



**Upcoming Tech Innovations
Powering the Digital**

Upcoming Tech Innovations Powering the Digital Transformation

Markets and industries around the world are propelling themselves towards the era of digitization powered by technological innovations. Let us dive deeper into the existing tech trends and the upcoming ones powering development into a newer dimension.

Foreword

2021 will be remembered in history as the year crypto went mainstream. It was adopted across several nations, BTC and ETH reached its all-time highs, and the global market capitalization reached nearly \$3 trillion. On the contrary, 2022 is witnessing a completely different picture, with global inflation and geopolitical instability contributing heavily to the crypto bear phase. Bitcoin has dropped almost 2/3rd of its previous November-high, and ETH tanked similarly. Institutional and large-scale investors, however, are optimistic, and confident in crypto's long-term potential. Technological innovations are popping up each year rendering their predecessors obsolete. Current market trends indicate the future will be determined by 5 main technologies.

The first trend is the Internet of Things(IoT) and information development through machine-to-machine communication. It also features the ability to process data with real-time scalability. A notable section of tech experts believes IoT lies at the core of present-day innovation. Others may tilt toward Artificial Intelligence and Machine Learning. AI and ML tools are finding increased uses in delivering useful actionable insights and data analytics. The global markets are expanding with the help of blockchain facilitating real-time communication and

collaboration. It also provides transaction visibility, and trust while eliminating intermediaries thereby reducing transaction costs and time. The technology can also facilitate further digitization. In addition, microservices and UI tools help out in extracting uses out of customer behavior info and user experience across selling channels.

The next trend is the capacity of the technology to process and source vital data to enable businesses towards going in real-time. Streaming technology across social media platforms and entertainment are getting increasingly popular. In addition, automation processes direct towards the optimal utilization of resources across the predictable, scalable, reliable, and consistent operational structure.

M2M, or machine-to-machine communication, in combination with APIs, are generating new information and facilitates platform integration. Serverless cloud computing services are reducing operational expenses and diverting the focus towards consumer requirements rather than set-ups, configuration, installation, and maintenance. Low Code No Code(LCNC) is streamlining testing processes and app development for mobiles and the internet.

The upcoming metaverse will mark the complete transformation of work culture and socialization in the virtual environment. People will be able to participate, communicate, conduct trade, learn, buy the decentralized virtual estate and even earn. While the current focus is on the development of the metaverse, the day is not far from where we can make use of practical metaverse applications.

With the enormous potential of the technology, we feel great joy in offering you our perspective on the current technology states across crypto markets and beyond. At PayBito, we are heavily involved with these technologies on a regular basis, helping us look in the right direction and motivating us for the upcoming future.

- **Ability To Process Information In Real-Time At Scale And Data Creation Lies At The Core Of Innovation**

In the last few decades, organizations beyond all industries have been shifting to digital, and these days, people usually use the catchphrase digital transformation. The meaning of the term “digital transformation”, varies between people and things.. For some, it is about reconstructing methods to bring people, data, and processes together, to help empower employees, engage customers, transform services and products and optimize operations. For others, it is about communications and marketing, principally incrementing the client interface and controlling the customer's experience with the company or product in multiple channels. Despite this phrase overuse, it hints at the element of development that happens to be worth noting.



Another exciting subset of this transformation is a machine to machine communication. It is where machines exchange information without human interaction or interfacing. These days, the maximum of the economy is dependent on it. When it comes to the internet of things, it plays an integral part in predictive maintenance. It helps estimate the time of maintenance and determine the condition of in-service equipment. Also, the supply chain efficiencies are increased by this technology, and it helps improve the accuracy of demand forecast and supply forecast. In the field of healthcare, it is allowing patients and doctors to monitor systems and diseases.

Additionally, the participants of the Financial Market are not just utilizing direct market access and smart order routers to obtain the best execution but additionally analyzing big data to make more effective investment decisions. Machine-to-machine communication produces information in software-defined manners, where the software possesses absolute control, no human interaction is required, there are no hardware-specific dependencies, and productivity can be modified quickly. Additionally, it can be more predictive and gives rise to automatic decision-making coming closer to the edge.

- **Artificial Intelligence, Machine Learning, 5G Networks, Blockchain, and Edge Computing**

Technological innovations are decreasing the dependency on batch processing. Lags are being reduced by supporting innovations around the M2M and AI ecosystem. 5th generation wireless networks and artificial intelligence chips are taking the process closer to reality. The search process decreases latency by taking information near to the origin of captures like tablets, smartphones, and laptops. Artificial intelligence chips happen to be the new generation of microprocessors. By using less power, these are intended to process artificial intelligence tasks quicker. They play an essential role in economic development as they will feature in smart homes, robotics, cities, autonomous vehicles, and other technologies. Being the newest iteration of cellular technology, 5G is engineered to rapidly boost the responsiveness and speed of wireless networks, allowing autonomous carriers to navigate in real-time, for instance.

Autonomous models of vehicles utilize elementary information for driver assistance; however, it is necessary to have human motorists in vehicles still. A large amount of elementary information has been collected on the basis that ML is being run for years. This information is capable of taking the automobile industry to the next phase, where cars will be truly driverless. It will also change the decision-making process, and the sensors utilized to make those decisions will change, too. Presently, remote sensing methods and light detection and ranging systems can be utilized to map structure. It provides vehicles with a 360-degree view of the environment. It serves as the eye of these carriers, helping them drive safely—light detection and ranging systems that are continuously rotating send hundreds of laser pulses each second. Over the next few decades, it is possible to imagine the application of controller area networks - real-time systems for vehicle coordination and intercommunication.



Machine-to-machine communication gives rise to opportunities to form New marketplaces for non-financial and financial assets, and technologies like blockchain can develop the universe of markets that can be digitized. The blockchain serves to be an enabler for connection among machine-to-machine communication and market participants, notably where transparency and trust are lacking. Additionally, smart contracts make sure that the machines act as per specific regulations when managing and settling assets.

The Crypto landscape is encircling around vertical integration across smart contracts, ledger, and layers of business applications on top. Now that the cloud vendors are welcoming blockchain-as-a-service solutions, this is

beneficial. Most importantly, it is exciting that large banks are developing capabilities within the custody and institutional trading of crypto assets. In the meantime, user experience or user interface tools are allowing marketplaces and markets to leverage detailed data regarding customer behavior and user experience within selling channels. Application programming interfaces and microservices are turning out to be the norm for apps to communicate. This, in turn, is facilitating the machine to machine communication. User interfaces are usually tied to a particular application. However, in the upcoming days, an aggregation layer by user interfaces and application programming interfaces will facilitate generalized apps to communicate, giving a better customer experience.

- **The Ability To Process And Store Valuable Information Is Enabling Businesses To Go Real-Time**

Internet of things and Edge Computing are generating massive amounts of information, and marketplaces and markets require the capability to store and transport it from point to source to the point of interest. In the last few years, marketplaces and markets have accepted both hybrid and multi-cloud strategies. A growing acceptance of an expanded ecosystem is seen, where data and workloads are on-premise in multiple clouds or one cloud. They require solutions that enable all those workloads and data sets to be connected. Let's assume that an exchange is being developed in the cloud; however, it has some workloads that remain on-premise. Actionable insights require bringing that information at the center of the datasets it has natively within the cloud or adjacent to the external datasets.

At PayBito, we see a broad assortment of use cases for this technology. The process involves taking vast volumes of on-premise trading data and streaming it in real-time through client portals. It can help streamline the on-premise origin of the high volume real-time data to the cloud giving rise to a more scalable responsive and cost-efficient solution for customers to streamline their order flow. Moreover, it can further be utilized in streaming analytics for surveillance, compliance, and risk management.

- **Robotic Process Automation**

Also recognized as chatbots, robotic process automation is streamlining business in realtime, these days. In this system, by monitoring the user to perform a task in the application's graphical user interface, an action list is prepared. Then the automation is performed by repeating the same task directly in the graphical user interface. Robotic process automation as financial companies to achieve beneficial results from the datasets accumulated in real-time.

Humans perform various tasks in financial services, but, in a maximum of cases, they need not require careful handling or complicated problem-solving. With robotic process

automation, there is a possibility to regulate those processes, thereby facilitating people to concentrate on exceptions. Robotic process automation can also be considered as a use case for market operating functions that need to be performed automated and at scale. This includes compliance case management and surveillance.

Due to automation, one can expect a better result for the markets as a whole, and it also facilitates marketplaces and markets to use resources more efficiently. Initially, it helps them to get a predictable, scaled, reliable, and consistent operational model.



The financial markets have been widely accepting robotic process automation over a few years. There are use cases in customer-facing space, particularly in marketplaces and markets that scale out and apply software-as-a-service models.

The consistency and improved efficiency that robotic process automation brings points to a more productive client experience. Robotic process automation could transform the way marketplaces and markets work and bring clients closer to the mission of their value proposition. Such a technology facilitates various domains to be managed without needing layers of business between the product teams and the customer. Additionally, it helps manage some of the fixed overhead expenses and reduce prices while ensuring full efficiency and compliance. Alternatively, marketplaces and markets need to demonstrate that robotic process automation is consistent with the regulatory framework and supports the same. Moreover, they need to be able to demonstrate the regulatory process as well.

- **APIs And Platforms Facilitate Integration of Machine-To-Machine Generated Information**

This process is having a significant impact on financial services and other industries. In this case, the products are being accumulated together and evaluated to check how customers interact with them, and the data is utilized to deliver a diverse client experience. These platforms are additionally allowing markets and marketplaces to become entirely digitized and help connect all of the segments of the business.

The exposure of digital services of a firm and the API economy and assets through API in a controlled manner is tightly connected with the cloud, thereby establishing a base for scalable and innovative growth.



- **Serverless Cloud Computing**

With that being stated, serverless computing is facilitating this trend. When it comes to on-premise frameworks, financial organizations need to purchase or capitalize, deploy, maintain, and provision hardware and storage areas and servers to operate an application and record data.

Considering a conventional cloud environment, it can be stated that a certain amount of maintenance and provisioning is always needed for proper infrastructure. It can also be termed as undifferentiated heavy lifting. It means that organizations are committing resources to such activities rather than concentrating on

improving the features that their clients want. In the case of serverless computing, applications or portions of applications are intended to operate on-demand on hardware. The cloud provider dynamically provisions this. The security and scale are taken care of by the cloud provider, making the entire infrastructure practically invisible. These days, cloud providers provide various kinds of serverless compute environments that can manage all but the most challenging patterns. This technology is connected to the concept of utilizing event-driven architecture to make the most efficient usage of the same.

- **The Metaverse Will Blur the Lines Between Physical and Virtual Worlds Bringing People Closer than Before**

It is no secret that most of the global tech giants have already invested and conducted research in the metaverse. The metaverse presents a plethora of opportunities and possibilities ranging from gaming, social networking, e-commerce, education, simulation training, virtual workplaces, real estate, and countless more. Real-world activities can be implemented across the metaverse which allows the user to connect to the virtual ecosystem through AR/VR sunglasses. Virtual real estate had been trending a few days earlier in metaverse-based games. Nations like Saudi Arabia had made multi-billion dollar investments in the metaverse development and including the

construction of a full-fledged metaverse city as well.

At present, the metaverse designers are trying to incorporate the best possible version of reality in the AR universe, incorporating realistic components for building a baseline across their metaverse. The metaverse ecosystem is being developed in a decentralized fashion offering autonomy and agency to metaverse users, imbibing visual cues, and optimizing emotions across the virtual environment. The immersive environment will inspire users to contribute and will sustain a long-lasting vision.



Bottom Line

Marketplaces and markets are harnessing potentially disruptive and innovative technologies to boost efficiency, enhance security, reduce prices and enhance the client experience by facilitating regulatory compliance and generating revenue. A number of them are already adding artificial intelligence, machine learning, machine-to-machine communication, and blockchain technologies into their strategy. Those industries are actively taking part in industry operating groups to determine how they can make the most of such technologies and make sure that their implementations match the rules and regulations.

Throughout 2022, we will be facing our transformation both as a technology provider and as a marketplace. As we continue to provide our technologies and offerings increasingly to other industries, we see the lines blurring further between markets and capital

markets everywhere. We, along with our team, are working to transform into a genuine platform organization, delivering business value through blockchain and services. We intend to be the game-changer of innovation within our industry and also beyond. 2022 has been a significant year in terms of the adoption of AI, Cloud technology, IoT, and blockchain in developing scalable business solutions. We look forward to the upcoming years with increased participation and offerings of metaverse development solutions for our customers.

We are equally excited regarding the future of marketplaces and are looking forward to collaborating with issuers, technology companies, market participants, and regulators outside of capital markets. Together in a team, we will work to create an efficient, more robust, and transparent economy of the marketplace that will all be set to take on the next decades and more decades to come.