FINTECH: FRONTIER OF FINANCE AND TECHNOLOGY

FINTECH NEWSLETTER

MESSAGE FROM EDITOR'S DESK

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Greetings and welcome to Volume I Issue 2 of the Newsletter of Fintech Club of School of Business and Management, Christ (Deemed to be University, NCR Campus) – FINTECH- FRONTIER OF FINANCE AND TECHNOLOGY.

This newsletter is an initiative of newly formed Fintech club comprising of Fintech undergraduate students of SBM and aims to publish articles on monthly basis, contributed by the students of Fintech club. Through this newsletter Fintech club is trying to bring latest developments in the area of technology for financial firms to the readers and in turn this will try to fill the knowledge gap created by continuous evolvement of technology in financial sector.

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Algorithmic Trading : The Future is Here

BY ANIMESH ADITYA | 5BBAFT | 20212606

Trading or investing in equity markets or any other market is all about competing with the existing market participants. The underlying objective is to have an edge over others. Algorithmic Trading is one such advantage or edge that seems to be influencing the fortunes of various tech-savvy market participants.

Algorithmic Trading (also known as "algo-trading") is a trending topic these days in the market; trading has always been on the lookout for evolving technologies to profit from new-age data. India has 50-60% penetration of algo-trading, but the developed markets have much higher penetration, more complex products, and more accessible regulations. Indian markets and algo-trading will continue to grow. Algo-trading is controlling seventy-five per cent of the total trades in the US equity markets. Algorithmic Trading (also called Automated Trading, Black-box trading) uses a computer program that follows a defined set of instructions as algorithm to place a trade.

The trade can generate profits at a speed and frequency that is impossible for a human trader. They are placed by computer algorithm. The defined sets of instructions are based on timing, price, quantity, or any mathematical model. Apart from profit opportunities for the trader, algo-trading renders markets more liquid and more systematic trading by ruling out the impact of human emotions on trading activities. It is however a trading strategy which is automatic and executed using computers. Algorithms can make and execute thousands of trading decisions and that's where the advantage over humans lie. Algo-trading has become popular as an increasing number of traders search for an advantage over others and identify their core competence in this type of trading. The goal is to generate higher profits consistently by using such an advantage over the other market participants.

Traders prefer algorithms by machines because the human brain cannot process the volumes of information needed to make trading decisions and place orders like a computer does. The unique

advantage of Algorithmic Trading is that it can process millions of pieces of data per second, make decisions in a few milliseconds and take autonomous actions. If that was not enough, one of the reasons why algo-trading is popular is also because it can be applied across different asset classes, be it foreign exchange, bonds, commodities or any other tradable asset class. According to several experts, it is not yet possible to digitise the instincts of a really good trader but Algorithmic Trading is a far more superior way to beat the rest of the participants in the market.

Benefits of Algorithmic Trading

Algo-Trading provides the following benefits:

- Trades are executed at the best possible prices.
- Trade order placement is instant and accurate (there is a high chance of execution at the desired levels).
- Trades are timed correctly and instantly to avoid significant price changes.
- Reduced transaction costs.
- Simultaneous automated checks on multiple market conditions.
- Reduced risk of manual errors when placing trades.
- Algo-Trading can be back tested using available historical and real-time data to see if it is a viable trading strategy.
- Reduces the possibility of mistakes by human traders based on emotional and psychological factors.

Most of the algo-Trading that is happening today is High-Frequency Trading (HFT), which attempts to capitalise on placing a large number of orders at rapid speeds across multiple markets and multiple decision parameters based on pre-programmed instructions.

Algorithmic Trading is used in many forms of trading and investment activities including:

- Mid- to long-term investors or buy-side firms, pension funds, mutual funds, insurance companies - use algo-trading to purchase stocks in large quantities when they do not want to influence stock prices with discrete, large-volume investments.
- Short-term traders and sell-side participants, market makers (such as brokerage houses), speculators, and arbitrageurs - benefit from automated trade execution; in addition, algo-trading aids in creating sufficient liquidity for sellers in the market.
- Systematic traders trend followers, hedge funds, or pairs traders (a market neutral trading strategy that matches a long position with a short position in a pair of highly correlated instruments such as two stocks, Exchange-Traded Funds (ETFs), or currencies) - find it much more efficient to program their trading rules and let the program trade automatically.

Algo-Trading provides a more systematic approach to active trading than methods based on trader intuition or instinct.

Types of Algorithmic Trading

Algorithmic Trading can basically be classified into two broad categories:

1. **Execution Algorithm**

Execution Algorithm is considered to be an intelligent program used to slice up large trades. Usually, such large trades are sliced up in order to have minimal market impact and are placed on behalf of pension funds, mutual funds, etc. In an Execution Algorithm, it is common to see large trades being executed over a period of time.

2. **High-Frequency Trading (HFT)**

While the Execution Algorithm is all about minimising the market impact, High- Frequency Trading is much more complex and self-learning. It can make decisions on what, when and how to trade

while it executes trades on its own without any human inputs. High-Frequency Trading is war-raging algorithm execution and is always found to be competing to find the best opportunities and execute them as fast as possible to generate higher profits consistently. In fact, High-Frequency Trades thrive on speed. What differentiates High Frequency Trading from other trading strategies is the presence of low latency. Latency provides the strategy with a unique advantage.

Algorithmic Trading Strategies

Any strategy for algo-Trading requires an identified opportunity that is profitable in terms of improved earnings or cost reduction. The following are common trading strategies used in algo-Trading:

- Trend-Following Strategies
- Arbitrage Opportunities
- Index Fund Rebalancing
- Mathematical Model-Based Strategies
- Trading Range (Mean Reversion)
- Volume-Weighted Average Price (VWAP)
- Time Weighted Average Price (TWAP)
- Percentage Of Volume (POV)
- Implementation Shortfall
- Beyond the Usual Trading Algorithms

Technical Requirements for Algorithmic Trading

Implementing the algorithm using a computer program is the final component of Algorithmic Trading, accompanied by backtesting (trying out the algorithm on historical periods of past stock-market performance to see if using it would have been profitable). The challenge is to transform the identified strategy into an integrated computerised process that has access to a trading account for placing orders. The following are the requirements for algo-Trading:

- Computer-programming knowledge to program

the required trading strategy hired programmers or pre-made trading software or trading bots.
- Network connectivity and access to trading platforms to place orders.
- Access to market data feeds that will be monitored by the algorithm for opportunities to place orders.
- The ability and infrastructure to back-test the system once it is built before it goes live on real markets.
- Available historical data for back-testing depending on the complexity of rules implemented in the algorithm.

How Can Someone Learn Algorithmic Trading?

Algorithmic Trading relies heavily on quantitative analysis or quantitative modelling. As you'll be investing in the stock market, you'll need trading knowledge or experience with financial markets. Lastly, as algo-Trading often relies on technology and computers, you'll likely rely on a coding or programming background.

Conclusion

Algorithmic Trading is an inevitable evolution of the trading process. When compared to traditional trading, algo-Trading is much faster and accurate and can be carried out without human errors. It does look like algo-Trading is the future of trading and any serious trader who intends to trade profitably will have to learn it going forward. This may be necessary not only to earn consistent profits but also to stay afloat in the ever-competitive trading space. When it comes to algo-Trading technology is the key factor and traders will have to upgrade not only in terms of share market knowledge but also in terms of technological resources. Indian markets along with other emerging markets do provide good opportunities for algo-traders as it has a smart order routing system, and the markets are liquid. Also, Indian markets provide co-location facilities and have sophisticated technology at both the stock exchanges.

Cloud Computing
&
It's Impact on Fintech Companies

BY BHUVANESWARI CHITHIRALA | 3BBAFT | 21211424

What is Cloud Computing?

Cloud Computing is the delivery of different IT services through the internet. The services include data storages, databases, servers, networking and software. Cloud-based storage allows its users to save files at a remote database and gives them the privilege to retrieve them on demand. Instead of buying, owning, and maintaining physical data centres and servers, you can access technology services on an as-needed basis from a cloud provider. The cloud is used by organisations of all sizes, types, and industries for many purposes. There are many benefits of using cloud computing which includes reduction in IT expenses (cloud also follows a pay for what you consume method), increased security, flexibility, continuity, loss prevention, automatic software updates, quality control and many more. Clouds are used for many different purposes: to create cloud-native applications, test and build applications, store and backup data, analyse data, deliver software on demand, and many more.

How Does Cloud Computing Work?

Cloud Computing works through data centres where its users store data in virtual servers instead of storing them on their phones, tablets or laptops. These virtual servers connected to huge data centres which have the infrastructure to store and protect your data. The three main cloud service models are Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS).

Based on delivery models, Cloud Computing is of three types:

1. **Public**
Public clouds are those that are owned and operated by a third-party cloud service provider. Users of these types of clouds access their data through the web browser. Examples of public cloud providers are Google, Apple, and Microsoft.

2. **Private**
Private clouds are those that are specific to a particular company/organisation where the services are maintained on a private network.

3. Hybrid

Hybrid clouds are a combination of both private and public clouds where data and applications are shared with each other.

Impact of Cloud Computing on the Fintech Industry

Cloud computing is impacting every industry in the market, it is becoming increasingly popular in many industries, including Fintech. Fintech startups embrace every form of technology to create an efficient and effective financial system. Fintech is a rising industry, thriving with more unicorns than any other. With large amounts of data that needs to be stored, analysed, and managed securely, it has become pertinent for Fintech to use cloud technology. Cloud Computing is acting as an accelerating trend in the Fintech sector which is helping it in meeting all the current financial sector requirements. It has been observed that cloud computing is helping the Fintech sector in reaching its compound annual growth rate of 23.84%. Cloud technologies are acting as a one-step solution to all the requirements of Fintech which includes providing 24/7 services with zero down-time, high agility, security, speed and many more.

For a growing industry like Fintech, data integration has now become a necessity due to a continuous increase in the user demands, amount of data that needs to be processed and complexity of data and cloud is the only way to achieve it along with reliability and security. It is helping Fintech companies by reducing their operational costs of maintaining and running on-site data storage systems. By leveraging the power of advanced technologies like Data Science, Artificial Intelligence, and Machine Learning the specialised tasks like credit scoring, fraud detection, and banking processes can now be achieved rapidly and smoothly through Cloud Computing. Cloud technology is also helping fintech companies in enhancing customer satisfaction by helping them in creating modular customer-centric services.

The Covid-19 outbreak has created many hurdles for the Fintech industry and Cloud Computing helped it in facing those and in providing quick and easy financial services to customers. One of the biggest challenges of the Fintech industry is that it deals with financial data which is very crucial and requires intense security systems for ensuring its security. Cloud technology provides a highly secure environment which helps Fintech companies in ensuring the safety of their data. Cloud technology allows the company to concentrate more on customer care and in providing help to the consumers by ensuring that the services are always operational to its maximum potential. Fintech companies are able to meet their increasing customer expectations particularly of generation-Z and millennials with the help of cloud technologies. Cloud technology is helping the companies in creating self-servicing applications which are one of the top demands of today's generation. Some of the cloud service providers in the fintech cloud computing sector are Amazon web services, Google virtual cloud, Microsoft Azure, Aliyun and IBM Bluemix.

Conclusion

In the current scenario, Cloud Computing is only being used by a small number of Fintech firms for their core services. However, many companies are using it for non-core services. Most changes are being seen in smaller Fintech firms due to their ability to quickly adapt to the latest developments. However, large companies of the industry are also realising the importance and the benefits of using Cloud Computing and are trying to adapt to this new technology. Cloud Computing will help the Fintech companies in providing better services to their customers and also in becoming more competitive in the market by reducing their operating costs.

What are Decentralised Autonomous Organisations (DAOs)?

&

How Do They Benefit the Non-Fungible Token (NFT) Market?

BY CHIRAG JAIN | 5BBAFT | 20212613

DAOs are an upcoming type of legal structure. They have no central governing body, each member of a DAO, shares a common goal and strives to act in the best interests of the entity. DAOs, have recently gained popularity due to cryptocurrency trading and blockchain technology being largely used, are used to make decisions in a bottoms-up management approach.

A DAO launch happens in a 3-step process:

1. **Smart contract creation**

First, a developer or group of developers must write the DAO's smart-contract. They can only use the governance system to change the rules enforced through these contracts after they have been launched. That implies they must thoroughly test the contracts to verify that key aspects are not overlooked.

2. **Funding**

After the smart contracts are written, the DAO must decide how to collect financing and implement governance. Tokens are generally sold to raise funding and they grant holders voting rights.

3. **Deployment:**

After everything is in place, the DAO must be launched on the blockchain. From this point on, stakeholders make decisions about the organisation's future. The organisation's creators (individuals who designed the smart contracts) no longer have a greater influence over the DAO as any other stakeholders.

Why Do We Need DAOs?

1. A key advantage of DAOs is the lack of trust needed amongst two parties. While traditional organisations require a great deal of faith in the people behind them, especially on the part of investors, DAOs just require trust in the code.
2. Trusting that code is easy to accomplish because it is publicly available and can be thoroughly tested before release. Every action taken by a DAO must be accepted by the community and be entirely open and verifiable

1. Trusting that code is easy to accomplish because it is publicly available and can be thoroughly tested before release. Every action taken by a DAO must be accepted by the community and be entirely open and verifiable.
2. There is no hierarchy structure in a DAO. Nonetheless, it can complete tasks and flourish while being governed by stakeholders through its native token.
3. Since there is no hierarchy, any stakeholder may provide an innovative idea that the entire group will evaluate and improve upon. Internal disputes are typically handled simply by the voting methods from the smart contract's pre-written terms.
4. DAOs let investors pool their cash, enabling them to invest into upcoming startups and decentralised ventures whilst sharing the risk and any gains that may result.
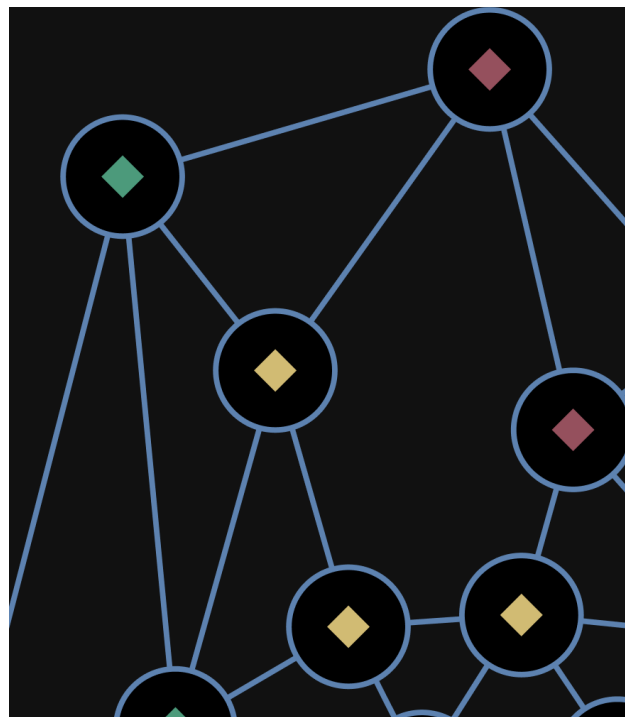
How NFTs Benefit from DAOs?

Investing in an NFT project, particularly a popular one, might often involve large amounts of money that small traders may not be able to pay. Collector DAOs are a method in which NFTs and DAOs are interconnected. A Collector DAO is a group of people that pool their money to buy and sell NFTs. A Collector DAO allows multiple people to own a piece of NFT. The APE (Annualised Premium Equivalent) DAO is indeed an example of a collector DAO, since it fractionalizes Bored APE Yacht Club NFTs, enabling multiple users to possess a part of the same NFT.

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The link between DAOs and NFTs is not restricted to collector DAOs. DAOs can also assist in the creation of NFT initiatives through community governance. Community members or/and artists may collaborate to make decisions and provide suggestions for the NFT project's future path.

Furthermore, DAOs have the ability to assist smaller enterprises or creators in developing a loyal following. However, unlike certain superstars and famous artists who already enjoy a substantial fan base, not every new creator will have a committed fan base from the beginning. Collector DAOs, similar to crowdsourcing platforms, may help generate cash and build involved communities for various NFT initiatives by enabling users to cast votes on the projects they want to see succeed.

India at It's Forefront of A Fintech Revolution

BY SHAGUN THAKUR | 5BBAFT | 20212653

Fintech is quickly changing the financial business, as banks digitise themselves, offering paperless services, and providing easy credits. For the unenlightened, Fintech is a term used to portray rising computerised innovations that plan to improve and robotize the conveyance and utilisation of monetary administrations. The word Fintech itself is a blend of Finance and Technology. The term Fintech was first used to portray the technology utilised in the back-end frameworks of laid out monetary associations. Today, in any case, Fintech traverses different areas and ventures including schooling, retail banking, charity gathering pledges, speculation of the executives, and significantly more. Through specific programming and calculations, Fintech helps organisations, entrepreneurs and shoppers deal with their monetary activities and cycles. Fintech has additionally come to incorporate the turn of events and utilisation of digital currencies like Bitcoin in the present times. Albeit various areas of Fintech keep advancing today, a huge piece of Fintech actually centres around the conventional worldwide financial industry and India is on the front line of this.

**Fintech Industry in India: A More Critical Look**

Banks have customarily filled in as the doorway to instalment administration in India. Be that as it may, with the fast progression of innovation, this no longer seems, by all accounts, to be the situation, as the imposing business model of banks in this space is bit by bit debilitating.

Lately, India's instalments framework has seen significant upgrades, especially with the presentation of new instalment systems and points of interaction, for example, Immediate Payments Service (IMPS), Unified Payments Interface (UPI), Bharat Interface for Money (BHIM), and others. The public authority's "Make in India" and "Computerised India" extended likewise and assumed a huge part in speeding up the reception of Fintech. It is excellent that the Reserve Bank of India (RBI) has likewise pushed the developing utilisation of electronic instalments to lay out a genuinely credit only economy as of late.

Besides, government activities, for example, the execution of demonetization and GST have likewise set out a significant development freedom for Fintech projects all around the country. Despite the fact that demonetization brought about a ton of mayhem and craze, particularly among the normal people, eventually, it was the driver for a shift away from a paper-based, cash-based economy towards computerised, electronic, and innovation driven stages that supported the country's now existing Fintech transformation. Also, it's simply sensible to accept that the COVID-19 pandemic has hurried this digitalisation across different classes, with contactless and credit only instalments elevated to support social removal.

"Computerised instalments have turned into a lifestyle in India and we have seen 10-15 million new clients hitting on the computerised fleeting trend throughout the course of recent months. Two factors that prompted this change were demonetization and Covid-19 pandemic. There is a hugely complicated environment at the backend however the rethinking at the backend has prompted fabulous experience for the clients, setting off a monstrous reception", says Hemant Gala, VP-Financial Services and Payments of PhonePe, an Indian computerised instalments and monetary administrations organisation established in 2015. A report expresses that 67% of the (in excess of 2100) FinTechs in India today were established over the most recent five years. With the appearance of cutting edge stages like Paytm, PhonePe, MobiKwik, and so on, computerised instalment frameworks have evidently been the banner carriers of the Indian Fintech market. Furthermore, Facebook and Reliance Jio's worldwide organisation is supposed to essentially change India's computerised instalments area, with a specific spotlight on hyperlocal advanced trade that will arrive at level 2 and 3 urban communities and country regions.
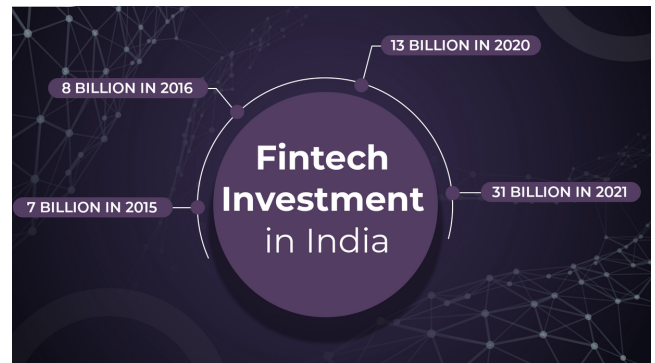
The Fate of Fintech in India

Despite being an immensely broadened and populated country, a colossal part of India remains underbanked, underserved and dependent upon a continually changing administrative climate. Also, for these very reasons, the country's monetary scenes and inexplicable difficulties are no simple obstacles to sustain. This is where Fintech enters the condition, with its capacity and ability to modify and change India's monetary and banking administrations area. Because of different factors, for example, a development driven startup scene, a profoundly positive market, upgraded cell phone and web entrance levels, a youthful populace with the middle age during the 20s, and government-drove endeavours to advance the business, the nation offers an incredible space for a Fintech upset. What's more, the developing consciousness of monetary innovation has furnished the Indian FinTech industry with a genuinely necessary lift.
Fintech organisations' developing associations with customary banking, insurance, and retail areas, where they are effectively taking care of advancing client needs, will additionally speed up Fintech's extension in India. The presence of large number of elements demonstrates a positive shift towards Fintech and present a tremendous development potential for the business, with the nation equipping towards huge reception.

RBI vs Buy Now Pay Later (BNPL) Apps

BY VIDHAN MEHRA | 5BBAFT |20212663

In India, where not more than 3% of the total population uses a credit card, the option to lend money via digital apps is giving many citizens access to credit for the first time.

Buy Now Pay Later (BNPL) apps are a Point-of-Sale (POS) financing solution that allows the user to receive the products/services and pay for them in full after 30 days or in smaller instalments over time. There is no extra charge or interest, provided the amount is paid on time. But despite the convenience offered by BNPL cards, they are receiving heat from the regulators. On 20th June 2022, RBI restricted non-bank wallets and prepaid cards from loading credit lines.

Why is The RBI Hindering The Growth of BNPL Cards?

BNPL apps partner up with Non Banking Financial Corporations (NBFCs) and issue credit cards to people that don't qualify for credit or to those who don't have a stable source of income, without performing any background checks. This provides people with the purchasing power that they don't have in reality which eventually leads to accumulation of debt.

According to the data released by LendingTree, 42% of the people who took credits have made late payments. BNPL cards are also known for increasing the order value of customers which drastically stretches their budget and eventually puts them into a debt trap. So in reality, there are more cons than pros for customers. Considering this dark side of BNPL cards, RBI has decided to halt their growth and form proper guidelines for them.

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