IoTs, connected buildings, connected cars, smart factories, collaboration, drones… Connectivity of that sort cannot be sorted by 4G or copper/optical fibre cables but only 5G. It is possible that when the 5G auctions are finally held after the COVID-19 recession, Jio may be the only credible bidder for a variety of reasons.

Till 4G it was mainly about mobiles, but once you got to 5G and beyond, the scope widens exponentially. In the future whoever controls 5G and its successor technologies controls not just mobile telephony, but the entire home-office-factory-drone-connected car ecosystem. It won't be mobile telephony but universal connectivity. We already know who is a frontrunner for dominating that impending future.

5 BEST TIME & PRODUCTIVITY TRACKING TOOLS

Monitoring your employees is quite tough when they are working from home, only technology can let you track productivity of each

Ashok Pandey
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Work from home, this has become a new normal, employees are working from home and reporting to their managers. But the biggest challenge is tracking the productivity of each employee.

Productivity is a tough aspect to monitor, so what do you do?

Thankfully there are lots of productivity tools enabling you and your employees to create timelines, for tasks and meet your deadlines every time.

DeskTime
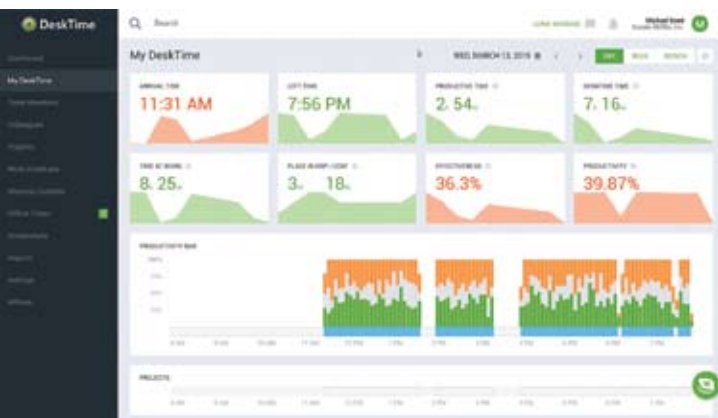
DeskTime is the perfect app for companies and teams who are interested in not only tracking also detailed analysis of the URLs and programs their employees use. The tool lets you set the productivity target, then monitor to meet the target.

It is a simple-to-use time app with three crucial features including - employee monitoring, project management and productivity analysis. You can see the change in the employee productivity boost by 30% as it helps to identify and eliminate inefficient habits.

DeskTime is the perfect tool to stay organized and in control. Its time tracker starts and stops working when you do, from the minute you turn on the computer, to the minute you turn it off. No manual data entries - DeskTime tracks and calculates productivity automatically for you.

DeskTime collects accurate data about the time spent away from the work computer. Specify the reasons for absence and put them down as productive, unproductive, or neutral. Managers can track the time of individual projects and tasks.

Time Doctor
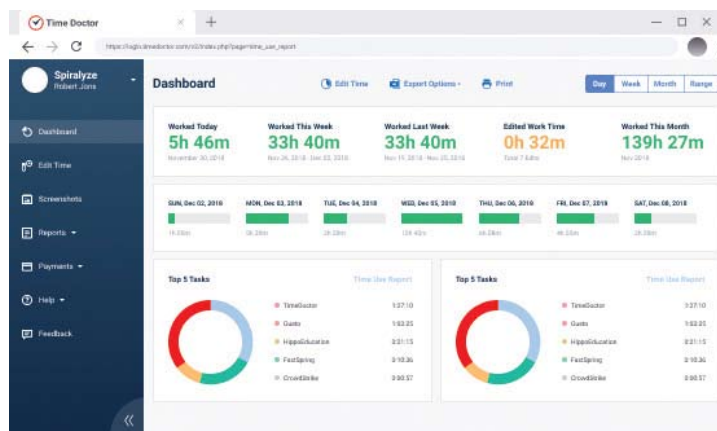
It is a powerful employee time tracking app with a mix of three - time tracking, employees monitoring and project management. Time Doctor gives you detailed information about your employees. It records web pages and apps used by each employee. Managers can also take screenshots of employees' desktop to see what their employees are working on.

Time Doctor let you sync all your project management, communications, and accounting software. It

comes with pop-up alerts employees when they go off task. Time tracking instantly improves employee's focus and productivity.

Toggl

Toggl makes time tracking so simple, it only takes one click to start a new time entry or to continue tracking a previous task. It comes with timelines and budget planning feature making Toggl a great solution for collaborative freelancers, startups, and small businesses working on complex, limited-budget projects.

Toggl let you integrate 100+ apps, allowing you to start tracking immediately. The tool turns your calendar events into time entries with just one tap on Toggl's mobile apps.

Toggl lets you easily filter your time tracking data, showing you the information you need when you need it. All reports can be exported into Excel, CSV or PDF's. You can compare project progress to the estimated time with the Project Dashboard. Spot problems early and fight off scope creep with easy-to-read visual data.

Harvest
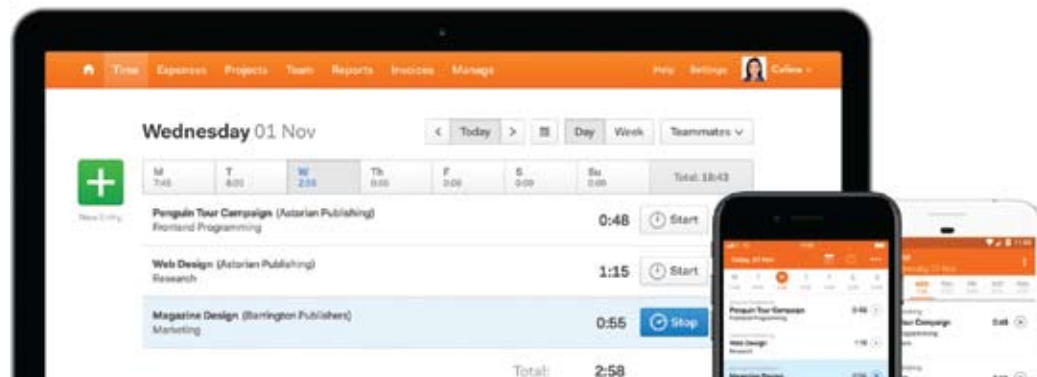
Harvest combines work time tracker as well as provides expense tracking. Track time and expense then collects the data and creates intuitive, visual reports. Additionally, it let you raise invoice once the project is dome to your clients straight from the app with Stripe or PayPal, making it a perfect tool for freelancers.

Harvest comes with features like timesheets that provides a wealth of information that can help you manage your team more intelligently. The tool collates this raw timesheet data into a visual summary of where your team's time is going.

Harvest's sister app Forecast lets you schedule your team's time into the future. Pull that data into Harvest to catch a project before it runs off the rails.

Hours

Hours is a simple time tracker with basic report-sending functionality. Hours makes real-time tracking easy by keeping a running list of timers that you can switch between with one tap. You can manage your tasks and projects by colour-coding them. Also, the timeline in the app lets you quickly make adjustments in your recorded timestamps at any time.

Hours Invoicing makes it easy to get paid. Quickly customize your invoice, add your hours, and even include timer notes from our friendly interface.

	DeskTime	Time Doctor	Toggl	Harvest	Hours
Price	Free trial, pro starts at $95	Free trial, starts at $7	Starts at $9	"Free for one user with two projects Plan starts at $12/monthly"	Starts at $6.67
Supports	Mac, Windows, Linux, iOS, Android	Web, Mac, Windows, Linux, iOS, Android	Web, Mac, Windows, Linux, iOS, Android	Web, Mac, iOS, Android	Web, Mac, Windows, Linux, iOS, Android
Features	Automatic time tracking	Track time spent working and on breaks	One-click Timers	Track time your way	Task and project color-coding
	URL and app tracking	Automated screenshots	Tracking Reminders	Daily Timers Weekly Timesheet	Frictionless time tracking
	Document title tracking	Track activity	Over 100+ App Integrations	Keep track of billable hours	Flexible and easy invoicing
	Offline time tracking	Track time to clients and projects	Togglman Thinking	Spot burnout before it happens	Slice and dice your team's data
	Project time tracking	Detailed reports	Manual Time Entries	Time breakdown by project	Hours for teams
	Pomodoro timer	Track websites and apps being used	Calendar Integration	Timesheet Approval	A bigger and better timeline
	Employee absence calendar	Process payroll and billing automatically	Pink Report Chart	Automatic Reminders	Reminders
	Work Schedules	Integrates with all leading project management tools	Project Dashboard	Add comments and notes to tasks for the team	Time tracking
	Custom reports	Alerts to stay off Facebook or other time wasters	Billable Rates	Visual reports	Can be used with Apple Watch

NEW DESIGN NEEDED TO RAPIDLY RECONFIGURE SUPPLY CHAIN

The COVID-19 crisis will accelerate the reliance on e-commerce for food and other supplies as consumers seek to minimize their risk of exposure through social distancing, says Deep Agarwal, Regional Sales Director – Indian Sub-Continent, Zebra Technologies Asia Pacific

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The entire global and national supply chain has broken down as a result of the Coronavirus crisis. How can we have a tech upgrade using tools like tracking/RFID solutions and maybe drones and tracking via blockchain?

Today, meeting the needs of the on-demand economy has never been more challenging especially with the ongoing pandemic. We believe that a new kind of design is needed that enables companies to rapidly reconfigure their supply chains to become more agile and responsive to rapidly changing global trade policies, supply dynamics, and disruptions.

We expect the pandemic situation to accelerate the reliance on e-commerce for food and other supplies as consumers seek to minimize their risk of exposure through social distancing. This means that

fulfilment operations will likely need to scale their abilities quickly to meet with the growing demand. Zebra mobile computers which are powered by the Android OS can by reducing onboarding time needed for new front-line workers, due to their familiar user interface. This allows the front-line workers to start performing at an optimal level quicker thereby enhancing productivity.

The augmentation of staff with RFID-enabled devices will continue to witness an upward trend. It is a powerful tool that grants physical materials with a digital voice. It allows businesses to track and trace their inventory within their facilities in real-time, thereby improving work efficiency and accuracy.

We are currently undergoing an unprecedented period that has posed challenges like never. Therefore, forward-thinking companies with the right technology are likely the ones who will emerge from the pandemic as leaders of their fields.

What are your learnings from the crisis and how can companies be more "future ready" from now on?

While the pandemic may have disrupted businesses and the lives of people around the world, it has presented an opportunity for companies to learn how to better manage a similar situation in the future. For instance:

a) Sectors like retail and healthcare will need to re-assess the resilience of their supply chains to keep production running in order to enable fulfilment to their customers.

b) Business continuity plans have led to split-team work arrangements which stresses out the workforce of essential businesses like supermarkets and daily essential stores, thereby prompting them to find ways to help their front-liners achieve greater productivity and efficiency at work.

For (a), we expect an increase in the usage of e-commerce for food and other essentials in the coming months as people continue to maintain social distancing for safety. After the pandemic, we anticipate the demand for e-commerce to be even higher because people would have grown comfortable with ordering online. Naturally, this means that fulfilment operations will have to leverage on technology to scale their abilities quickly to meet with this anticipated growth in demand.

For (b), we expect businesses to recognize the importance to augment their front-line staff with the right technology to increase their efficiency and productivity to cope with the situation and beyond.

DEEP AGARWAL, Regional Sales Director – Indian Sub-Continent, Zebra Technologies Asia Pacific

By providing them with tools that have a relatively low learning curve, their front-line staff will be able to shorten the onboarding time required and enable them to start using the devices effectively at work sooner.

Zebra is committed to helping the front-line of businesses to achieve greater efficiency and productivity through our innovative technology. We continue to work closely with our channel partners to provide industry-tailored solutions to businesses to cater to their varying needs, with the primary focus of helping them overcome their business challenges.

Is there a need for technological advancement to cater to the fast-changing consumer needs and what does that look like?

The pandemic is fast changing consumer

behaviour. It has accelerated the growth of the on-demand economy because of increased online shopping due to stay home measures, while prompting new ways of shopping in a bid to observe social distancing. To stay competitive and to cope with the current demand, the only way forward is for businesses to introduce technology that can provide their front-line staff with the right tools to enhance their efficiency. For example:

(a) Optimize curbside pickup for online grocery orders

- The grocery shopping experience is set to change drastically, as click and collect orders have surged. One way to cope with this would be through curbside pickup for online grocery orders.
- Store associates can be notified of new online orders by sending automated alerts to their mobile devices. Once received, they can quickly pick orders using data-rich images and pass up items that they know are out-of-stock.
- Subsequently, they can pack merchandise and print receipts prior to the customers' arrival to expedite order fulfilment.
- Store associates can be notified of customer arrivals by sending real-time alerts to their mobile devices, and they can scan customer coupons or take additional payment and print receipts while the customer remains in the safety of their vehicle.

(b) Transforming inventory management

- With daily essentials and consumer goods flying off the shelves of supermarkets during this pandemic, it has become crucial for retailers to have the right tools that can provide real-time visibility of their inventory

> **We are undergoing an unprecedented period that has posed challenges like never. Forward-thinking companies with the right tech will emerge as leaders**

both in their warehouse and store front. This will ensure that they do not experiencean out-of-stock situation, which translates into revenue loss and customer satisfaction being compromised.

What advancements can be made in the healthcare and government sectors in the post Coronavirus era?

There are many technological solutions that the healthcare and government sectors can consider adopting presently or post-Coronavirus period.

For the healthcare sector:
(a) Drive through testing centers

- During an infection outbreak, drive-through testing centers are invaluable for healthcare facilities. They allow front-line workers to collect specimen samples from patients at high volumes and can contribute to reducing infection rates and ending the outbreak.
- In establishing a drive-through testing center, safety is a top priority to prevent infection rates from rising. Workflows must therefore be optimized to enable positive patient identification and proper specimen collection, testing and reporting. The end-to-end process must also go as smoothly as possible to reduce long wait times.

(b) Delivering optimal care in alternative care facilities

- When medical facilities are overwhelmed with an influx of patients during an infection outbreak, they set up alternative care facilities like medical tents or temporary hospital sites.
- These alternative care facilities increase bed capacity and help alleviate the pressures on intensive care and emergency room facilities in traditional hospitals.
- They typically offer only the essential services needed to combat an infection outbreak, with fast-paced and hectic environments that can lead to increased errors in patient identification and treatments.
- Amid these challenges, healthcare workers can continue to provide quality patient care if they are equipped with the right technology tools.

(c) Enhancing efficiencies in laboratory specimen management

- A pandemic can dramatically increase

laboratory staff's workload with huge volumes of specimens to test, and this is often done under pressure to get results as fast as possible with no room for errors.

- Specimen identification errors negatively impact patients by delaying, impeding or misdirecting treatment options. As a result, they can slow efforts to reduce infection rates and end the infection outbreak.
- Additionally, lab errors can increase costs for the healthcare facility and damage the facility's reputation.
- Barcode technology has become a proven solution for labs to boost specimen identification efficiency by automating data entry and reducing specimen identification error rates. A retrospective study revealed that barcode scanning and one-on-one specimen collection education resulted in a 90 percent reduction in specimen identification errors.

For the government sector:
(a) Emergency Medical Services
- Typically, any emergency medical services would strive to lower the number of deaths that occur before patients reach hospitals for treatment, which is especially relevant during this pandemic.
- In the case of Wyoming Office of Emergency Medical Services, they were using pen and paper to take notes while in the field and in the ambulance. And someone would later transfer the notes into a desktop-based system thereby resulting in data entry delays and errors.
- Ultra-rugged tablets with superb battery life were deployed to allow ambulance personnel to enter data in real-time from the ambulance, thereby saving precious time and reducing unnecessary errors. It will also free up the time of the ambulance personnel to focus their efforts on patient care.

How are you personally coping with this lockdown and any specific tips to companies and WFH employees to manage things better?

Personally, I have been coping well by working remotely to continue supporting Zebra India's customers. Our primary focus is to ensure that there's minimal disruption for our customers. This is made possible thanks to the good business continuity planning that we had in place.

Even before India's nationwide lockdown was

> **To stay competitive, the only way forward is for businesses to introduce tech that can provide their front-line staff with the right tools**

implemented, Zebra India was already offering flexible working arrangements and had asked our team members to work remotely, when possible. For team members who had to continue working in the office facilities, we offered them guidance on how to stay safe and took extra precautionary measures like making hand sanitizers readily available in our offices and increasing the cleaning frequency of all common areas of our facilities to ensure their safety. At Zebra, the safety and well-being of our team members is of utmost priority.

Businesses should ensure that the mobile devices used by their front-line workers are cleaned and disinfected thoroughly and regularly. This is especially the case for retailers whereby the point-of-sale equipment will be frequently touched by both store associates and customers. Contrary to popular belief, the best disinfectant is not always those that are alcohol-based.

Depending on the device and its usage, other forms of cleaning agent can also include sodium hypochlorite, hydrogen peroxide or even mild dish soap. Therefore, it is important for users to refer to the official sources of their devices to understand which cleaning agents are safe to use and the best way to clean their devices with. Otherwise, using the wrong cleaning agent may have a harsh effect on the devices, especially on their plastic casing.

It is recommended that retailers implement a device cleaning policy as soon as possible by referring to the **original suppliers' guidelines**. This will help ensure that their front-line staff can properly disinfect their devices regularly. In addition, it will reassure store associates that the necessary steps are taken to prevent any shared technology devices from becoming a potential source of virus transmission.

OPEN DATA AGAINST CORONA— WHAT'S THE SECURITY PRICE OF THIS CHORUS?

Collaboration cannot work its wonders with closed fists and closed minds. But how to make sure that the beehive gathers more honey and fewer intruders? Quite a question there!

Pratima H

It is both unusual and heartening to see so many academicians, medical professionals, data scientists, vaccine experts and labs all over the world blurring all boundaries and collaborating like never before. After all, a challenge as stubborn, and as unprecedented, as the current pandemic demands nothing short of a giant human wave of knowledge-sharing.

This is where open data sets are exuding a lot of strength and scale for the speed, diversity and depth that this collaboration needs.

Ritesh Chopra, Country Director, NortonLifeLock, India explains the realm of open data repositories in detail. Open data is the basis of a wide range of applications, services that aim to improve our daily lives. There has been an effort at making data available by public administration to increase accountability and transparency. However, as seen recently, they are also providing this data in order to create new, and more efficient, services specifically in healthcare sector. Open data on COVID-19 is available for research scholars and industry experts for finding a possible cure for the disease and work towards developing vaccines.

ODI or Open Data Institute has offered free support for organizations in designing data models for tackling the Coronavirus crisis. It has emphasized how Data is playing a vital role in helping to support research into the Coronavirus and develop ways of responding to COVID-19 and its impacts. A recent statement noted that when data is open for people to access use and share, research and innovation can take place more quickly and, arguably, with more efficacy. "Reducing the steps that researchers and

developers have to go through to get access to data means insights can be derived more rapidly."

"Reducing the steps that researchers and developers have to go through to get access to data means insights can be derived more rapidly," the statement added.

In another effort not far away, Microsoft has also ushered in the Open Data Campaign, in collaboration with the ODI and The Governance Lab, and it aims to address data inequality among companies, as well as regions. The campaign is explained as a way that aims to facilitate open and secure sharing of large-scale data, and especially information that could help in solving some of the biggest challenges facing society, like healthcare, sustainability, and urban socioeconomic issues.

Microsoft has also declared its participation direction for twenty data projects to help fight the data divide issue. It intends to share datasets from the project openly on GitHub and will publish the results of its COVID-19 research project. Its researchers distilled that less than 100 companies collect more than 50 percent of the data produced today. That clarifies the need for solving the staggering divide in data ownership right now.

Another alliance of data analytics experts has also emerged to help the world to recover from the economic impact of the COVID-19 outbreak.

This one is established by Rolls-Royce, Emer2gent to combine traditional economic, business, travel and retail data sets with behaviour and sentiment data, to provide new insights into and practical applications to help people and organisations adjust to the new normal.

Its members include Leeds Institute for Data Analytics, IBM, The Data City, Truata, and ODI Leeds. Interestingly, the alliance has pledged to have "a sharp focus on privacy and security" issues.

If we draw an enterprise corollary, an Accenture C-Suite survey also affirmed that organisations are opening up to this new, bold, brave and open-minded genre of collaboration. It showed 36 per cent executives pointing out that the number of organisations they partnered with had doubled or more in the last two years. As many as 71 per cent anticipated a surge in the volume of data exchanged with the ecosystems. But an Accenture Research also underlines the flip side of this collaborative tide. Companies saw about ten per cent dip in revenue for up to six months after a large, public data breach—and that revenue loss takes two years to recover.

RITESH CHOPRA, Country Director, NortonLifeLock, India

When birds of many feathers flock together, they are easier to spot and hunt, aren't they?

Gate-crashers to the party

Chopra argues that open data comes with its pros and cons. "Two things one should keep in mind— data integrity and privacy. The source of the open data is important for understanding its authenticity, so it is always recommended to use these open data from authorized source to ensure the data integrity. Data set from unverified source can be risky and can put the research firm on target of hackers and can lead to data breach or ransomware attacks."

Crisis is a time that causes bad decisions and weak spots more easily. The tendency toward ad-hoc decision making during crisis only accelerates the opportunity to exfiltrate data or compromise business operations, Prashant Bhatkal, Security Software Leader, IBM India South Asia contends.

It is not hard to guess why there is anxiety over too much sharing of data. Some UK privacy and security experts have raised warnings over Coronavirus apps already. In an open letter raising

some concerns, 177 academics in UK did what 300 academics had done from all over the world a few days back. The emphasis on data protection principles and the role of necessary trust was starkly visible in the ensuing discussions. Germany, Estonia, Spain and Switzerland have leaned towards decentralised architectures so that privacy and data's fair use is ensured. Cross-platforms APIs are also being heavily debated.

Meanwhile, the heat on databases that allow de-anonymisation of data keeps getting stronger. Understandably so—put in a common and open pool, all this data is easily susceptible for getting into the wrong hands, for unfair surveillance and as a repository for personal information that can be exploited for wrong intentions. De-anonymisation of data is a valid concern emerging in the last few weeks in various parts of the world, Chopra seconds that. "When it comes to privacy, we talk about it being published anonymously. The main goal of anonymisation is that analysts will still find the data useful while it is not possible to identify people whose information is included in the dataset. But most recent events indicate that the risk of de-anonymisation is always there and can be used to identify people from these data sets—which is a big privacy risk." Chopra explains as he cautions that we should also be aware about cybercriminals attacking healthcare sectors through practices like spear phishing.

Herd immunity—Possible?

Being open is risky. But that should not deter these encouraging efforts that straddle all industries, regions and professions—just to make sure we survive this storm well.

In fact, done the right way, openness can be a security booster in itself. A security analysis at ODI had found that companies were turning to open data with an increased interest as a way to combat hackers. This is because this approach allows them to fill gaps, reduce risks and seize opportunities.

That's why Accenture recommends approaches like Privacy Preservation Computation (PPC) Techniques, secure hardware enclaves, data obfuscation as per differential privacy norms, homomorphic encryption (broad statistical information gathered and inferred without exposure of individual specifics), and secure Multi Party Computation (MPC) (wherein actual data source is kept private without disabling a group to combine their data).

Of identity theft and Zoombombing

39% respondents in a survey in India reported experiencing identity theft, with 10% having suffered some manner of loss as a result. Often, even though people are worried about cybercrimes and aware of phishing scams, they do not take adequate measures to protect themselves. The recent Zoombombing incidents have made us aware of yet another way how security and privacy breaches can occur. It is absolutely essential for users to take strong measures to protect their devices and their personal identifiable information from all kinds of online threats. Using VPN can protect your personal data and online connections from cybercriminals to a great extent.

Being prepared and cautious always helps.

"Cybercriminals impersonating organisations like the WHO, send phishing mails to employees of various research organizations involved in COVID-19 study. So, it is important for the CISO and the employees of the organization to identify these phishing emails to stay safe and keep the organization's network safe by avoid clicking these links or downloads. It's also important to remember that as most people are not working from laboratories or research desks, but their own homes, the network, devices and their entire ecosystem is now different, which makes things more vulnerable. So, it's crucial for everyone to take measures to protect their devices." Chopra advises.

If we have learnt anything in the last few weeks, it is hard to be skeptical against the beauty, brilliance and impact of the collective human spirit. A flash-mob singing together or playing bells in harmony or banging steel-plates with a buoyant mood—how much that inspires and elevates everyone! All we need to take care is that whether we share songs, music, torch-light, chants, research progress or data; we should stay in our balconies. Sharing is possible without thronging like a disoriented amoeba. Let's work like bees instead.

(Source: NortonLifeLock Cyber Safety Insights Report)

TOMORROW'S WORKERS WILL BE MORE DYNAMIC AND FLEXIBLE

The future of work is already here, and it's being considered as the new norm. It has ignited what the industry is calling the 'largest work-from-home experiment'. Supria Dhanda, VP and Country Manager, Western Digital India, talks about these changes

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What have been the changes in data usage/volume after the Covid-19 virus broke out and the global WFH cases spiked to record levels?

With the change in the working model, data consumption is certainly growing, and we can expect a huge demand from data centers and laptops for storage. The transition is fast, with more data being stored in the cloud and with additional collaboration tools being deployed, many processes moving digital, there will be a hike in the server, data centers, and storage segments. There is an increase in video consumption across platforms as well—be it one-on-one talks, team meetings, instructional video or usage in a factory and development context. Across

industries, we will see a rise in demand which will lead to increase in storage demand not just for cloud but in the flash segment as well.

What about data security and privacy issues as a result of this?

Industries around sectors are switching to a work-from-home platform during these times. This means data transitioning through data systems, mobile computing devices and applications, and thus there is need for new security measures so that users are not prone to risk of someone else accessing their data. Business leaders should work closely with their security teams to recognize possible sources

of threats as a result of more workers working from home and prioritize securing their sensitive information and business-critical data. Providing the right secure competences like secure connections to business-critical cloud and on-premise applications, endpoint protection on all employee devices and automated threat intelligence to block out any ransomware is key.

Has there been a disruption in the global/national data/hardware supply chain? How are you coping with that? Have any product launches been delayed?

Our manufacturing, logistics and operations teams are working meticulously since the outset of the COVID-19 epidemic to move demand from affected suppliers, adjust transportation routes, and continue factory operations while ensuring the health of our workers, vendors, and communities. We are working with local governments and authorities to manage any logistical limitations. While we have taken a slow road in these times in terms of the supply of our products, we have observed the rising demand for storage especially during this time.We're seeing increase in online activity, cloud computing and smart devices. We know the significance of the critical technology powering the world's efforts and are doing everything we can to keep up with the demand for our technology and solutions.

How are you personally coping in the crisis and what are your tips for both individuals and corporates?

At Western Digital, we have set up an internal team to perform essential/mission critical services, well aligned to Government norms and industry guidance. These crisis management teams are cross functional in nature and are fully empowered to bring about normalcy. Also, communication is the key to manage any situation and contain any uncertainty. This is a unique situation which has not happened before, with swift decision making and simple and clear communication with all employees, one can sail through these challenging times. We have always encouraged a flexible work policy with our employees, which is also one of the reasons we have adapted well to this remote working situation. Ensuring the IT Infrastructure is in place as it is truly the backbone of any business and swiftly mobilising most of the workforce to work from home has been advantageous. Personally, I like to plan my day with a clear and calm mind and in this stay-home situation.

SUPRIA DHANDA, Vice President and Country Manager, Western Digital India

I have substituted my walks in the park with yoga and short strolls on the terrace. As we attempt to go about our business, it is critical to put people and their safety first and it's important to coach our teams to be more empathetic. During this 'new normal' we are encouraging our employees to stay home, continue to stay engaged with teams, spend time with their loved ones, and do their best to maintain a work-life harmony.

How do you think both the data/cloud and IT landscape will change once this whole crisis is over? Will we see a cultural shift too?

There is no question that tomorrow's workers would be more dynamic and flexible. The future of work is already here, and it's being considered as the new norm. Coronavirus has ignited what the industry is calling the 'largest work-from-home experiment'. Companies are suddenly having to enable an increasingly mobile workforce. This pandemic has given a signal to all organizations that it's time to revisit their remote working policies and redesign them for wider application for business. In the coming years, we will be seeing a flexible working environment, and a greater dependency on cloud. We are foreseeing innovations which will help corporates as well as employees to build an infrastructure which encourages secure networks and flexibility. This is a truly digitalised workforce era one that promotes plug in from anywhere anytime and define newer ways of being productive and being engaged.

ADOPT LOWER COST AND HIGHER EFFICIENCY TECH

Increased automation will allow complex systems to function with minimal human intervention at times of crisis like COVID-19. Innovative tools like bots and the man-machine combination will help them serve customers effectively with lesser worker time, explains Manish Bharti, President, UiPath India and SAARC

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How are you coping with the current COVID-19 crisis? What are your tips for enterprises?

We continue to wrestle with the challenges of COVID-19 and navigate through these fast-changing times with the safety and well-being of our employees remaining our priority. Keeping this in mind, we at UiPath have mandated work from home for all our employees till mid-June. All our events, across the globe, also stand cancelled, and we have strongly urged our employees to practice social distancing. In addition to this, we have set up a task force that is constantly monitoring the situation and taking all the required steps to protect the health and safety of our employees across all regions. As a part of this program, we have an internal slack channel on COVID-19 announcements, which also includes the latest updates around business, health and travel advisories.

In the wake of this crisis, we have also been exploring how we can also support the world. We recognize we have a unique opportunity to offer technology that can assist organizations and

governments. In line with this, we have developed bots to help organizations monitor employee health, Governments track potential COVID-19 cases and healthcare providers reduce the wait times for testing and results of COVID-19. We have several use cases across verticals to support companies in managing the economic impact of this crisis. We ourselves have started using these bots to keep a close track of our employees' health.

Going forward, I would encourage businesses to adopt lower cost and higher efficiency technologies. This would equip them to not only survive but also keep their workforce secure. Increased automation will allow complex systems to function with minimal human intervention at times of crisis like Covid-19. Innovative tools like bots, increased connectivity and the man-machine combination will also help them serve customers effectively with lesser worker time and reduced operational expenses.

What changes do you see taking place in technology in a post-COVID-19 world?

With lockdowns declared across countries, employees are working remotely by staying online. These remote working protocols will continue to be a dominant trend. Social distancing norms would ensure that remote working measures around the world will provide the impetus for enterprises to lean heavily towards automation.

With COVID-19, digital has gotten a real push. And, while digitization was already an ongoing trend, it is now a priority for every organization—even the brick and mortar companies. Investments in enabling technologies such as cloud computing, data and cybersecurity along with emerging technologies such as RPA, AI will definitely see a rise.

Intelligent automation will rise and be accelerated by a combination of factors such as talent availability, process-first approach, and setting up of dedicated automation COEs. Automation will also become the key for enterprises to ensure that business continuity is maintained.

Specifically, how will RPA evolve beyond 2020?

As I mentioned, remote working protocols will continue to be a dominant trend and social distancing norms push companies towards automation. Additionally, existing technology trends

MANISH BHARTI, President, UiPath India and SAARC

will be accelerated from sheer economic necessity even as new trends emerge. These rapid changes will include the acceleration of enterprise digital transformation and the automation of work.

Many will assess the power of cognitive RPA in managing work with highly dispersed workforces and all customer engagements with a fresh perspective. There will be a large focus on how to properly position and prepare themselves for the future. This will push the CIOs to closely evaluate the benefits of intelligent automation and the processes that can be automated to fine tune their ensuing strategies.

In fact, in partnership with Zinnov, we recently did a joint study on how hyper intelligent automation will be adopted by large enterprises in India. According to the report, two-third of the large enterprises in India have already invested in HIA and more than 30% are already setting up HIA specific COEs. Additionally, Indian enterprises, specifically healthcare, BFSI, and the public sector will continue to leverage automation in their fight against COVID-19 to maintain business continuity.

While, automation is now being explored across verticals such as manufacturing, retail, telecom and

media, etc. governments too are turning their focus to it to manage the crisis. Organizations that have already commenced automation journeys are now choosing to scale while those that were not yet on this bandwagon are keen to adopt automation and other technological trends.

With talks of no-touch/remote/people-less technologies, how can RPA help in workflows during such lockdowns and after?

Businesses are looking to optimize their IT strategies to ensure seamless workflows. Organizations are resorting to automation to alleviate hurdles from their business continuity plans. For example, in Insurance, there is an increase in the number of queries for claims, benefits withdrawals, retirals or policy cancellation. In banking, there has been a surge in queries due to reduction in branch footfall and government announcements like deferrals, loan payment holidays and tax filing extensions. All this results in an increased workload for the contact centres. With RPA, tasks such as data extraction, making system entries, creating requests and preparing a report extract can be easily taken care of in an automated people-less manner, giving the contact centre agent more time to deal with work that requires human interference.

And as we move forward, there are new automation use cases being identified every day such as remote account opening by banks, order management of PPE, employee on boarding bot, WFH IT support through incident management and attendance and meeting scheduler bots.

Do you have any examples of how your customers used RPA differently after the current crisis happened?

With the COVID-19 crisis, healthcare providers, Governments, and companies have been facing serious challenges to manage employee health, patient health, new cases and business continuity. Given the steep incline of cases and the lockdown, managing the sheer load of work and processing the same, are areas that organizations need help with. By using RPA, companies and the Government are solving these challenges by bringing agility to their operations and give some relief to their overburdened teams.

In fact, we have already worked with three state governments and are working with 3-4 more states to help collate the statewide data of people quarantined. The State Health Department has

> **Many will assess the power of cognitive RPA in managing work with highly dispersed workforces and all customer engagements with a fresh perspective**

to maintain information regarding the inbound travelers in the last two-three months or the first level contacts of the COVID positive people. This needs to be updated regularly on a dedicated portal. The comprehensive data updation is time consuming and demands lots of manual effort, considering the number of people being quarantined in each state. The states have deployed RPA bots to pick up data from the statewide response sheets and update the comprehensive records of quarantined people.

This helps the state to relieve the teams engaged to carry out this activity and healthcare bodies to get visibility of quarantined people data in the fastest time possible; thereby, enabling them to plan their actions in a more agile way.

In addition to this, the state control center also sends important regular updates and communication to state leadership on a user-friendly channel such as WhatsApp or email using bots.

Multiple organizations are also effectively using RPA in the background of the COVID crisis. Recently, Sterlite Technologies leveraged RPA to process the salaries of their employees in due time and timely invoicing and payments to their stakeholders for all critical projects. Another example is Shree Malani Foams, a manufacturing company for polyurethane foam, implemented RPA to help manage functions like eway bill, order management and customs documentation. This helped the company to work in a command centre set up with a central team managing important work and resulted in a seamless work from home experience for its employees.

We are not only witnessing an increase in the adoption of automation in real time, but also seeing new use-cases developed daily, and more organizations and sectors turn towards automation with seriousness and intent.

LEVERAGING TECH TO STAY AHEAD DURING THE CRISIS

Sectors like mobility and supply chains certainly face challenges and hence, this self-drive mobility platform is leveraging the potential of technology to stay ahead during these unprecedented times

Markish Arun

In the wake of the COVID-19 outbreak across the world, businesses are reeling severe stress to ensure uninterrupted business. The pandemic has brought several businesses and livelihoods to a screeching halt due to many countries being placed under complete or partial lockdown. To contain the virus that has infected over 3 million people worldwide, people are being strongly advised to stay indoors, practice social distancing and follow proper hygiene protocols.

The outbreak and the nationwide lockdown are now urging the businesses and citizens to rely on technology for adjusting to the new state of normalcy. Sectors like mobility and supply chains certainly face challenges and hence, self-drive mobility platform Zoomcar is leveraging the potential of technology to stay ahead during these unprecedented times. Here's how the brand has revamped its services with the help of innovative new-age tech mechanisms.

Enhanced customer services: Zoomcar's model of working is entirely digital. From booking cars through its app to picking up and dropping it off, the brand is using a 'Keyless entry' concept which automates the customers' entire trip. However, despite running on a robust technology-based business model, maintaining continuity of a B2C business in times when there is a temporary ban on commercial transportation can be a daunting challenge. To resolve this issue, Zoomcar has tied up with essential service providers such as hospitals, and grocery/food delivery brands and allocated its select fleet of over 10,000 cars to help with mobility-related woes.

The brand is ensuring that mobility-as-a-service is available for anyone who is in need of it by providing cars for personal emergencies on demand, thereby boosting its customer services. This additional service, which follows social distancing rules and is the need of the hour in case of medical emergencies has struck a major chord with its customers. With refurbished

subscription plans, Zoomcar now offers the option of subscribing to its car rental services from a starting plan of 1 month. Customers can avail the subscription plan for up to 36 months.

Adhering to safety and hygiene norms: Zoomcar's keyless entry system using cutting edge technology such as IoT immensely minimizes physical contact with the surfaces. The keyless feature allows users to unlock it and find a clean, sanitized key placed within the vehicle. Each car is sanitized thoroughly using a disinfectant spray and paper towels before and after each use. In addition to this, the car rental services brand is also training its employees regarding safety and hygiene protocols to offer an immaculate experience for customers while keeping themselves safe. The company also plans to show near real-time sanitization of the cars to customers at the time of booking.

Upgraded mobile app: Zoomcar has tweaked its app to offer the best-in-class services to its customers. Through the app, which uses state-of-the-art customer technology such as AI and ML, customers can reach out for any query or feedback through chatbots, emails and calls whenever required. Apart from this, the app also allows customers to reschedule their booking an unlimited number of times in the face of uncertainty or urgent commitments. Zoomcar's digital payment gateway also offers a seamless experience and provides refunds instantly in the event of a change in their plans.

Resource optimization with reduced cost: With social distancing and remote working becoming the new norm, there is a need to restructure and reassess the IT infrastructure planning. Zoomcar is investing more in new-age technologies to help keep the team connected in a flawless manner. Considering the current scenario that the world is dealing with, this investment will prove to be useful in the longer run. With the traffic going down, cost reduction is necessary. Keeping this in mind, Zoomcar is re-evaluating its cloud services to make it a pay-per-usage model.

In its bid to cope with the unprecedented and arduous times, Zoomcar is driven by a single motive of ensuring continued services and minimize any disruption in essential services. The world's war against coronavirus requires the private and public sector companies to join hands and offer pragmatic, comprehensive solutions that resonate with society's current requirements, let the world bounce back to normalcy sooner.

Author is Vice President of Engineering, Zoomcar

> In the era of the epandemic and lockdown, it is impertative that the mobility sector comes out with one innovation after another to keep going

INDIA HAS UNDERGONE A DYNAMIC SHIFT

Businesses with advanced digital set-ups have been able to cope with the pandemic much better than those that haven't, feels Rao Surapaneni, Vice President of Engineering, ServiceNow

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How has the COVID-19 crisis changed the way we view technology and as a result of that, how has the future of work changed? Will most of everything now be digitized?

Digital interaction has become a much larger part of life during this pandemic. From connecting with our colleagues, to being in touch with family & friends, our day-to-day communication is now solely through digital means. Businesses with advanced digital set-ups have been able to cope with the pandemic much better than those that haven't.

India has undergone a dynamic shift in the past

few months. The country has quickly adapted to a new way of working led by digital technology, and connecting remotely has become our new normal. The recovery from COVID-19 will not be static—it will be a slow and steady healing process while we adapt to major changes in the way we work. Organisations that do not have robust digital infrastructure will need to quickly invest in building these systems, given its will be unlikely that things will return to what once was before the pandemic, even after workplaces start to re-open.

According to Deloitte, the future of work will be a combination of employees working remotely, while still coming together at the workplace for specific functions. In an effort to recover from this pandemic, companies will focus on implementing technologies that will help connect across departments and streamline workflow systems. This is an important aspect for re-engaging the workforce as organisations will now see a shift in focus to post-pandemic work priorities and routines. Recognising this, we recently announced the release of a Safe Workplace app suite, which will help organisations to examine their workforce and workplace, helping employees return to work safely.

Digitalisation will play a huge role in our future of work. This unprecedented situation has encouraged companies to embrace digitalisation, giving hope for a future which is led by humans solving and achieving complex tasks, allowing automation and digital workflows to take care of the mundane, repetitive routines, thereby unlocking employee productivity.

> **While a lot of companies are taking steps towards digitalisation, it is very important to put people at the centre of your transformation to facilitate collaboration and provide insights that improve decision-making**
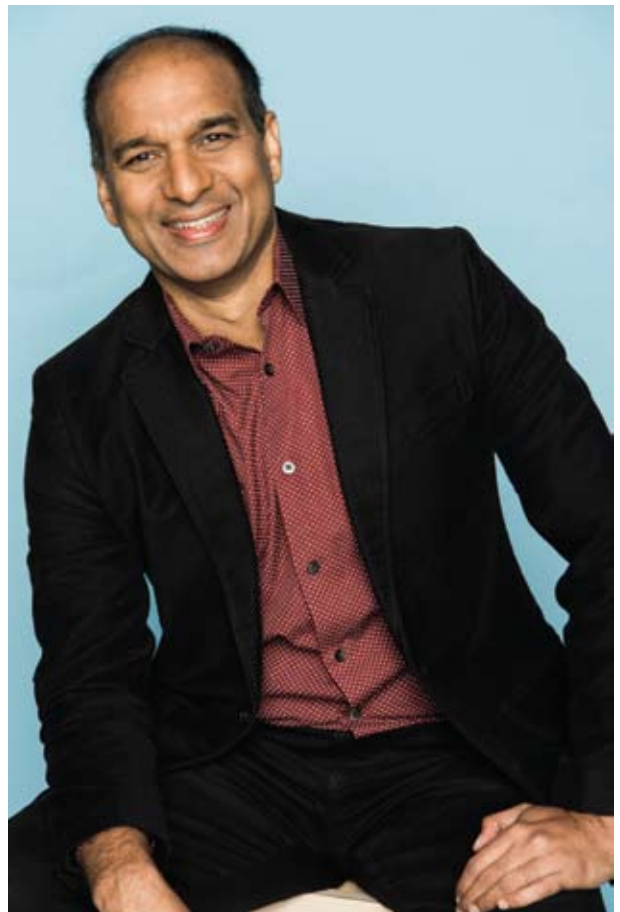
RAO SURAPANENI, Vice President of Engineering, ServiceNow

Are there any specific technologies that Indian companies are chasing and using more as a result of this crisis?

The pandemic has pushed companies to adapt to new technologies in order to streamline their workflow systems in a bid to ensure a smooth, remote working processes. Firms have adopted technologies like virtual desktops, remote collaboration tools, cloud based drawing boards, online interviewing tools and self-service tools like chatbots, to be able to serve a better experience to both their employees and their customers. Apart from being convenient, companies are also realising the cost-efficiency quotient of these technologies. At ServiceNow, we have seen an increased customer interest and usage in remote IT and employee service requests.

How can you improve employee experience, communication and productivity in this new WFH era?

One cannot talk about improving employee

productivity without first equipping employees with the right tools to maximize their potential. Enabling employees with self-training tools, knowledge data base and virtual assistants will ease their work and increase productivity. For new employees, a smooth and seamless digital onboarding process will ensure a great experience and help them adjust to their new surroundings.

At ServiceNow, we aim to build employee experiences and workflows that are as good as the best consumer experiences. Especially now, this becomes very important for companies to remain competitive. For this reason, we encourage an environment of open dialogue and collaboration to work together and deliver for our customers. While a lot of companies are taking steps towards digitalisation, it is very important to put people at the centre of your transformation to facilitate collaboration and provide insights that improve decision-making.

With more and more companies shifting to the cloud, what about security and privacy concerns?

Security is fundamental for companies such as ServiceNow who are born in the cloud. Our years of experience and growth have been dependent on our ability to provide highly secure services. We carry out continuous testing, invest in ensuring security certifications for our data, service and infrastructure. When we handle data and critical services for customers, whether private or government-owned, we ensure that we maintain the highest security and privacy standards.

How is Artificial Intelligence being used to cope with this crisis and will it play a greater and greater role as we move forward into the post-COVID world?

AI has taken centre stage in our country's fight against COVID-19. Scientists and doctors are using AI to predict and model the infection rates and death rates. It is being used to analyse risk factors and test treatments at the enzyme level.

At a corporate level, AI is all set to play a major role in the workplace. When the time is right for ServiceNow employees to return to the office, they will be returning to a very different office environment with a variety of social distancing measures applied. As the office space utilization patterns change, we expect to use AI to predict capacity and help workplace services teams to operate efficiently. For this, organisations will need powerful AI and analytics capabilities that will

enable employees to work smarter and faster, while streamlining business decisions.

Our Orlando release of the Now Platform offers the solution to an efficient workflow. It enables employees to work faster, solve problems, find answers and automate tasks- making their lives simple and convenient. Helping enterprises deliver a great customer and employee experience, the Orlando release offers Analytics, Intelligence and Mobility solutions.

How are you personally coping with this lockdown and any specific tips to companies and WFH employees to cope?

As most of us are, I have been spending a lot more time with my family and connecting with my colleagues in the evening for chats over coffee, to cope with the lockdown. It is not an easy time for anyone but technology is helping us keep in touch with our near and dear ones.

Personally, it gives me immense satisfaction to help lead the organisation through these unprecedented times. Our employees have been working hard and making work life, work better for our customers during this pandemic. That purpose is what drives me and rest of the organization.

It is important for companies to focus on their customers in this time of need and fill in the gaps by providing solutions wherever required. At the same time, it is equally important for organisations to be empathetic to their employees' needs. This is a difficult time for everyone and it is important to acknowledge employees' anxiety for personal and family safety. At ServiceNow, we ensured that our employees are settled into the new way of working by supporting them with flexible time arrangements and regular fun and interactive team sessions.

Maintaining communication and constantly engaging with your employees on company and business updates during this time is very important. ServiceNow globally announced no layoffs in 2020 across its offices, to take away the stress of job loss/ job risk from its employees.

COVID-19 is an unprecedented humanitarian challenge that has brought with it a new way of working. I believe that tremendous business opportunities are created when industries undergo rapid change. The whole world is undergoing a change like never before, and this is the time to recognize how we can help people and organisations and innovate to solve their problems.

THERE IS NO AI WITHOUT IA

Artificial Intelligence requires Machine Learning; Machine Learning requires analytics; and analytics requires the right data and Information Architecture (IA). In other words, there is no AI without IA, explains Anil Bhasker, Business Unit Leader, Analytics Platform, IBM India/South Asia

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Is Big Data and AI proving useful to track the progress of the COVID-19 pandemic? How is it being leveraged?

The pandemic having spread all over the world has generated data in various forms, at different rates and high volumes—which has spurred the need and use of Big Data analytics and AI in predicting the spread. Big Data analytics helps all this data to be properly transformed into information that can then be mined for purposes like researching the spread, creating prediction models, etc. The flattening of the curve that we hear constantly comes from having analyzed the data.

At IBM, we have been helping government agencies, healthcare organizations and academic institutions throughout the world use AI to put critical data and information into the hands of their citizens. The AI-enhanced interactive 'Incidents Map' of COVID-19 data & stats in IBM's The Weather Channel app & weather.com is helping our users stay informed of the ongoing pandemic. The Indian Council for Medical Research (ICMR) has collaborated with IBM to implement a Watson virtual agent (called Watson Assistant) on its portal to respond to specific queries of front line staff and data entry operators from various testing and diagnostic facilities across the country on COVID-19. This is helping boost ICMR's response time and is allowing them to concentrate on priorities like developing & updating testing & treatment protocols and guidance for COVID-19.

In the future, how can we use AI to monitor and predict the rise of pandemics?

Analytics and AI does a great job of finding patterns & trends in data; and with the proper modeling, data from unstructured (news, social media, etc) and structured (patient data, etc.) can be used to predict spread and also prescribe proper approach to minimize it. AI is very useful in the medical industry, but there are a lot of regulation and privacy issues.

Do you see a forward movement of AI in this field thanks to the urgency that has resulted in the current pandemic? How can AI help here?

This pandemic is a wakeup call for everyone—this shows how fragile our connected world is and we need to ensure to leverage the positives of a connected world (the availability of data) and funnel it properly towards analytics and AI to ensure positive outcomes. Having said that, privacy is a very valid and important factor; masking cleansing the data so

ANIL BHASKER, Business Unit Leader, Analytics Platform, IBM India/South Asia

only the pertinent data points that don't single out a person can be used in the modeling. IBM Watson Health was created to help solve some of the world's most pressing health challenges through data, analytics, AI and hybrid cloud. IBM Watson Health helps health professionals and researchers around the world translate data and knowledge into insights to help them make more informed decisions about care for their patients. It has delivered unprecedented insights—trusted, secure and actionable information we could also use to train Watson in value-based payment models, radiology, oncology and clinical trials.

In today's Work From Home era, digital transformation will be speeded up. How can organizations big and small use AI to and transform and streamline their businesses?

The pandemic has created a paradigm shift in terms of our perception of business as usual. There are many ways AI can help—helping employees find information quickly and work efficiently, build more secure connections, ensure proper work-life balances, etc. To break it down, AI requires Machine Learning; Machine Learning requires analytics; and analytics

requires the right data and Information Architecture (IA). In other words, there is no AI without IA. These capabilities form the solid rungs of what we call the AI Ladder—the increasing levels of analytic sophistication that lead to, and buttress, a thriving AI environment.

We also recently announced a broad range of new AI-powered capabilities and services that are designed to help CIOs automate their IT infrastructures to be more resilient to future disruptions and to help reduce costs. Watson AIOps enables organizations to introduce automation at the infrastructure level and is designed to help CIOs better predict and shape future outcomes, focus resources on higher-value work and build more responsive and intelligent networks that can stay up and running longer. Accelerator for Application Modernization with AI is another new capability designed to help clients reduce the overall effort and costs associated with application modernization.

Have any of your research projects helped organizations during the lockdown and how do you see the future of AI research going from here? Will we become more dependent on AI?

In our efforts to fight the COVID-19 pandemic at a global level, IBM, in collaboration with the US Department of Energy launched the COVID-19 High Performance Computing Consortium—that brought together Government, Industry and Academia to fight coronavirus with all the tools including some of the sophisticated super computers ever built. This consortium has made available 400 petaflops of computing power (for free) to researchers and scientists everywhere, accelerating their efforts to understand COVID-19, its treatment and potential cures. The consortium recently approved NIT Warangal to run an experiment on the study of dependence of structure and dynamics of novel SARS-CoV-2 on temperature and humidity in the atmosphere.

At IBM globally, to help researchers access structured and unstructured data quickly, IBM Research has developed a cloud-based AI research service that has ingested a corpus of thousands of papers from the COVID-19 Open Research Dataset (CORD-19) and licensed databases from DrugBank, Clinicaltrials.gov and GenBank. This tool uses advanced AI, allowing users to make specific queries to the collections of papers and extract critical COVID-19 knowledge—including embedded text, tables and figures.

> **There is a paradigm shift in our perception of business as usual. There are many ways AI can help employees find information quickly and work efficiently**

We have also granted free access to our considerable patent portfolio to those developing technologies to help diagnose, prevent, contain or treat coronaviruses, including the one that causes COVID-19. Our pledge covers thousands of IBM AI patents, including Watson technology patents, as well as dozens of active U.S. patents in the general area of biological viruses.

Furthermore, to help researchers generate potential new drug candidates for COVID-19, IBM has applied our novel AI generative frameworks to three COVID-19 targets and have generated 3000 novel molecules. We are sharing those molecules under a Creative Commons, with the hope that the research and drug design communities can accelerate the process of identifying promising new drug candidates for coronavirus and potential similar, new outbreaks.

What about the dangers and issues of bias in AI? There are still a lot of apprehensions among the common populace, thanks to things like rogue AIs in Hollywood movies.

Hollywood's version of AI is generally too dramatic and futuristic. But, bias is something that everyone needs to be concerned about. The need in the AI space is to be able to bring trust in the models. IBM has done a lot of research in this space and built solutions that helps data scientists build unbiased AI models and also help enterprises monitor & de-bias the models (in case bias is detected) without having to retrain the model, thus saving time and effort. Another aspect that helps build trust is explainability—IBM has built the capability that is able to say in plain English on why a model predicted a particular outcome. Another key aspect that I touched upon earlier is IA, which has to be robust for any AI to perform unbiased. If the right & trustworthy data is not fed to the downstream AI application, the output will be skewed and the very purpose will be defeated.

HOW CONVERSATIONAL SERVICE AUTOMATION CAN BOOST YOUR CONTACT CENTER

CSA has the capability to provide a massive overhaul to how contact centers function by using Artificial Intelligence, Machine Learning Natural Language Processing and RPA

Umesh Sachdev

The crisis brought on by the COVID-19 pandemic has created huge upheaval across industries. Just as hospitals needed to ramp up capacity, contact centers today need to handle more calls than they have had to before. Additionally, they have to support those calls with a workforce that cannot meet in tightly packed office spaces. People showing even the slightest symptoms are being advised to call their physicians, instead of walking into a hospital, in order to reduce the burden on the already pressured healthcare system and to prevent the spread of the virus.

It is not only healthcare companies that are seeing an uptick in call traffic. There are huge spikes in the number of people calling government agencies, telecom utilities, banks, travel companies, etc., as life as we knew it has been dramatically changed over the past few weeks.

Typically, contact centers are designed so that hundreds of workers can sit at a centralized office location with designated areas and managers and supervisors, on hand to closely monitor the teams. But the COVID-19 pandemic has forced these centers to shut their offices as per government mandates. While India is a major hub for offshore call centers, a lot of these workers do not own laptops and high bandwidth internet, which are the primary requirements for remote working. Over and above physical connectivity is the need to ensure compliance for data sensitive verticals such as in the BFSI sector. Most of the legacy technology used by call centers are just not equipped to monitor and assist human agents working remotely, and COVID-19 has brought that inefficiency into sharp focus.

Automating conversational service a better way to approach it

Conversational Service Automation (CSA) is an emerging category of technology whichhas the capabilities to provide a massive overhaul to how contact centers function by using technologies such as AI, Natural Language Processing, Machine Learning and Robotic Process Automation. It enables businesses to save money while providing transformative customer experiences. More importantly, it can allow a call center agent to work remotely thus ensuring his/her safety.

CSA also provides an intelligent self-service option to customers, thus reducing the burden of calls on an agent and enabling the agent to focus his energies on providing more personalized service where required. Via this option, simple things like ticket booking, cancellations, money transfers, doctor appointments, etc., can easily be addressed. A solid CSA platform can identify a distressed caller and can seamlessly and immediately transfer the call to a human agent. In order to further aid the agent, CSA can also procure information on customers' needs, intent and sentiment along with relevant customer data on recent transactions and requests, to enable the agents to render accurate responses to customers in real time, every time.

The technology has the capability to intelligently assist the human agent and handle mundane tasks such as preparing a call summary sheet, extracting the conversation history or pulling up the caller's background at the onset of a call, so that efficiencies are introduced and the time spent on each call is drastically reduced.

During a global crisis when agents need to work remotely, some contact centers will struggle with tight restrictions and regulations for the transmission and storage of Personally Identifiable Information (PII). Today, a cloud-based CSA solution can actually redact PII in real time, before it gets to the agent and then monitor the call to ensure other elements of compliance. This is a huge benefit and facilitates remote working while being compliant with government regulations.

The New Normal

The pandemic has pushed the world to change faster. Businesses that were planning to automate in the next couple of years are being forced to take that decision right now. Contact centers are stepping up with AI and automation driven systems as they begin to understand the value of such emerging technologies. With a change in the way business will run in a post-COVID world, the need for automation in contact centers will keep growing. CSA will be the new normal for call centers in the next couple of years.

The author is co-founder and CEO, Uniphore

> **CSA provides an intelligent self-service option to customers, thus reducing the burden of calls on an agent and enabling the agent to focus his energies**

THE FINAL SURGE TOWARDS THE CLOUD

On the personal front, data stored on the cloud will surge as one interface multiple devices concept grows (take your data anywhere)

Monish Matthias

Unprecedented—would be the right word to use for the changes we have seen in the world due to COVID-19. COVID has initiated a massive cultural shift, towards a trust-based and output based model, far away from the micromanagement or physical presence based model. Here are a few technology transformations which will have a ripple effect on our lives.

Digital transformation would see an acceleration growth and adoption.We are witnessing a massive change in customer patterns due to digital wallets, surge in internet penetration, e-commerce will continue to see strong growth and online transactions will soar. Infrastructure providers will benefit as VPN usage grows and security becomes the core of everything we do.

Technology in hardware and personal digital accessories world will advance. Companies will move to laptops to ensure more mobility, individuals will invest more in personal digital accessories.

The investment will be heavily done in good enterprise solutions that support collaboration and real-time interactions. **Business Continuity Planning** tools and large scale advanced employee notification systems will take the centre stage.

Cloud will be the norm—Cloud adoption and usage has been on a surge for long, but this might be the final surge as organizations move to more sophisticated interactive and collaboration tools —they are all driven out of the cloud. Also on the personal front, data stored on the cloud will surge as one interface multiple devices concept grows (take your data anywhere).

Cybersecurity—With more machines connecting from different parts of the world on different connectivities, a wide range of ISP's—the threat to the organizational assets will become higher and cybersecurity will become a focus area. Including tools such as scanners and two-factor authentication systems will gain priority.

Non touch technologies will evolve rapidly— Tools and devices that leverage technologies such as bluetooth, infrared, NFC, thermal scanners, vision recognition will surge as the social/physical distancing rules continue to be followed religiously.

The author is Senior Director, Software Development, Global Development Center, (Bengaluru), Sabre Corporation

MAKE WAY FOR THE NEXT-GEN HR TECHNOLOGIES

Due to the COVID-19 pandemic, work from home has already become the new normal, and technologies like AI and ML are likely to become more relevant in the HR sector

Prasad Rajappan

The COVID-19 pandemic has disrupted the global economy with a pervasive impact on almost all sectors. The human resource sector is no exception. Going forward, the proliferation of next-generation HR technologies will redefine the segment. A beginning has already been made with the work from home emerging as a new normal amidst the lockdown. Here are the top technologies that are likely to emerge more relevant in the HR sector in the post-COVID-19 era.

Artificial Intelligence

Though Artificial Intelligence has been around for some time, it is expected to play a more predominant role. The lockdown has replaced face-to-face interaction with a digital mode of communication. This has had an obvious impact on the hiring process. Going forward, Artificial Intelligence is a way forward in the hiring process.

AI can sift through online resumes and social media profiles and identify prospective candidates

based on key traits. It can also remove human biases during screening and be the first step to foster a gender-neutral workforce. Additionally, recruiter chatbots can answer the queries and grievances of candidates in real-time, provide links to job descriptions, apprise the candidate on the next steps of recruitment and much more.

Machine Learning

The role of Machine Learning cannot be underestimated in the HR function. Besides screening candidates during hiring, leveraging ML during video-based interviewing can gauge the mood of an interviewee and get an idea if he is being truthful on his credentials. The use of ML-powered chatbots can be of great utility in the onboarding process.

This is significant as hiring is taking place through a virtual model that has certain drawbacks such as lack of personalization. Machine Learning can also be used to gain feedback from employees. ML can identify key themes and recurring issues in the feedback questionnaire to improve the overall experience.

Data Analytics

The ongoing COVID-19 crisis has underscored the relevance of collaboration among different departments of the organization. This implies that HR needs to increasingly work in tandem with the Finance department as workforce expenditure forms a significant portion of expenditure for the company and its overall financial health determines the size and composition of the workforce.

This assumes more importance in the wake of most firms suffering from a liquidity crunch during the lockdown. Data analytics can help in making data-backed and informed decisions in attracting, managing and retaining the workforce. It can be used for exploring linkages between tangible goals and outcomes, improving productivity that ultimately impacts the bottom-line of businesses. It can also help in the automation of certain tasks thus freeing the employees from redundant tasks and focus on their core functions.

Robotics

Robotic process automation can replace the repetitive, clerical and mundane operations in the HR function. With the firms increasingly downsizing the workforce and automating processes amidst COVID-19, the robotic process can simplify processes such as hiring, benefits and compensation, general HR tasks,

PRASAD RAJAPPAN, Founder & CEO of ZingHR

training and development and employee relations.

During hiring, the use of the robotic process can help in uploading data such as personal information and identify errors in the data processing. It can significantly reduce the hiring time by performing the necessary paperwork without human intervention. It can also be useful in performing compliance checks.

Blockchain technology

Blockchain technology has revolutionized the fintech and insurance sectors. It has immense and untapped potential in the HR domain. The COVID-19 scenario has led to several firms increasingly focussing on the upskilling of employees to utilize the time saved in commuting while working from home. Blockchain technology can disrupt the training and development function in HR by verifying and gauging the educational background, skills and performance of employees. It can also increase productivity by automating routine tasks as well as can regulate financial transactions such as cross-border payment and tax liabilities.

Hence it can be assumed that the post-COVID-19 scenario will usher a new dawn for the HR-tech sector.

The author is Founder & CEO of ZingHR

HOW UX AND UI CAN DRIVE BETTER CUSTOMER ENGAGEMENT

Screen sizes to access web has now varied from 15 to 5-inches, to ensure that your website or app visitor has an good experience, you need to understand their requirements, if not all, at least the requirements of the largest number of visitors

Hareesh Tibrewala

In a world where the size of the screen that we use to access the Web, has now become small on account of the mobile phone, and the attention span has become even smaller, it is all the more important to ensure that your website (or app) visitor has an extremely good experience when on your webpage…else all the marketing dollars that you spend to get the visitor to the site, goes poof ..all in a few seconds.

The term UX and UI keep getting used interchangeably but both are two different sciences. UX denotes Customer experience. Every time your customer comes in touch with your product or service, he or she is going to have an "experience".

That us UX. Thus the laptop on which you are reading this article has a certain kind of experience for you.

And the chair on which you are sitting right now also is creating a certain experience for you. When you stand in a line in your bank to deposit a cheque, you again going through an experience. Designing this experience such that it meets the needs of your user base, however disparate or differentiated that base may be, is called UX.

On the other hand, UI indicates User Interface Design. It is the interface using with the user can engage with something and generate a response. So in the example above, the laptop has a UI, but a chair

does not have a UI (nor does the queue in the bank). UI is a term generally used in conjunction with digital platforms like websites, apps, instruments that can be operated using buttons or touch-screens etc.

In the good old days (when the Internet first came to town in the late 90's), the starting point for a website design was an attractive looking layout, which had a very brand-centric communication, and then HTMLising that design, plugging in the content and the site was up and running. Over the past two and half decades, the Internet has exploded.

And for any business that is drawing traffic to its website, it has to address the needs and requirements of different types of visitors by organizing the information in such a fashion that everyone's needs can be met in the shortest possible time.

Imagine a hotel website: there will be people coming to the website to make a quick booking (they know exactly which hotel and what dates). Someone else is coming just to check his loyalty points and how best can he use them. Someone wants to see the cheapest hotels being offered in a location while someone else wants to look at the hotels by guest rating.

And yet there may someone else who has a specific requirement of a pet-friendly hotel. Understanding each of these different types of possible visitors to the hotel websites, understanding their specific requirements, and then being able to craft an outcome that meets, if not all, at least the requirements of the largest number of visitors, and leaves behind a very good impression of the brand… that is what a good UX-UI can deliver.

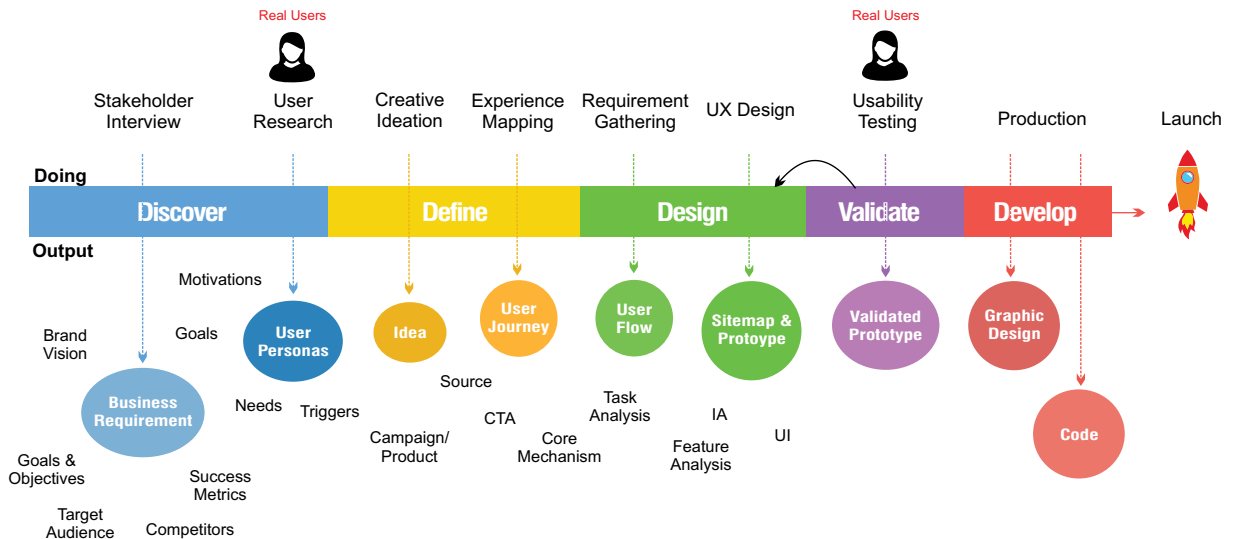## So if I need to represent this visually

HAREESH TIBREWALA, Joint CEO of Mirum India

(Courtesy: Barbara Ann Kipfer, The Order of Things)

What Does the UX and UI Process Involve?

The above diagram lists out the many steps involved in the entire UX and UI process.

• Stakeholder Interviews

Here we speak to all the stakeholders from the brand side (marketing, sales, leadership, technology, IT, digital) pretty much everyone who is invested in the customer experience and gather information about what is the brand vision, what are the various goals and objectives of the digital build, what are the different target audiences, what would we want people to do when they come on the website, what are our key success metrics for the website, etc.

• User Research

This involves actually doing interviews with users who represent the various diverse target groups that the brand wants to reach out to, understanding their motivations in engaging with the brand, what goals do they want to achieve when on the website and their motivation drivers.

• Creative Ideation

Here we identify what are a different kind of user journeys that seem to be emerging basis the user interviews. How is the user reaching us? And what does the user wish to accomplish and how does that align with stakeholder goals and success metrics.

• Experience Mapping

We craft complete end-to-end user journey for each of the cohorts, we identify specific touchpoints on the web build, what kind of content is the user looking for and how to help the user reach his goal and objective, fully informed in the shortest possible way

• UX Design

Next is the design phase. Wireframes are created based on experience maps. These are generally clickable wire-frames so they very closely represent actual journey the user is likely to take

• Usability testing

the wireframes are now tested by doing usability tests with actual potential users. Using eye-movement and thumb tracking software, one is able to understand how easy (or difficult) was it for a given user from a given target group, to find what one was looking for on the website and to complete the desired user journey. If users are taking longer than the desired time to reach the desired CTA (call-to-action) or are getting lost in the navigation…it clearly means that one has to go back to the drawing board and rework on the experience mapping and UX design.

• Production

A successful usability test means that our experience mapping and UX design is working. Now is the time to get the aesthetics (graphic design) and content in place and also start the tech development of the web build. A peer-to-peer code review process ensures a bug-free outcome.

• Launch

And now your web-build is ready for launch!

The Author is Joint CEO of Mirum India

HOW TO SECURE CLOUD NATIVE APPLICATIONS?

Hackers are smarter, discovering new zero-day vulnerabilities and developing sophisticated way of attacking cloud applications, so that leaves your production environment vulnerable to attacks

Bhuvan Bhatt

Cloud Native is a buzzword used to describe the new generation of cloud applications; ones made to run in the cloud in a scalable, automated fashion. Public cloud is forecast to be US$~350 Billion by the year 2022 and when the market grows, challenges grow with it as well. Security is one of the biggest challenges in this rapidly growing market. These days, Security is a very important aspect for any organisation, and it may cause damage. It's not just loss of business continuity and revenues, but also the loss of reputation in the market, making customers will think twice before buying again from you. Having 7 years of experience in the security domain and seeing the security products from the eyes of Developer, QA, Product Manager and R&D head, I have seen the "shifting left" of security into

the development process in many organisations. It starts when developer writes the code and continues through deployment to the application running in production.

Fast moving industry with cloud technologies

The industry is very agile and dynamic, and things move faster than ever, with container and cloud updates. Upgrades happen in environments within minutes.With this, fast-paced security becomes the biggest challenge. To help with security we need an end-to-end security solution from dev to prod and provide security right from the development process and bridge the gap between developer, DevOps and the security team. Cloud made a lot of things easier and faster for organizations, and adoption is happening at a fast pace, which is why we must be quick with security as well. When you have a registry with 100,000 container images that are used in your production environments, then it is very important that you ensure that those images don't have container vulnerabilities, malware or other security issues, and do so in a way that doesn't slow down development.

Key security challenges

When enterprises want to reap the benefits of cloud technologies, at the same time they need to make sure of securing their environments against any security issues, data breaches or data loss. While moving to the cloud places some of the security burden on the cloud providers (especially around infrastructure and networking), customers who remain responsible for the security of their own applications, user authentication, and compliance. Data loss is another challenge which may happen through accidental deletion or malicious tampering like DDoS, which could be disastrous for any

Security should be considered during the architecture & design phase of development, so that possible threat scenarios are considered upfront. Mitigating controls & compliance should be in place

BHUVAN BHATT, R&D Head, Aqua India

enterprise business. With these kinds of challenges what are the actions enterprises can take? Your cloud must have right Identity management and access control, encryption, auditing, secured API, authentication and authorization. But you must ensure the security of your code, monitor your applications for indicators of attack, and ensure that your cloud services are properly configured against your security and compliance needs.

Preventive measures: Shift left with security

Historically, security was enforced outside the application development phase. This changed with DevSecOps, an approach that makes it easier and more effective to find security issues earlier in the game, when development happens. It means that security should be considered during the architecture and design phase of development, so that possible threat scenarios are considered upfront. Mitigating controls and compliance requirements should be in place to counter threats before they actually occur. Today enterprises use their CI/CD pipelines to find security issues, bad configuration, malware and many more issues, preventing deployment of applications with security issues, rather than deploying them only to discover the security flaws when the application is already exposed. Having a DevSecOps practice or
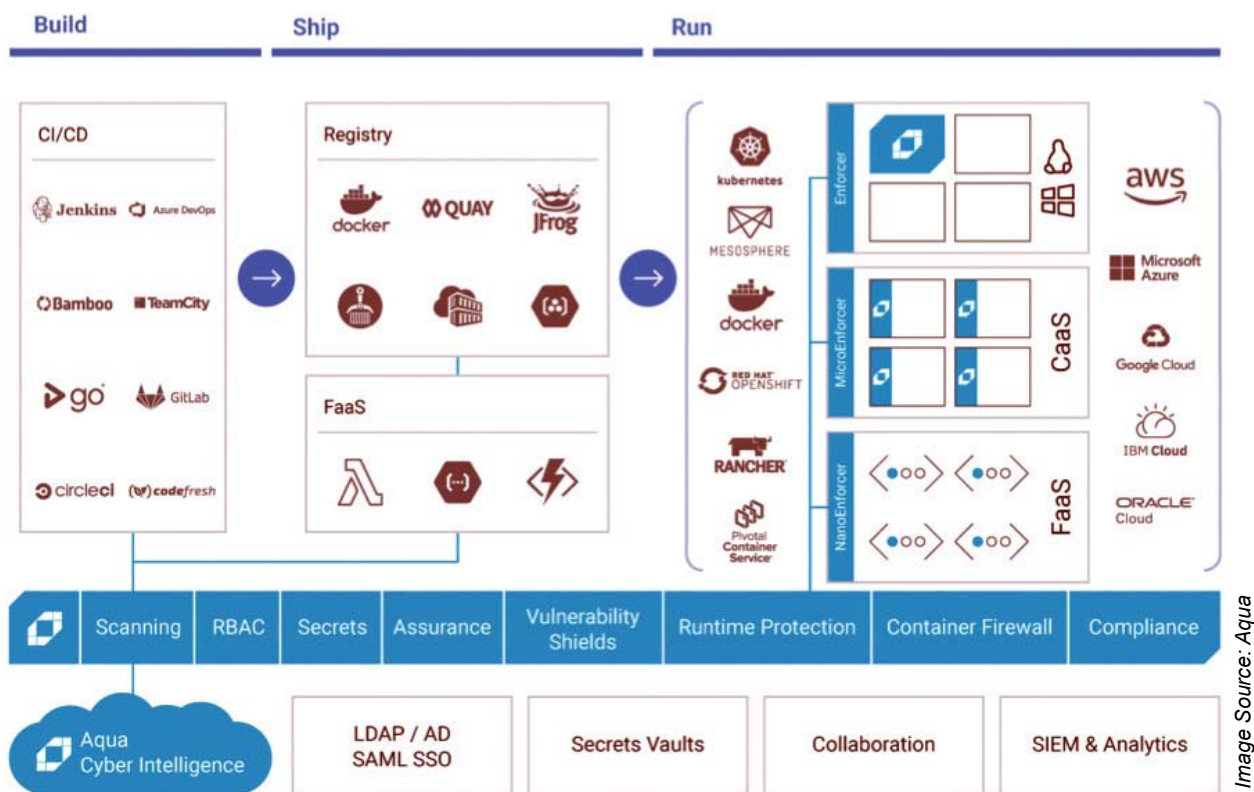
Image Source: Aqua

process in place, enterprises can reduce the impact of security flaws and reduce the attack surface from the start. It's a necessity for any enterprise when moving to cloud.

Is the shift left enough?

Now the question arises whether it is enough to only consider security during development, having taken care of all the security flaws, and considering the application to be bulletproof. The truth is that it is not enough. Hackers are smarter, discovering new zero-day vulnerabilities and developing sophisticated way of attacking cloud applications, so that leaves your production environment vulnerable to attacks.

How to secure cloud native then?

To secure your cloud environments even though we have taken care of that in our CI/CD pipeline we need to make sure of following principles.

1. **Vulnerabilities Management:** Run continuous and regular scan against vulnerabilities for your cloud environments and application.
2. **Audit and Compliance:** Run audit, monitoring and compliance scans using cloud posture management tools. Have a strong auditing capability in the system with right integrations

in place to find out the as well as stop the attack if situation arises.

3. **Scanning:** Scan your clusters and cloud infrastructure against benchmarks and best practices.Follow and run benchmarks for your environment e.g. CIS Benchmarks for Docker, Kubernetes and Linux.
4. **Penetration tests:** Run Penetration tests on your clusters
5. **Right access to right resource:** Work with least privilege rules and provide only enough access which is required.
6. **Runtime protection:** Ensure that your workloads are monitored and protected against unexpected changes, anomalous behaviour, and automated threat detection and blocking.

To Summarize, securing your cloud infrastructure and applications is part of the journey to the cloud and it should be considered as part of your cloud native journey with containers and Kubernetes, serverless. Development team, DevOps teams and security teams need a unified view to bridge the gap between the teams and to handle security issues effectively and quickly.

The author is Aqua India R&D Head

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SURGE IN SOCIAL GAMING DURING THE LOCKDOWN

People stuck at home are majorly turning to OTT and gaming platforms for entertainment. The surge being observed currently is definitely temporary. However, COVID-19 has helped the gaming industry evolve at a faster pace, says Saumya Singh Rathore, Co-Founder, WinZO Games

Sunil Rajguru
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Has there been a surge in the gaming industry during the COVID-19 lockdown and what does that look like in terms of statistics and specific games being played?

The need to stay connected and socialize during this pandemic is causing this surge in Social Gaming. We are seeing the multiplayer modes on the platform grow three folds. Private tournaments and Vs-Mode (a feature wherein players play with friends & family) on our app has grown considering people are playing with their friends online amid the lockdown, suggesting that people are interested in connecting with their friends/loved ones online via gaming these days—almost as if gaming is a conversation facilitator. Multiplayer games like Carrom, Ludo and Battle Royale have seen twice the game play time.

Moreover, there has been an increase in playing time for casual games like Bubble Shooter, Knife Up, Subway surfer. Activity on the social features of the app such as video and audio usage during game play has also doubled.

Time spent and the number of users has grown to almost 5X, recording an all-time high. We are observing a 30% spike in Tier-1 traffic daily on our platform, though we do not even market our product to this category of audience, we are a Tier 2 to Tier 5 focused vernacular product where 80% of the audience is consuming the app in vernacular languages. Hence, we are consciously evolving the content on the platform to meet the entertainment needs of this new audience that we are adopting. We tied up with Tencent Games and Garena for PUBG Mobile and FreeFire in this lockdown. We also added Chess and Ludo within a span of 2 days to cater to this new audience. These games are made available for free on the platform. Our focus is less on monetization and more on facilitating smooth social connections possible for the world to feel less isolated—to reduce the mental health impact—if we lose some revenue in the process, it's not a big loss.

Interestingly, we have also observed increased game plays by female gamers (1.5 times) on games like candy crush and cooking competition games.

What does the future of the gaming industry now look like in the post-Covid era and how will gaming apps pan out?

People stuck at home are majorly turning to OTT and Gaming platforms for entertainment. The surge being observed currently is definitely temporary. Covid has for sure helped the gaming industry evolve at a faster pace. At WinZO the peak hours/ prime time for gaming has changed to 11am to 5pm, which was earlier 7pm to 11 pm in the evening. This shows people are spending more time during the day playing online games—and spending the evenings with the family. Our concurrent users are increasing day on day at 30%-40%. The paid conversions have increased by 20%, suggesting that the sentiment of paying is not impacted—yet.

Having said that, we think we will not be seeing the same rate of growth as of now post lockdown as the number of hours you get in a day for entertainment and gaming will reduce drastically. At the same time, we strongly feel, the word of mouth of the quality gaming platforms will keep seeing steady growth post lockdown as well.

SAUMYA SINGH RATHORE, Co-Founder, WinZO Games

The outdoor sporting industry has severely been affected. How can online gaming both compete and complement that? Will online and virtual gaming enter a new era, and can the top sportspersons participate in virtual games?

Online gaming is in trend for half a decade now. People are preferring to participate in activities indoor than in the field. Moreover, people are consuming the outdoor sports sitting at home via live broadcast. Amid the pandemic, even the outdoor sports are going online! For instance, F1 Racers of India, Narain Karthikeyan, Armaan Eibrahim and Aditya Patil went racing virtually last week to help Seed, a charity that provides for the frontline health care workers. There are a lot of e-Sports tournaments happening these days where renowned sports persons are competing with their followers online.

What is the gaming scene in India? Your games are available in 10 languages. How has that impacted Tier 2/3 town and rural India?

India is the biggest hot spot for online gaming in the world, with mobile gaming revenues set to reach US$1.1 billion in this financial year. Much of this boom can be credited to the growth of sustainable digital infra built by Jio and a wide choice of affordable and powerful handsets. India clocks the highest numbers

when it comes to the number of game downloads and number of games published. More than 300 million people who adopted smartphones for the first time are now spending an average 40-45 playing minutes daily on their devices.

The industry has come a long way from its humble beginnings with the entry of fantasy sports to today's growing popularity of e-sports and skill-based gaming. Today, the number of players in the Indian gaming ecosystem has almost doubled. The number is growing at an exponential rate.

Amid the lockdown following the coronavirus outbreak, online gaming has observed a huge surge in India, especially social gaming platforms like WinZO. With people stuck at home for more time and parted from their loved ones, they are connecting with them over a common activity that is via online gaming. Demand for board games such as Ludo and Carrom has increased ten-folds in India. Private modes have picked up on our platform indicating that people prefer to play with their friends. 80% of the audience is consuming the app in vernacular languages from the Tier 2 -5 rural India. 20% of this non-metro audience is making their first digital media and entertainment payment on our platform. The lockdown has resulted in a 30% surge of Tier 2-5 traffic on our app.

You have talked of empowering housewives and school teachers in rural Bharat and providing them a parallel stream of income. Can you elaborate on that?

WinZO is catering its users in 12 regional languages. We have partnered with over 750+ housewives for translating trivia and app assets on the platform in different languages. To facilitate the entire process, We have built a centralized Language Management system where the translators can login and work at their convenience from any part of India. This strategy not only helps WinZO remain lean as an organization but also helps bring an authentic vernacular experience to the users with the language that they use in daily lives and not orthodox textbook language which is not socially used. For instance, Angela, 35 years old another Hindi translator who puts-up in Nagpur-Maharashtra, had to quit her teaching job and is earning Rs. 15,000-20,000 monthly to support her needs. She believes that such opportunities empower women economically and makes them feel wanted in the society. WinZO has also helped her pick up new skills in this electronic world.

How are you personally coping with this lockdown and any specific tips to companies and WFH employees to manage things better?

Man is a social being who thrives and excels in the company of other human beings. Among many global health, economic and societal disruptions, the COVID-19 coronavirus outbreak has forced millions to isolate. Combining that with media coverage on the pandemic and high degree of uncertainty in all aspects of life, is leaving people in a state of panic.

It is very difficult for us, Indians, to solve for mental wellbeing. We were mostly solving for basics most of our lives. Ability to solve for mental wellbeing was always seen as a luxury. But this pandemic has impacted all of us immensely emotionally. So, let us take a minute to recognize and establish that. Luckily for me I am a psychology student and these things strike me upfront.

As a measure, to cope with stress and take care of one's well-being during this time of hardship one should try to get a healthy routine in place with time to exercise for at least 45 mins, take optimum sleep, respect your mind and let it calm down. Hydration is also important. Filter out obsession of trying to know everything about Covid and over-consumption content. I understand this is a time of distress, so reach out to friends and family and give yourself the emotional space to express. Most importantly, I want to highlight compassion is the most under-estimated soother. So many people need help in so many ways, reach out for an act of compassion—I promise you will be left feeling better. Observe nature—it is at its beautiful best.

Active communication is a key when working from home. A team leader should be proactive in assigning work and in resolving issues/dependencies that may arise out of it. I think the team leader should actively ask the team if they need any guidance or escalation with the work that they are doing.

It's critical that we also consider that lives are disrupted, people are not just managing work but they are also managing a lot more in the absence of household help and additional responsibilities—apart from focusing on timelines, manager should also empathise with the context in which their teams are operating and support in whichever way possible. More than checking on the deliverables, it's critical that the manager takes initiative to reinforce that the members would be fine- proactively dismiss/address any ambiguity related to job threats and wage cuts.

NEED OF THE HOUR: SECURE, SMART & INTELLIGENT NETWORK

PCQuest, in association with Aruba and Ashtech, held a webinar on the Secure, smart & intelligent network. It was well-attended, informative and the participants gave interesting talks about the need for a secure network, especially during the Covid-19 endemic crisis

PCQ Bureau

Sunil Rajguru, Editor, PCQuest, said that the paradigms are changing. Network is the need of the hour. Business Continuity Planning is very important today. The network continues to be important for BCP. Most attacks still happen at the network layer, and cyber criminals are exploiting Covid-19 to do more of the same. The mobile force is also growing larger, along with the IoT devices, and the network is becoming smarter.

Mohan Singh Negi, System Engineer, Aruba, a Hewlett Packard Enterprise company, said that the vulnerabilities to the network are constantly expanding. The IoT units installed base is also rising. An example is how a fish tank helped hack a casino.

The Aruba ClearPass solution allows visibility, control, and response. You know who is connected on your wired and wireless multivendor environment. You can see who is authenticated by you. It allows visibility, as to who and what is on your network. Profile is everything on the network. You can view the contractor, IoT, headless, employee BYoD, infrastructure, servers, data storage, internal applications, cloud applications, network infrastructure, visitor, administrator and employee. You can know what's connected, real time, 24X7, agentless.

The control is automated, with authentication and authorization. The user can also view the device type/health being used across the network. This can be either of IoT, BYoD, or corporate. Enterprises can define who can access, such as files and applications. ClearPass extends that capability. Trust is enforced by dynamic segmentation. ClearPass has role-based policies as well as a policy enforcement firewall.

You can control compromised devices. ClearPass Policy Manager with OnGuard detects unsecure devices and minimizes risk to the network. It also

supports the endpoint computers, featuring all Windows versions, Red Hat, CentOS, Fedora, SUSE, and Mac OS X.

ClearPass does a health check before a device comes on to the network. It also has an automated defense capability. It takes care of the user connects and download threats. The NGFW/IPS sends the event to ClearPass. ClearPass also isolates the client on the LAN/WAN.

ClearPass Exchange provides the end-to-end control. ClearPass Device Insight has been introduced. It provides AI-powered, advanced visibility. It reduces risk by eliminating the blind spots. It automatically classifies the unknown devices. It ensures secure access via seamless integration with the ClearPass Policy Manager. There is an automated closed-loop network security. Traditional profiling techniques lack device context. ClearPass has ML-based clustering using DPI. ClearPass can eliminate all the blind spots in the network.

Sandeep Parmar, Ashtech Infotech, said that you need to have a long-term association with the industry. Ashtech has had 15 years of association with Aruba, and also HBC and ProCurve, so far.

HOW DEVOPS CAN HELP BUSINESSES DURING COVID-19

PCQuest, in association with Datamato and IBM, held a live webinar on the theme of "DevOps As a Key Differentiator" to give businesses a guided tour on how DevOps and Cloud Adoption can become a key differentiator for BFSI and Retail sectors during Covid-19 crisis

PCQ Bureau

Sunil Rajguru, Editor, PCQuest, said that this current crisis presents an opportunity for businesses to embrace digital technologies to ride through the crisis and prosper.

The live webinar was well-attended and participants got detailed information on the solutions from IBM and Datamato can help make their DevOps and App modernization journey a smooth one.

With the Covid-19 outbreak kicking in an unprecedented social distancing and remote work culture, created a set of challenges for business such as business disruption, cash flow issues resulting in workforce reduction and delays in IT deliveries. To cope up with these sudden changes in the market made them find new ways of doing business, and turn themselves around.

"DevOps can make a difference in this scenario, because it reduces the dependence on humans, and the need to socially collaborate, and instead focuses on speed, agility, quality and automation to respond faster to the changing market demands. In fact, the businesses which had DevOps practices and culture already in place are in an advantageous position today," said Vrushank Salaskar, Vice President/ Strategic Engagement, Datamato.

DevOps increases businesses' ability to deliver applications and services at a faster pace than organizations using traditional software development and infrastructure management processes. Datamato helps enterprises implement DevOps practices that fit their unique environment.

He explained how DevOps automation and a fully automated CI/CD pipeline can encapsulate everything right from Build and Packaging to Deployment and Release, Testing and even Infrastructure Provisioning and deployment of applications.

IBM UrbanCodeDeploy is one useful tool that helps you to address two use cases in DevOps setting-Deployment Automation and Environment Provisioning. Datamato has developed an Environment Provisioning solution for BFSI using IBM BluePrint Designer to replicate an application from one environment to another. This reduces migration time by 70-90 percent.

When it comes to application modernization there is a growing tendency among businesses to switch from monolithic to microservices architecture. "But enterprises often face challenges to embark on this app modernization or cloud-native journey as they don't have the skills or know-hows of migrating from a monolithic to a microservices architecture," said Samit Shetty, Business Leader-ISA, IBM India.

IBM Cloud Paks for applications not only helps businesses to develop new, cloud-native applications, but it also gives them an open, faster and secure way to move their core business applications to any cloud.

The webinar also highlighted the fact that it is important for businesses to have a DevOps culture in place, not just the tools and technology only. People are also needed to be trained to adapt to the DevOps practices to make it a success.
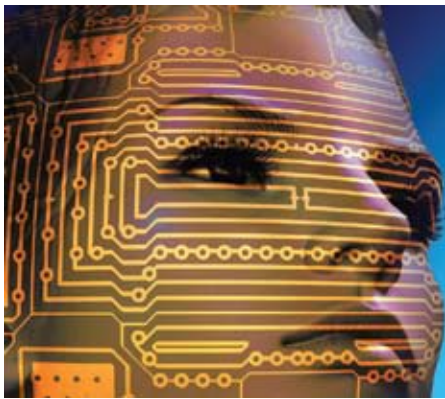
THE EVOLUTION OF MULTI-FUNCTIONAL DEVICES AS WE KNOW IT

AI-enabled technology and systems in MFDs ensure a reduction in human-involvement, increase in printing efficiency, accuracy and cost-effectiveness. AI plays a fundamental role in automating everyday operations and optimizing printing investments

K Bhaskhar

With the Indian printing market rapidly growing and maturing, MFDs (Multi-functional Devices) have become an integral part of businesses across the world, be it for a small size new business or a large-scale enterprise. The ability to perform multiple functions with just one device has not only resulted in business processes becoming simpler but also has drastically increased the efficiency and improved the output. As companies across spectrum has gotten used to the versality of MFDs, some may barely remember a time, when we didn't have these multi-faceted machines in our offices, instead one required separate machines to print and photocopy,hence taking up substantialtime andoffice space. The evolution of MFDs has been an incredible journey and is worth applauding.

How did it all start?

Interestingly, photocopiers first came to the market back in 1959,with the sole function of making copies of documents as the name suggests. In the mid-1950s, offices had three separate machines for photocopying, printing and scanning. Nobody anticipated that photocopiers would one day evolve into becoming MFDs that are now considered the foundation of any productive business.

Till the year 2000, most photocopiers could only copy one document at a time and did not feature the digital capabilities of storing or sending information, as MFDs offer now. Eventually to streamline costs, and optimize business processes—a multi-function device came into existence which impeccably integrated a printing, scanning, copying and fax together. The technology disruption created the need for MFD segment and soon became a business essential and the acquisition of these lay with the administrators and acquisition heads. With further digitalization of businesses, the need for storing essential documents led to the integration of hard drives as part of the machines for frequent printing. Initially a novelty available in only a few models, these eventually became a standard across the industry.

Introduction of the connected era

The digital integration led to MFDs becoming a part of the office network and IT infrastructure as employees were connected to the same network resulting in users giving print commands from anywhere in the office as well as from their smartphones or other connected devices. In terms of document access, scan to mail was a necessity till a couple of years ago. Howeverwith the introduction of technologically intricate yet simple cloud-based management systems, MFDs are now equipped to print, scan and save directly to the cloud, making the entire process as intuitive as ever. It also enables easy information search and retrieval, digital workflow management while helping save IT maintenance and infrastructure costs.

Data Security first

The increased connectivity within the network infrastructure brought in the involvement of CIOs

and CTOs as key decision makers in the purchase of the MFDs, and hence bringing in the need for highest safety standards against cyber threats. A lot of tweaks were made with the introduction of department wise passwords, scanning of one's office identity card or usage of biometrics to print documents, document reminder system to pick up documents left on the machine while scanning or copying—all this helped the organizations not justto keep a track of the print outputbut also the kind of documents being printed. While maintaining and managing data storage cloud-based solutions, it is also important to ensure that both customer and business data is securely stored and erased as and when required. Hence, not just for optimizing business operations, cloud platforms help in making significant savings on both hardware and software front, as it removes any need to install expensive and time-consuming print servers.

Not just this, it evenbecame pertinent to provide businesses with embedded protection against malware execution running on multi-function devices (MFDs). To take it to the next level, even the MFD manufacturers now partner with the leading cloud cybersecurity companies like McAfee, to provide an additional standard security feature, strengthening the commonly overlooked endpoint.This is helping organizations in safeguarding itself from today's vulnerabilities and tomorrow's unknown threats.

AI, the game changer

The integration of Artificial Intelligence in business processes is common these days and MFDs are not indifferent to the concept. AI-enabled technology and systems ensure a reduction in human-involvement, increase in printing efficiency, accuracy and cost-effectiveness. AI plays a fundamental role by activating a protocol for rapid, effective response and remediation that will ensure automating everyday operations, optimizing printing investments and initiating unprecedented productivity.

Not just this, AI plays a vital role in customer service as well. Gone are the times when customers in the anticipation of mechanical parts breaking or needing repairs, used to schedule service maintenance appointments for their MFDs. Today, with the power of predictive maintenance, one can easily forecast when a piece of equipment might fail in the MFD so that maintenance work can be performed well in time to ensure smooth functioning of the machine. Therefore, AI in MFDs enable businesses to expand while not compromising service quality and further reducing the overall cost

K BHASKHAR, Senior Vice President, Business Imaging Solutions (BIS), Canon India

investments.

Automation is the future

Additionally, if we look at the wayforward for MFDs, technology such as Robotic Process Automation is creating prospects to automate repetitive processes and therefore achieve the business goals more efficiently especially when it comes to machines. It provides the potential to have software robots execute the current processes accurately and faster, all the time. This helps in increasing the return on investment and achieving important benefits such as better compliance, cost reductions and scalability. Currently, a lot of sectors like healthcare, BFSI and IT have been successfully using this to assist in numerous functions. Going ahead, it will be interesting to note how it can revolutionize the MFD segment. This will be a testimony to a perfect confluence of hardware and software.

Digital transformation is a constant journey rather than a destination.Thus,focusing on forward-looking technologies will fulfil business needs throughout the document life cycle and accelerate business transformation journeys. For a business to thrive, beyond ideas and a motivated workforce, there must be a perfect amalgamation of hardware and software. The need of the hour is to provide a compelling document management system along with new age MFDs to take the Digital India story to the next level. It will help businesses—big or small—to optimize processes and streamline document workflow which will certainly enhance the overall customer experience.

The author is Senior Vice President, Business Imaging Solutions (BIS), Canon India

5 VIDEO CONFERENCING PLATFORMS TO TRY OUT, AS INDIA ZOOM BAN LOOMS OVER PRIVACY CONCERNS

Zoom is not the only player in the market. There are many collaboration tools to go in for when it comes to video conferencing

Ashok Pandey
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Zoom has grabbed the maximum eyeballs during this coronavirus pandemic. Literally, everyone used the video conferencing platform. Some manage a team remotely on Zoom, others use the video chat platform to attend virtual classes at home. No wonder, even weddings took place on Zoom video calls. But when Zoom caught red-handed while data breaching, most of the people uninstalled and requested to ban it.

Zoom is reported to have a bug that can be abused intentionally to leak information of users to third parties. After this petition was filed to ban zoom and now the Supreme Court has also asked the government to take a look at that.

But there is no reason to get worried as there are other platforms also working on the same to give their audience the best experience of Video Conferencing. These few Video Conferencing platforms are made only to give the personal touch to their potential customers.

Here are the best 5 Video Conferencing Platforms which are safe and user friendly at the safe time-

FLOOR by 10Times

FLOOR is a video conferencing solution built by Noida-based events discovery platform 10Times. Aiming to capture the untapped market of video conferencing for carrying out seminars, summits, or even facilitating

tradeshows or market selling, the application offers video conferencing of varying types, thus attempting to establish itself as a one-stop solution for both personal and professional video-based communications. Professionals need to meet in order to unlock new opportunities and forge relationships.

The USP of the app lies in the additional features available during a video conference, such as audience polls, live question-answers, and even using AI-driven user matching algorithms. They have grabbed interest from different sectors -corporates, education and healthcare sectors. Their target is to achieve 5-10 million minutes of live networking on the platform in the next 30 days, with further scaling of the revenue model in the coming months.

Free access to -
No time limit for calls
Unlimited participants per meeting

Google Meet by Google

Google Meet is a video conferencing app. It is the business-oriented version of Google's Hangouts platform and is suitable for businesses of all sizes. The
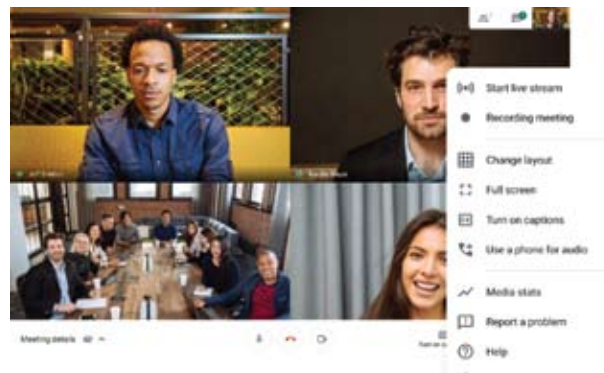
solution enables users to make video calls with up to 30 users per high-definition video meeting. The app allows users to join pre-scheduled meetings from calendar events, choose a link, enter meeting code and even dial in from their phones if the invitation includes a phone number.

Google Meet integrates with G Suite versions of Google Calendar and Gmail and shows the complete list of participants and scheduled meetings. It shows a "join" button for users to connect to the meeting and provides options to mute and turn off the video during the meeting. Google Meet allows users to dial in phone numbers to access meetings, thus enabling users with slow or no internet connection to call in. However, dial-in numbers are only available to the G Suite enterprise edition customers.

Free access to -
60-minute call
25 participants per meeting

Say Namaste, by Inscripts

Say Namaste is a video conferencing software developed by a team of 50 developers working at the Mumbai-based company, Inscripts. Within two days of its initial launch, the online platform has garnered 5,00,000 users as per the company's spokesperson.

With over ten years of experience in building communication products, Inscripts hopes to challenge existing applications by promoting its multi-party video conferencing solution for enterprises and personal users alike. The software also lays great emphasis on file-sharing in a chat window along with live screen sharing possibilities.

Free access to -
No time limit for calls
50 participants per meeting

Cisco Webex Meetings

One of the most popular and trusted video conferencing solutions that make video and audio conferencing possible with sharing, chat, and more. Video conferencing is as simple and seamless as meeting in person.

Share your screen, document, spreadsheet, or

application with everyone. Hosts can record the meeting so others can get up to speed later. Schedule and join meetings from where

you work. Everyone you invite can join your online meeting, no matter how they're connecting, even guests.

Free access to -
40-minute call
50 participants per meeting

GoToMeeting, by LogMeIn

GoToMeeting, a web-hosted service, is an online meeting, desktop sharing, and video conferencing software package. It enables the user to meet online with customers, clients or colleagues via the Internet in real-time.

GoToMeeting offers complete security to each meeting. It includes privacy and security features such as Transport Layer Security (TLS) encryption in transit, AES-256 bit encryption at rest of cloud recordings, transcriptions, and meeting notes, SOC2 Type II + BSI C5 certification, TRUSTe Verified Privacy, Rich Based Authentication and are GDPR, CCPA, and HIPAA readiness.

Join or host a meeting from any device – PC, smartphone or tablet. Get crystal clear full band VoIP audio or phone call.

Free access to -
40-minute call
3 participants per meeting

In the past few weeks, Zoom has had a hard time, due to security and privacy issues, and people started looking for Zoom alternatives. But it's not only zoom, the competitor platforms too have privacy issues.

January 2020, Cisco has discovered a "high-severity" vulnerability in its Webex video conferencing platform and fixed the issue. Consumer Reports evaluated privacy policies of video conferencing platforms and found that these platforms may collect more data than consumers realize.

When you allow any app to access your camera, mic and storage to join a video conference, you can face several potential threats to your privacy and security. Here are four strategies for keeping your personal information safe while video conferencing.

Tips to stay private in video conferencing

Attend voice call whenever possible – Meeting admin can record your webcam, PC or mobile screen or document you are screencasting. It's better to attend with voice only whenever possible. Turn off your camera and mic when listening to others. Share documents such as PPT or PDF over email with colleagues.

Share less – Whenever is possible, join the meeting as a guest and share less personal details such as email, mobile no, etc. If you access the platform to utilise more features, minimize your digital footprint. Choose your platform carefully and stick to that for each meeting. This way you can avoid providing access to your PC or mobile to multiple platforms.

Use burner email – You can create a dedicated burner email for all your video conferencing. Do not use your email which you use for important communications such as banking, social media and healthcare.

Smart password – The habit of having a similar password for everything is not a wise idea. You must create a complicated and different password for your personal emails and banking. For video conferencing, you should have a different password, this way if hackers get access to your burner email and password, even then they won't be able to access your personal details.

PRODUCT REVIEWS
A Powerful Marketing Vehicle

Thousands & thousands of products are launched every year. But a bunch of them are reviewed. A good product backed by experts' review translate into increased user interest and hence sales. Get your product reviewed by CyberMedia Labs which is run by a team of experts/product technologists having 10+ years of experience.
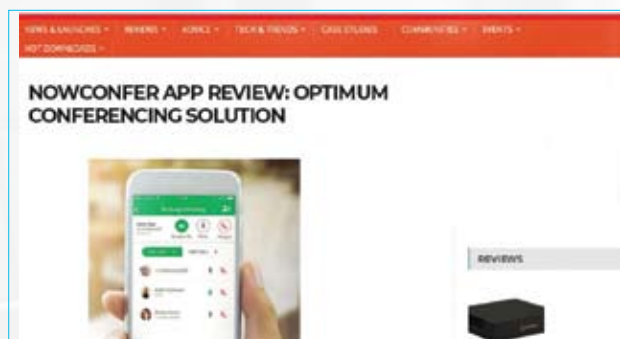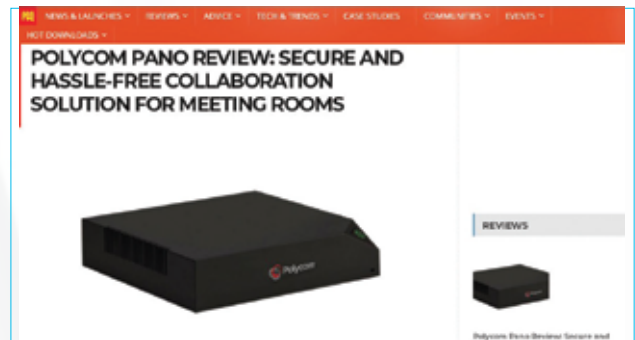
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SOFTWARE

GOTOWEBINAR

— Ashok Pandey
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Online meetings and webinars have become a new normal to meet with our colleagues and get Gyan from global speakers. Webinars also help you build & engage with your audience. This can be used as an incredibly powerful sales tool, as well.

Due to the corona pandemic, most of us are locked inside and connected over the internet. In the past few weeks, I have used multiple platforms to host meetings including GoToWebinar. Every platform has common functionalities with some uniqueness.

I used GoToWebinar for multiple webinars and here is my experience.

Easy setup

To signup, you need to just provide your email ID and create a password. Then log in and you can see the dashboard. GoToWebinar has a quite intuitive dashboard with a clean interface. On the left, all the webinar options available.

On the dashboard, you can check upcoming and past events, plus on the right, you can check the calendar and scheduled webinars. On the dashboard, you can also see the analysis of your past organised events, such as registrants, attendee and attendance rate.

As you scroll down, you can check the recording of the webinars. And below that, you can create a channel this let you promote or curate and share your event recording by adding them to your public or private channel.

Plan, schedule and broadcast

Are you ready to go live? GoToWebinar makes it quite easy, just plan your next web meeting and schedule as per your requirements. There are two ways to broadcast –

One Live webinar and second you can share a recorded video message with your audience. Next, you can decide to make the session interactive where every attendee can talk to the panellists.
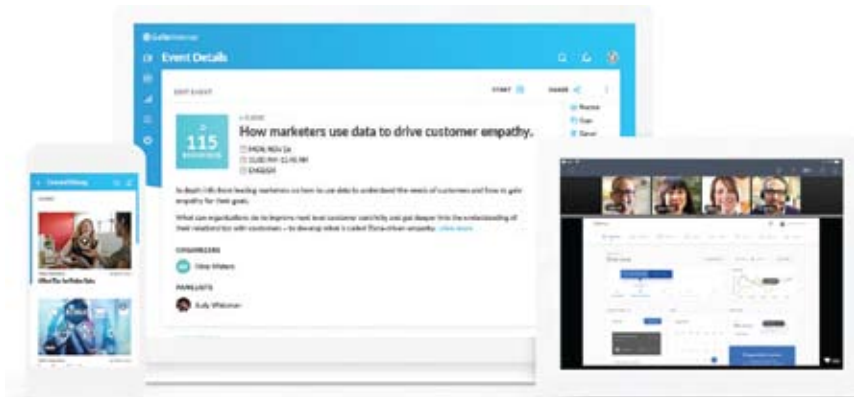
Price: Starts at USD 89 per month

SCORE

PRICE: **8**/**10**
PERFORMANCE: **9**/**10**
FEATURES: **9**/**10**

Overall: **9/10**

KEY SPECS: 100-1000 Participants; Reporting and Analytics; Polls, Handouts, and Q&A; Full Service Registration; Automated Emails;

Accept Payments; Custom Branding; Integrations; VOIP, Phone & Toll Free; Online & Local Recording; GoToStage; Channel Page; Custom URL; Recorded Events; Certificates; Video Editor; Transcripts; Source; Tracking; Video Sharing; Video Embedding

PROS: Stable webinars, easy to use, clean web interface, Interactive poll and survey features, supports multiple hosts, sharing/switching between presenters

CONS: Clunky application user interface, blind over audience view, difficult to manage Q&A panel and setting up on iOS device

Another option let you broadcast discussion happening among panellists.

In both situations, you can add panellists who can share their screen or documents as well as interact using their webcams.

Application setup

You don't need to set up the GoToWebinar application on your device. Whether you are admin, panellist or attendee, when you click on the link it asks to download and install the application on your PC or mobile device. Once installed, you don't require any setup, just let it access your camera and mic.

Admin can log in to the web portal to set up the meetings and share links with panellists and attendees to join the webinar. The application only gets activated when you start the meeting for admins.

When admin adds email IDs of panellists, they receive an email with a link to join the meeting. It also lets you set the calendar for the same. Each panellist receives a different URL to join the same webinar, however, for attendees, there is one common link that admin can share with a selected audience.

Forget about boring webinar invitations, with GoToWebinar you can customise your invitation and make it more interactive. You can add your logo or relevant image to the invite with a custom message for your audience.

Admin can make the session more interactive by adding polls and surveys. Also, the question and chatbox can be used to interact with the panellists and organisers of the meeting.

Tracking

GoToWebinar enables you to track each attendee and their data including name, email, etc. There is one default sign-in form, that can be customised as per your requirements to collect more or targeted info of your audience.

This is only one part of tracking, GoToWebinar does more for your analysis. The analytical report helps to monitor audience, for instance, you share the invitation with 500 people out of those how many registered and then out of total registrants how many joined the webinar. It goes even one step further and let you analyse how many attendees were attentive during the meeting.

The analytics dashboard shows you an overall perspective of done webinars, for deep dive you can select a webinar and find out in detail. Here you download your report for future analysis as well as comparison to future improvements. The report is available in graphical representation plus you can download them in CSV/excel file formats.

If you have run any poll and survey you can see the results of both. Also, Q&A results will be available in this section.

Record each meeting automatically

GoToWebinar lets you record your webinars without any hassle. By default, the meeting gets recorded in your account when you broadcast the webinar. These recordings can be downloaded for further activities or you can share the video link with your colleagues and others.
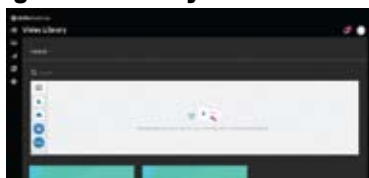
Also, the platform lets you edit the video and transcript. There is one more option called "Download Video Report". This report includes email ID and some other details of the viewers who watched your recorded video.

Set everything as per your needs

GoToWebinar tried to add as many possible easy options for each user. The "Setting" button further help you to customise the platform as per your requirements. Here you can change settings for your audio, registration, webcam, recording, etc.

Performance – What's amazing and what will disappoint you

Setting up a webinar with multiple polls, surveys and panellists is a breeze. You can do that quite easily on the clean dashboard. Even if you forgot a few things or your plan changed at the last moment, editing can be done without any worry.

Polls can be run any point of time, and then share the results with your audiences. Q&A section let attendee ask questions and get the solution right in that particular window or the speaker can pick the question and answer that.

Chatbox lets you interact with everyone, organiser, panellists, admin and attendees. You can send a private message to only one person, a group of panellists and organisers, or with the entire audience.

The streaming goes stable, I have not experienced any freezing or crashing issue till date. The video recording is automated so you can focus on other important things.

Enough amazing things to choose GoToWebinar! Wait, this also has some drawbacks though the UI is simple yet it's clunky. The application has got numerous updates but the window still has some old school design which sometimes troubles as well.

I face an issue with Q&A part, you can see multiple options from Audience View, Sharing, Webcam to Chat options. When you click on one, it opens the panel where you can check the details and perform tasks like a poll. These panels can be undocked and resized. But if you wish to operate Questions panels without undocking, it would show you a single pane with texts. In case of multiple questions, you cant easily check them, it's advisable to undock the panel for a better experience.

Another challenge is organisers can't get an idea about the viewing experience of your audience. Tough, you can control them still can't see the screen. On organiser's desktop, it can look different especially when presenter or panellists share their screen and webcams. Thankfully, GoToWebinar manages that part very smartly and attendees get the best viewing experience.

What was the main pain point! Using the application on Mac. Apple devices look for different approvals and every software behave a bit differently on iOS. Windows and Android devices run smoothly with GoToWebinar for organisers and panellists, but setting up the application on iOS to share your screen or webcam, you are going to face some difficulties.

> **Bottomline:** Simple to use, clean interface and easy to manage functions, these are some strengths of the platform. But it's not the best one, with clunky application interface and compatibility issues on iOS devices, it still needs improvements.

HAMMER UNVEILS THE SMART FITNESS BAND PRODUCT DURING THE LOCKDOWN

Hammer, a consumer audio products and fitness bands manufacturer has unveiled the Hammer Fit Pro Smart Fitness Band and Hammer ID128 Unisex Black Waterproof Smart Fitness Band in India. Since the people are enforced to stay at home, it becomes tough for them to workout, thus it becomes highly essential to track physical activities during the lockdown. The Hammer Fit Pro Smart Fitness Band comes with a detailed ultralight fashionable design built with 0.96 inches LED color HD display for a better visual experience. It is useful in tracking and monitoring almost all the daily activities like heart rate, blood pressure, sleep patterns, calories burned, steps walked. It is 100% waterproof for stress-free use during water activities.

ENABLEX & C-ZENTRIX ANNOUNCE PARTNERSHIP FOR CUSTOMER SERVICE SOLUTIONS

Communication Platform-as-a-Service provider EnableX and customer experience solutions provider C-Zentrix announced their partnership to enhance the latter's gamut of customer service solutions with EnableX's voice and video communication capabilities. To begin with, the two companies unveil the first product that has augmented – CZ Chat.A leading online omnichannel chat that comes with integration with various messaging platforms like WhatsApp, Facebook, Twitter and others, along with web analytics capabilities, CZ Chat will have its communications capabilities expanded from text chats to include audio and video calls as well. Additionally, now, it will also have collaborative features such as Screen sharing and recording.

NUTANIX SIMPLIFIES ADVANCED BUSINESS CONTINUITY WITH AUTOMATION

Nutanix announced several new capabilities in its hyperconverged infrastructure (HCI) software and AHV hypervisor to protect business-critical applications and maintain continuous business operations in the face of a unanticipated disruption or disaster. New capabilities include advanced automation for recovering applications and data, support for seamless multi-site disaster recovery (DR), synchronous replication for workloads running on AHV, and a near-zero data loss with "near sync" replication for recovery point objective (RPO) times of approximately 20 seconds.

BASICFIRST LAUNCHES 'DOUBTS ON VIDEO' FOR STUDENTS

BasicFirst Learning OPC Pvt. Ltd – an aptitude-based personalized e-learning platform – today announced the launch of the world's first 'Doubts on Video' service on its mobile application for students from classes 6th to 12th across all major Education Boards in India (including CBSE, ICSE, IGCSE and other State Boards) and major competitive examinations such as IIT Main, JEE Advance, NEET, AIIMS, NTSE, Olympiads and more.The unique feature empowers students by conveniently resolving their doubts via face-to-face communication. Students receive personalized attention from an experienced mentor in either Hindi or English – making BasicFirst the world's first company to nurture and strengthen student-mentor relationships by venturing beyond the confines of conventional classrooms.

EPIC GAMES RELEASES UNREAL ENGINE 4.25

Epic Games is releasing Unreal Engine 4.25, with next-gen platform support enabling developers to build and ship games for Sony PlayStation 5 and Microsoft Xbox Series X using Unreal Engine. This support solidifies Unreal Engine as a robust foundation for game developers with scalability across platforms, including mobile, consoles, and PC. In addition, Unreal Engine's Niagara visual effects system, battle-tested on Fortnite, is now moving from Beta to production-ready in this release.

HERE TECHNOLOGIES OFFERS SMES FREE DELIVERY TOOL

To meet unprecedented customer demand in the context of the COVID-19 pandemic, HERE Technologies is releasing a new route planning tool that helps SMEs optimize the delivery of goods and services. HERE WeGo Deliver allows businesses to plan and dispatch a delivery service without software development or implementation costs. Users simply upload all their order destinations and number of drivers to the online planning dashboard, and HERE WeGo Deliver optimizes each route and delivery sequence. Drivers can receive their delivery route by email, which automatically opens and populates the delivery route end points in the HERE WeGo mobile app to provide voice-enabled navigation. HERE WeGo is available to download for free on Android and iOS mobile devices.

HEXAWARE LAUNCHES QUARANTINE ZONE CARE MANAGEMENT SOFTWARE SOLUTION

Active tracking and monitoring of COVID-19 is one of the key factors to understanding and thus curbing its infection vector. KareRing, developed by Hexaware TechnologiesLtd, is a cloud-based, quarantine zone care management software solution and mobile application that provides institutional care providers a care management dashboard, quarantine zone tracking and reporting facility.Healthcare organizations, community hospitals, governments, NGOs, law enforcers, communities, enterprises and care providers can use the KareRing app to not only manage and limit the outbreak but also provide timely care management to those in quarantine.

SEAGATE TO OPEN UP PATENTS

Seagate Technology announced that it has signed the Open COVID Pledge. The pledge grants free access to all of Seagate's patented technologies to help enable diagnosing, preventing, containing, and treating of COVID-19.The mission of the Open COVID Pledge is to provide access to every tool at the disposal of businesses and society toward the goal of rapid development and deployment of technologies in a massive scale without impediment, in the fight against the COVID-19 pandemic.

TECNO SPARK 5 BRINGS 'SEGMENT-FIRST' 6.6" DOT-IN DISPLAY

TECNO announced the launch of yet another TECNO SPARK 5 under its popular & successful Spark series. Priced at INR 7999, TECNO Spark 5 becomes the first in the under 8K segment to offer 13MP quadruple rear camera set-up and a BIG 6.6" Dot-In display. The segment-first offering marks TECNO's endeavour to live up to its 'ahead-of-the-curve' approach that aims to provide future-ready devices to its consumers. In keeping with its ethos, TECNO smartphones will introduce best-in-class design, display, camera experience and overall Smartphone experience in the affordable segment.

MICROSOFT INTRODUCES BACK2BUSINESS SOLUTION BOXES FOR SMBS

Microsoft has announced the launch of the Back2Business Solution Boxes for helping Indian small and medium businesses (SMBs) maintain business continuity and embark on their cloud adoption journeys. Curated for specific scenarios in different organization sizes, they bring together offerings across Azure and Modern Workplace. Indian SMBs are facing multiple challenges in running their operations seamlessly during the current crisis, including access to remote working solutions in a secure and scalable environment, disaster recovery and advanced security with device management and threat protection. To provide support in keeping businesses running through any outages and reducing on-premise infrastructure management costs, these offerings are tailored to boost employee productivity and improve customer engagement.

8 cores at your fingertips

Upgrade to the world's highest performing processor for ultrathin laptops. Built for professionals.

AMD RYZEN